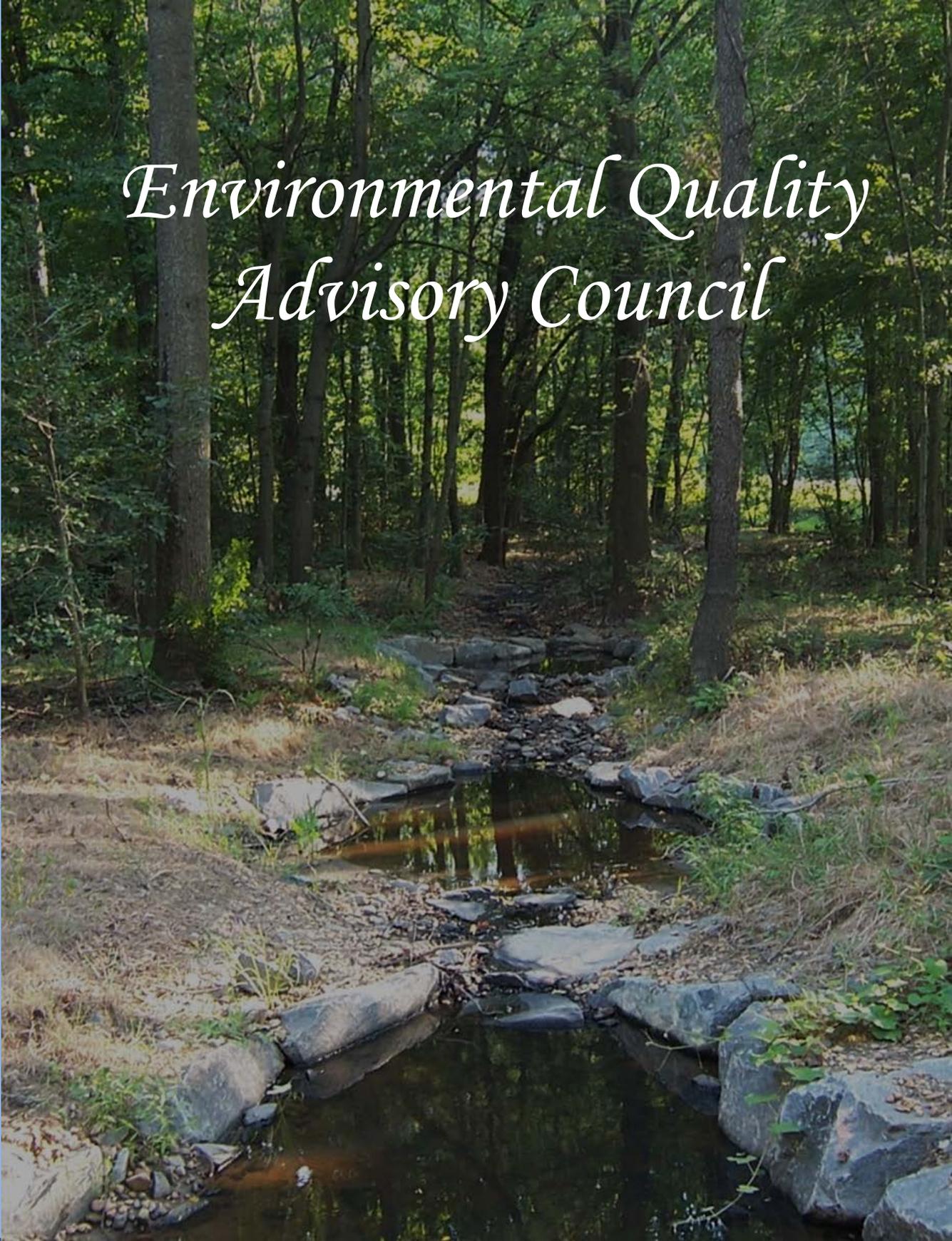


Annual Report on the Environment, 2012, Summary Report

A Fairfax County, Virginia Publication - November 2012

# *Environmental Quality Advisory Council*



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



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



*The cover shows a portion of the stream restoration project at the Fairfax County Government Center. Photo by Noel Kaplan, Senior Environmental Planner, Fairfax County Department of Planning and Zoning. Cover design by Talia Schmitt, Student Member, Environmental Quality Advisory Council.*



---

ANNUAL REPORT  
on the  
ENVIRONMENT  
2012



SUMMARY REPORT

Fairfax County, Virginia

Environmental Quality Advisory Council  
November 2012

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](http://www.fairfaxcounty.gov/eqac)**



**BOARD OF SUPERVISORS**

**Sharon Bulova**, Chairman  
**Penelope A. Gross**, Mason District, Vice Chairman

**John C. Cook**  
Braddock District

**Catherine M. Hudgins**  
Hunter Mill District

**John W. Foust**  
Dranesville District

**Gerald R. Hyland**  
Mount Vernon District

**Michael R. Frey**  
Sully District

**Jeff C. McKay**  
Lee District

**Pat Herrity**  
Springfield District

**Linda Q. Smyth**  
Providence District

**ENVIRONMENTAL QUALITY ADVISORY COUNCIL**

**Stella M. Koch**, Chairman  
**Larry Zaragoza**, Vice Chairman

**Jeff Allcroft**  
**Linda Burchfiel**  
**Frank B. Crandall**  
**Frank Divita**  
**Johna Gagnon**

**George W. Lamb**  
**Robert McLaren**  
**Talia Schmitt**  
**Richard Weisman**  
**Glen White**

**Edward L. Long Jr.**  
County Executive

**David J. Molchany**  
Deputy County Executive

**Robert A. Stalzer**  
Deputy County Executive



## **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. Initially, it is intended to assist the Board of Supervisors in evaluating ongoing environmental programs and to provide the basis for proposing new programs. The document also aids public agencies in coordinating programs to jointly address environmental issues. In addition, the report is directed to residents and others who are concerned with environmental issues.

Similar to last year's Annual Report, EQAC is presenting this year's report in two formats: (1) A detailed report similar to the reports that have been produced each year; 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. In addition, most of the chapters of each report format include discussions of stewardship opportunities. Both report formats are provided electronically, but only the summary document is being made available in hard copy. It is EQAC's hope that this approach to report formatting will provide interested readers with the level of detail or generality that they desire while saving resources associated with hard copy production.

The report continues to include 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. An appendix addressing state legislation relating to the environment is also provided within the detailed report format, as is an appendix providing EQAC's resolutions and positions taken over the past year. New to this year's report is a "spotlight" on two environmental initiatives of Fairfax County Public Schools: High performance and sustainable schools; and Get2Green Environmental Education and Action. EQAC commends FCPS for working towards improved environmental performance in these areas. The report also includes a short table identifying who people can call in regard to various potential environmental crimes/violations. A similar table was provided in last year's report; in previous years it had been included within the Hazardous Materials chapter. The report also includes EQAC's "Scorecard" of progress made on its recommendations from last year's report.

Within each chapter of the detailed report format 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. As was the case in last year's report, recommendations are presented in two formats: items addressing ongoing considerations and continued support for existing programs are noted as "comments." Items addressing new considerations, significant refinements of previous recommendations, or issues that EQAC otherwise wishes to stress, are presented as "recommendations."

This report covers activities affecting the environment in 2011; however, in some cases, key activities from 2012 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 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 Master Naturalists  
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 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 Regional Park Authority  
Northern Virginia Soil and Water Conservation District  
Occoquan Watershed Monitoring Laboratory  
Reston Association  
United States Environmental Protection Agency  
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 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 2011 *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 20, 2012

The Environmental Quality Advisory Council is pleased to present the 2012 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 2011, but also includes significant actions from 2012 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. Additionally, we have again highlighted environmental stewardship opportunities within the report chapters.

New to this year's report is a "spotlight" on two environmental initiatives of Fairfax County Public Schools: High performance and sustainable schools; and Get2Green Environmental Education and Action. EQAC commends FCPS for working towards improved environmental performance in these areas.

EQAC thanks the board for its continued strong support of environmental programs, most specifically: 1) the work and focus on enhancing the Comprehensive Plan and planning process; 2) the commitment of the additional 1/2 penny for stormwater program funding; and 3) leadership in energy conservation with funding for a private residential education/outreach program and a task force on possible private sector commercial programs. We understand that although budget constraints lessened again this year they continue to impact all programs within the county.

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

---

**Environmental Quality Advisory Council**  
c/o Department of Planning and Zoning  
12055 Government Center Parkway, Suite 730  
Fairfax, Virginia 22035-5509  
Phone 703 324-1380  
FAX 703 324-3056  
[www.fairfaxcounty.gov/eqac](http://www.fairfaxcounty.gov/eqac)

and jobs but also about having a clean and healthy environment in which to live and recreate.

EQAC's priority recommendations this year focus on the need for continuing long-term financial support to sustain these environmental programs.

1. EQAC commends Fairfax County for its support of its ongoing stormwater program, which includes dam maintenance, infrastructure replacement, water resource monitoring and management, watershed restoration and educational stewardship programs. EQAC recommends that Fairfax County continue to adequately fund and implement this ongoing stormwater program. EQAC realizes the funding for the stormwater program will come entirely from funds generated through the Stormwater 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 2014 by a half penny, from a rate of 2.0 cents per \$100 assessed real estate value to 2.5 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.

In order to minimize further environmental damage in water bodies and save future rehabilitation costs, **EQAC also recommends that the county maximize protective measures in the new required storm water regulations.**

2. Secondly, **EQAC recommends that Fairfax County fund a program to serve as follow-on to the Energy Action Fairfax (previously referred to as the Residential Energy Education and Outreach) program that was funded by a grant through the American Recovery and Reinvestment Act of 2009.** 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 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.
3. Lastly, EQAC asks for support for the implementation of the Fairfax County Park Authority's Natural Resource Management Plan. The approval of this plan in 2004 partially fulfilled a long-standing EQAC recommendation; however, most of this plan cannot be implemented without additional staff and funding for the FCPA, and the estimated cost for full implementation would be approximately \$8

million per year and dozens of staff positions. If this was to be pursued through a phased approach, Phase 1 would require \$650,000 and six positions. **Therefore, EQAC recommends that the Board of Supervisors provide sufficient funding to implement Phase 1, and, as the county's budget problems are eased, EQAC further recommends that the Board of Supervisors increase funding with an aim toward supporting the full implementation of the Natural Resource Management Plan. In the meantime, EQAC recommends that some additional staff positions and supporting funding be found from internal FCPA staff assets, to include funding of the two new vacant positions in the Natural Resource Management and Protection Section.**

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 the members of council continue to be impressed with the work and input of these two people. First, we need to mention 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. EQAC cannot thank him enough for his hard work and long hours in our support.

Board of Supervisors  
Continued

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.

In conclusion, EQAC encourages the Board of Supervisors to both support and fund all of the valuable programs designed to protect the county's environment and enhance the quality of life for its residents. We continue to urge you to take a look at how to integrate these excellent programs to maximize your efforts and returns.

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 in the coming years.

Respectfully submitted,

[Signature on original]

Stella M. Koch, Chairman

# TABLE OF CONTENTS—SUMMARY REPORT

<b>SCORECARD: PROGRESS REPORT ON 2011 RECOMMENDATIONS</b>	x
<b>SPOTLIGHT ON FAIRFAX COUNTY PUBLIC SCHOOLS</b>	xxiii
<b>HOW TO REPORT ENVIRONMENTAL CRIMES OR VIOLATIONS</b>	xxvi
<b>I. FAIRFAX COUNTY AND GLOBAL CLIMATE CHANGE</b>	1
<b>II. LAND USE AND TRANSPORTATION</b>	6
<b>III. AIR QUALITY</b>	14
<b>IV. WATER RESOURCES</b>	20
<b>V. SOLID WASTE</b>	35
<b>VI. HAZARDOUS MATERIALS</b>	39
<b>VII. ECOLOGICAL RESOURCES</b>	42
<b>VIII. WILDLIFE MANAGEMENT</b>	55
<b>IX. NOISE, LIGHT POLLUTION AND VISUAL POLLUTION</b>	59

## SCORECARD

### Progress Report on 2011 Recommendations

#### I. CLIMATE CHANGE AND ENERGY

Climate Change and Energy Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. . . the county's efforts to reduce Fairfax County government emissions may be most valuable as a model and to show that GHG emission reductions are feasible. There are often significant savings, especially over time, with changes that reduce GHG emissions. Education programs (including social media) and programs to promote energy efficiency will be very important to the future and funding for these programs will be critical for these programs to succeed. For this reason, EQAC recommends that Fairfax County implement energy and climate change-related projects that are part of the county's Environmental Improvement Program through a dedicated fund supporting EIP projects. Such a fund could be structured similarly to an existing Information Technology fund.</p>	<p>Staff concurs with the recommendation regarding EIP funding; however, the staff response suggests general funds be used in place of setting up a separate fund outside of the general fund. Staff has reviewed the EQAC recommendation, and suggests the following to provide an additional level of rigor to the process.</p> <p>First, a Deputy County Executive will be responsible for the overall EIP project funding and selection process. This process will be under the direction of the County's Environmental Coordinating Committee. The following approach summarizes the proposed evaluation and selection process:</p> <ol style="list-style-type: none"> <li>1. The ECC will charter an interagency steering committee to review and score EIP projects for funding consideration during each fiscal year planning cycle.</li> <li>2. The first task of the steering committee will be to develop the EIP project evaluation and selection scoring template. This template will include criteria that will be carefully selected to score and prioritize projects for funding consideration. Criteria will be shared with EQAC for further review and revision.</li> <li>3. Initial project recommendations will be submitted by county departments as part of the annual budget process.</li> <li>4. Early in the process, agencies will be requested to submit both a business and technical viability analysis for each proposed project.</li> <li>5. Both the business and technical analyses will be reviewed by staff from the Department of Management and Budget and the interagency Steering Committee.</li> <li>6. The business analysis will include such factors as return on investment to include quantified cost savings, cost avoidance, enhanced revenue, non-quantifiable service benefits, staff savings, staffing efficiencies, indicators to measure success, estimated project costs and duration and project risks.</li> <li>7. The technical analysis will include such factors as to determine project concept feasibility from the standpoint of implementation and may include the overall strategy and approach as well as an analysis to determine compatibility and alignment with county board-adopted goals and policies.</li> <li>8. DMB and Steering Committee staff will review the initial submissions and make recommendations for improvement of the proposals.</li> <li>9. The final proposals will be presented in an oral interview setting conducted by Steering Committee and DMB staff, which will score the proposals and make funding recommendations for consideration by the Deputy County Executive.</li> </ol> <p>The ECC is committed to working closely with EQAC to develop and finalize the project selection criteria that will be used in the template to score and prioritize the projects.</p>	<p>EQAC appreciates the efforts of county staff to accommodate this recommendation and will recommend that these projects be funded through the EIP process. EQAC expects continued dialogue on this issue.</p>	Yes

<b>Climate Change and Energy Recommendation</b>	<b>Action taken by Agency or Department</b>	<b>EQAC Comments</b>	<b>Completed</b>
<p>2. EQAC recommends that the Board of Supervisors direct county staff to evaluate alternatives for the county to further reduce greenhouse gas emissions. Step one in this process should be to assess the amount of food and other waste that could be diverted to recycling as opposed to incineration and landfilling. More specifically, composting efforts similar to what is being pursued in the District of Columbia and Arlington County should be considered. For some buildings, soiled paper products, food waste and other materials are being composted in order to increase the amount of material recycled.</p>	<p>The staff of the Fairfax County Solid Waste Management program does not object to this recommendation. Staff notes that a countywide waste sort would be needed in order to address the recommendation.</p>	<p>While the official response from the Department did not provide support for pursuit of this recommendation, discussion with staff resulted in a modification to this recommendation for 2012. EQAC expects continued dialogue on this issue.</p>	<p>No</p>

Climate Change and Energy Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>3. 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 should also promote periodic (e.g., bi-annual) evaluation of the GHG footprints for buildings and facilities. While the county has already taken these steps for Fairfax County government buildings, such actions would also be helpful for residential and commercial sectors.</p>	<p>Staff concurs with the EQAC recommendation. This recommendation will be addressed in a new action item in the fiscal year 2014 Environmental Improvement Program that is scheduled for release in fall 2012.</p> <p>As EQAC is aware, the county is in the early stages of implementing its federally funded residential energy education and outreach program (please see response to Climate Change and Energy #4 for more detail). The EE&amp;O is intended to help Fairfax County residents become more aware of their personal energy consumption and to educate them on how they can reduce usage; staff anticipates that home energy use monitoring will be a component of a broader set of energy efficiency and conservation messages that will be developed for this program.</p> <p>County staff will also develop a companion program for the business community. Staff envisions a similar process to the residential energy education and outreach program, but tailored to encourage businesses to develop energy management plans. These would promote both operational and user conservation and efficiency and make use of existing benchmarking tools such as the Environmental Protection Agency’s Benchmarking with Portfolio Manager or equivalent to track and evaluate facility/building energy usage. While staff does not anticipate that a specific recurrence period would be suggested for benchmarking, staff does anticipate that the business outreach program would have the effect of promoting continued monitoring and benchmarking of energy use (and, by extension, greenhouse gas emissions).</p> <p>County staff is committed to working closely with EQAC as well as business groups and/or associations/chambers to develop and promote the program. As is the case for all EIP actions both past and future, projects will continue to be supported by the General Fund and will be subject to availability of General Fund monies.</p>	<p>The staff response shows that a number of steps will be taken to address this recommendation. While the EQAC is pleased to see that these steps are being taken, we believe additional follow-up will be helpful. EQAC also sees some new activities such as the Tysons Plan as reflecting the goals of this recommendation.</p>	<p>Partial</p>

Climate Change Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>4. EQAC recommends that Fairfax County establish a program to serve as a follow-on to the Residential Energy Education and Outreach program that is being funded by a grant through the American Recovery and Reinvestment Act of 2009. The REE&amp;O program is funded through fall 2012 using grant money, and then lacks funding to continue its operation. The program is seeking to educate county residents on energy conservation and greenhouse gas emission reductions, and would be most beneficial if it continued after the grant money was expended. 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>Staff concurs and notes its interest in continuing the REE&amp;O program. Staff feels that it would appear premature to establish a follow-on program until the REE&amp;O program is completed and its lessons identified and analyzed.</p>	<p>EQAC is pleased with the program developed that responds to this recommendation. The recommendation has been modified to reflect the need to address the future. It is very reasonable to review this initial effort before undertaking another but it is also important to continue the outreach.</p>	<p>Partial</p>

## II. LAND USE AND TRANSPORTATION

Land Use & Transportation Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. . . . EQAC continues to support a comprehensive evaluation of the plan. . . . The new review should cover plan activities between 1995-2011 and assess impacts through 2025.</p> <p>With the renewed focus on revitalization, especially in the mixed-use centers, EQAC recommends that the county formalize and prioritize the focus on these centers. . . .</p>	<p>This year the county published: “State of the Plan, An Evaluation of Comprehensive Plan Activities between 2000-2010”.</p> <p>The county also initiated the Forward Fairfax program to address concerns identified with the Area Plan Review process.</p>	<p>The new State of the Plan is a well-conceived and written document that incorporates GIS models for future analysis.</p> <p>EQAC supports Fairfax Forward and will continue to follow it as an improved and advanced model for future planning.</p>	<p>Yes</p>
<p>2a. EQAC is an advocate of the county GIS and the Integrated Parcel Lifecycle System. We recommend that the county push to have all land use and parcel based data tied into the GIS. This includes data that are more descriptive than quantitative. For example, the Land Development System is not easily used with GIS because it is textual rather than graphical. At a minimum there should be a note in GIS that additional data exist at a geospatial location.</p>	<p>DIT is currently working on several technology initiatives (subject to funding availability &amp; BOS technology project priorities) that will increase accessibility of land use information via the Web.</p> <p>The newest initiative is the Land Development Information data warehouse (that includes GIS spatial capabilities). LDI will consolidate disparate Fairfax County land use data from a variety of land systems. LDI is scheduled for public release this year.</p> <p>...</p> <p>In addition, DPZ staff has created a number of new applications within the past year that establish an interactive capability between LDS and GIS and are publicly accessible on the DPZ website.</p>	<p>EQAC supports the LDI efforts and linking Parcel data to the new applications.</p>	<p>Ongoing and progressing</p>

Land Use & Transportation Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>2b. EQAC recommends that the Comprehensive Plan be modified to better utilize GIS technology. Digital maps are continuously changing with new zoning, land acquisitions and other changes. However the latest adopted Comprehensive Plan changes are not displayed on the map. The plan should be digitally formatted so that approved Comprehensive Plan changes and other appropriate updates can be incorporated in a timely manner. The Comprehensive Plan text volumes should continue to migrate to a digital format based on GIS technology. Plan language can be tagged and referenced by GIS region for access through the digital interface.</p>	<p>Staff began the process of converting the Comprehensive Plan Map from a paper format to a digital format in early 2011 and the new digital Plan Map has been adopted by the Board of Supervisors. The digital Plan Map is now available on the DPZ website. The new format allows changes in the Comprehensive Plan volumes that occur as a result of adopted amendments to be reflected within a short period of time, which will achieve consistency between the Plan text and the Plan Map.</p>	<p>The new maps and process to publish the latest amendments online will make it easier for residents to access information.</p>	<p>Yes</p>

Land Use & Transportation Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>2c. IPLS has made great strides with the housing base, but other systems need to continue to be brought up to date. Continue to improve the plan amendment and plan quantification databases as well as their interface to IPLS. There should be an ability to easily track changes in plan potential, either at a parcel level or within small groupings of regions. New nonresidential pipeline data should be incorporated in IPLS. This would be very useful for forecasting and analyzing with existing data.</p>	<p>This recommendation to improve the plan amendment and plan quantification databases, as well as their interface with IPLS, has been addressed in part. The Planning Division in Department of Planning and Zoning has developed an in-house GIS-based application called Comprehensive Plan Potential Application that captures and quantifies the range of development scenarios at parcel or parcel grouping level based on the Comprehensive Plan Map and the land use recommendations specified in the Plan text. The data captured by this application are regularly updated based on the adopted Plan amendments and are tracked by another GIS based application developed in house called Comprehensive Plan Amendment Tracking Application.</p>	<p>EQAC commends these new applications and more importantly, using them to create the State of the Plan update.</p>	<p>Yes</p>
<p>2d. GIS tools have become essential for county staff. EQAC commends the county for providing public access to many sources and recommends this effort be continued, as appropriate and feasible. This includes the next iteration of My Neighborhood and regular updates of the county digital data holdings.</p>	<p>The components of this recommendation are being addressed. The complete redesign of My Neighborhood is well underway and scheduled for release in 2012. This is a total rework of the application that will enable more flexibility and easier ability to incorporate more functionality related My Neighborhood (e.g., an address research tool).</p> <p>...</p> <p>The key digital data holdings that need specific funding to update include the orthoimagery, oblique imagery and related 3-D data and planimetric data. Fund 104 monies were approved and allocated for FY 2012 that complete payment for the oblique imagery which was reflown and delivered in CY 2011.</p>	<p>EQAC commends the county for keeping its digital inventory current and updating the applications for residents to access information.</p>	<p>Yes and ongoing</p>

### III. AIR QUALITY

There were no recommendations in the 2011 Annual Report

### IV. WATER RESOURCES

Water Resources Recommendation	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 2013 by a penny, from a rate of 1.5 cents per \$100 assessed real estate value to 2.5 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 BOS provided the additional funding of 1/2 penny per \$100 assessed real estate value.</p>	<p>EQAC thanks the county for the additional funding of 1/2 penny per \$100 assessed real estate value to increase the rate to 2 cents per \$100. We will ask for the increase of an additional 1/2 penny this year for fiscal Year 2014.</p>	<p>Partial</p>

## V. SOLID WASTE

There were no recommendations in the 2011 Annual Report

## VI. HAZARDOUS MATERIALS

Hazardous Materials Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. EQAC recommends that the county continue to find ways to help people more easily recycle household hazardous waste. As examples of the need for such efforts, with the increased use of rechargeable batteries and compact fluorescent light bulbs, more households in the county will have these hazardous waste items to dispose of on a regular basis. EQAC commends the county for maintaining scheduled remote hazardous waste collection events in 2010. We urge the county to continue to schedule and publicize at least three to five of these remote events per year in the future.</p>	<p>Three events were held in 2011, serving over 750 households. There were also three remote events in 2012. The first event was held on March 24, 2012 at the South County Government Center. The second event was held on May 5, 2012 at the Mason District Governmental Center. A third event was held in September in the Dranesville District.</p> <p>In addition, the Electric Sunday program conducted eleven events in 2012, eight at the I-66 Transfer Station Complex and three at the I-95 Landfill Complex. During these events fluorescent bulbs are also collected, and the household hazardous waste facility was open to collect other materials. This availability is included in the advertisement.</p> <p>Business hazardous waste events also continued, with three events in 2012.</p>	<p>EQAC commends the county for maintaining scheduled remote hazardous waste collection events in 2011 and 2012.</p>	<p>Yes</p>

## VII. ECOLOGICAL RESOURCES

Ecological Resources Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. FCPA approved a Natural Resource Management Plan in 2004. This partially fulfills a long-standing EQAC recommendation to develop and implement a countywide Natural Resource Management Plan. However, most of this plan cannot be implemented without additional staff and funding for the FCPA. The FCPA staff estimates that implementation will require approx.. \$8 million per year. A more phased approach will allow 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 require \$650,000 and six positions. EQAC strongly feels that the plan needs to be implemented. Therefore, EQAC recommends that the Board of Supervisors provide sufficient funding to implement Phase 1. EQAC recognizes that in today's budget climate, such increased funding may be difficult to achieve. However, once the county's budget problems are eased, EQAC does recommend that the Board of Supervisors provide this funding as a high priority. In the meantime, EQAC recommends that some of the six staff positions and supporting funding should be found from internal FCPA staff assets.</p>	<p>Recurring funding to implement the Natural Resource Management Plan has not been secured, but progress was made in identifying positions within the Park Authority. Three new merit positions were created in 2011 in the Natural Resource Management and Protection Section Branch (converted from limited term positions). Two are being held vacant and can be filled as soon as funding is available as part of the Phase 1 implementation approach. The third position is the IMA Volunteer Coordinator position. In addition, the NRMP Section was reclassified as a Branch and the manager's position was upgraded accordingly in 2011.</p> <p>The Park Authority continues to be successful in obtaining some project specific funding for resource management. In addition to funding for IMA, several other projects have been funded. Also, in 2012 NRMP staff will start a new natural resource restoration project at Ellanor C. Lawrence Park using bond funds.</p> <p>The Park Authority concurs with the recommendation to fund and implement the Natural Resource Management Plan, but at this time cannot realign additional staff from other important existing programs and services to the natural resource management program.</p> <p>Current estimates are that fully implementing the Natural Resource Management Plan will require about \$8 million and dozens of staff position annually. This includes approximately \$3.5 million to focus on general natural resource management and \$4.5 million for a non-native invasive plant control program.</p>	<p>EQAC commends FPCA on creating three new NRMP positions; however, not filling two of these (due to inadequate funding) does not satisfy EQAC's recommendation. EQAC also commends FCPA on obtaining specific funding for projects; however, such year-by-year funding is not a substitute for recurring, budgeted funding.</p> <p>FCPA still has an imbalance between resources for its two functions – ecological protection and active recreation. These resources need to be brought closer to being balanced. Therefore, EQAC continues to recommend that additional staff and funding for the Natural Resource Management Plan be found from existing resources.</p> <p>EQAC also recommends the Board of Supervisors provide additional funding to FCPA to expand implementation of the Natural Resource Management Plan.</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 are both cost-effective and efficient in reducing excesses in the deer herd and deer vehicle collisions.	Due to staffing limitations resulting from the restrictions on the county budget, fewer managed hunts have been conducted than in some prior years. However, those held have been successful in terms of the number of deer taken.	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 program should be continued as it is both cost-effective and efficient in reducing excesses in the deer herd and deer vehicle collisions.	Due to staffing limitations resulting from the restrictions on the county budget, somewhat fewer sharpshooter events have been conducted than in some prior years. However, those held have been successful in terms of the number of deer taken.	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 archery program should be continued on Park properties where firearms cannot be used, and is an effective tool in reducing the deer herd and deer vehicle collisions.	The use of archery to address the needs of residents to control deer depredation of their home sites has received increased emphasis and considerable work has been done with homeowners to aid them in utilizing these methods.	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**

<b>Geese Management Recommendations</b>	<b>Action taken by Agency or Department</b>	<b>EQAC Comments</b>	<b>Completed</b>
<p>1. EQAC strongly recommends that geese management 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>Due to staffing limitations resulting from the restrictions on the county budget, fewer direct goose management activities have been conducted than in some prior years. However, much of the available staff time has been applied to public outreach and training activities so that the momentum of the program can be maintained.</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>

lxx.

**VIII-3. COYOTES IN FAIRFAX COUNTY**

There were no recommendations in the 2011 Annual Report

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

There were no recommendations in the 2011 Annual Report

## IX-1. NOISE

Noise Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. 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 access to the website be simplified.</p>	<p>Staff requested that MWAA post reports on a quarterly basis. MWAA plans to do so.</p> <p>Staff requested that MWAA simplify access to the website, but MWAA feels that other information should have priority, and is not convinced that the noise report should be given a prominent place on the homepage.</p>	<p>Pleased with progress and looking forward to seeing MWAA follow through with quarterly reports.</p> <p>EQAC feels that access via a search from the website is sufficient.</p>	<p>Process has begun but is not yet completed.</p> <p>Yes</p>

## IX-2. LIGHT POLLUTION

There were no recommendations in the 2011 Annual Report

## IX-3. VISUAL POLLUTION AND URBAN BLIGHT

There were no recommendations in the 2011 Annual Report



## **Spotlight on Fairfax County Public Schools**

Fairfax County Public Schools is the largest school district in Virginia (the 11th largest in U.S.) and has an enrollment of over 180,000 students for the 2012-13 school year. Over 14% of Virginia's students are enrolled in FCPS.

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

- High Performance and Sustainable Schools
- Get2Green Environmental Education and Action

**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>) as its standard for sustainable design.

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 operation; assessment tools for new construction, major modernizations and relocatable classrooms; and recognition programs.

FCPS' use of CHPS is relatively new and data are not yet available on overall district-wide compliance with CHPS. However, FCPS staff has noted several examples of addressing components of CHPS, including the use of Solatubes for providing interior classrooms with natural light, and TerraCycling for increased recycling of previously non-recyclable or hard-to-recycle wastes.

Historically managing energy has been about providing comfort and lighting in our classrooms and offices while containing costs. The need to control greenhouse gas emissions and other air pollutants resulting from energy use has become increasingly important as our understanding of climate change and its potential ramifications has advanced.

The FCPS Energy Management Section monitors energy and water consumption for 245 buildings. Nearly all schools and offices have digital energy management control systems that are programmed to turn off heating and air conditioning systems at night, on weekends and on holidays.

U.S. EPA Energy Star data are automatically uploaded and scores are determined for 194 schools each month. Forty seven schools have received the EPA Energy Star certification and the Energy Star plaque is displayed in the school lobby. FCPS continues to increase the number of certified schools as building efficiency improves.

As part of an energy performance contract done between 2003 and 2006, FCPS invested over \$21 million in 107 buildings that received upgraded lighting, windows and heating, ventilation and air conditioning systems.

Infrastructure replacement projects where systems and building components are beyond the ends of their useful lives are designed and selected to conserve energy. Examples are: boiler and chiller and other HVAC system replacements that are selected to be high efficiency units; energy management control systems that are modernized and re-commissioned; roofs that are replaced with reflective materials to reduce heat loads; lighting systems that are upgraded, and older windows that are replaced with high quality double pane windows.

The Office of Facility Management Energy Management Section prepares an annual greenhouse gas inventory for all of FCPS.

**Get2Green Environmental Education and Action** – FCPS Get2Green (see <http://www.fcps.edu/is/science/get2green/>) is a set of internal and external partnerships and resources aimed at producing a cadre of environmental stewards as mandated by School Achievement Goal 3.

Get2Green will promote environmental education and environmental action across disciplines K-12 through three main foci:

- Professional development of teachers.
- Technical support for schools that wish to participate in a project or become an Eco-school.
- Building relationships around environmental stewardship that will help pyramids and clusters develop successful, student driven programs.

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. NWF has had FCPS use its Reston facilities to house the Kid's Inquiry Conference and for several other events, as well as keeping FCPS connected with other school districts across the country that are performing similar projects.

To date, FCPS has approximately 45 schools that are in some stage of the Eco-School process, and another 60 schools that are asking for technical assistance to get involved. Additional

metrics include schoolyard habitats (45 schools); edible gardens (33 schools); staff training (1,600); and Blackboard Get2Green Community (200).

Get2Green includes a wide variety of internal FCPS departments that work together to assist schools in their “greening” efforts and a group of Going Green Principals that meets regularly. 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 related to communication both internally and externally and staff development.

Get2Green in Fairfax County is part of a regional and national movement to make schools healthier environments for students and staff. There is a Mid-Atlantic Elementary and Secondary Environmental Literacy Strategy that was just released and the Virginia Resource Use Education Council is developing a policy on environmental education. Further, Virginia is one of 38 states participating in the US Department of Education’s Green Ribbon Schools program.

Recycling efforts have been underway at Fairfax County schools for several years. A new contract was negotiated with Potomac Disposal Services to include a consultant to assist schools in setting up recycling efforts in 2011. The consultant visited over 120 schools during the 2011-2012 school year to advise them on recycling improvements. In addition, Get2Green, is encouraging student teams to upgrade recycling efforts at all schools. Many schools have been recycling white paper for several years. There are some high schools like George C. Marshall HS that have relationships with outside vendors that buy white paper and cans collected at the school and they are continuing that practice in addition to recycling other items.

With the new Fairfax County move to single stream recycling, student teams are being encouraged to single stream recycle from their cafeterias and classrooms. In the cafeterias, some schools such as Westbriar ES and Centreville ES are upcycling (collecting and sending materials such as juice pouches and chip bags to organizations such as TerraCycle for payment back to the school). Other schools are involved in composting cafeteria food waste. Recently, Food and Nutrition Services worked with school administrators to develop a letter of agreement to be used if a school wants to donate unopened food to an area food pantry. Dranesville ES and Churchill Road ES are leading the way with this, with other schools such as Louise Archer ES investigating the feasibility of doing this within their communities.

Some schools elect to run special recycling programs for batteries, printer cartridges, electronics, etc. if there is an adult staff member or PTA representative or student group that can administer the program. For example, Thomas Jefferson High School for Science and Technology and Centreville ES have been doing this for several years.

In conjunction with FCPS Recycling, Langley High School ran a program to recycle on the playing fields during the spring 2012 sports season. The program will be expanded for the fall football season with the hopes that other high schools will follow Langley’s lead. Langley funded this effort through grants from Clean Fairfax and a FCPS Schoolyard Stewardship Mini Grant.

<b><u>HOW TO REPORT ENVIRONMENTAL CRIMES OR VIOLATIONS IN FAIRFAX COUNTY</u></b>	
<b>Type of Incident</b>	<b><u>Phone Number</u></b>
<p><b><u>RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT</u></b>            To report the dumping of any materials into a stream, manhole, storm sewer or onto the ground, call 9-1-1. When calling, be prepared to provide specific information about the location of the incident. County inspectors will investigate complaints within the county; Cities of Fairfax and Falls Church; and the Towns of Clifton, Herndon and Vienna.</p>	<p><b>911</b>  <b>TTY 711</b></p>
<p><b><u>LAND CLEARING; TREE REMOVAL; DUMPING OF FILL</u></b>            To report the suspected illegal removal of trees, clearing of land, digging or dumping of fill dirt, call the Department of Code Compliance.</p>	<p><b>703-324-1300</b>  <b>TTY 711</b></p>
<p><b><u>SOIL EROSION</u></b> To report soil erosion from private properties or construction sites, call the Department of Code Compliance.</p>	<p><b>703-324-1300</b>  <b>TTY 711</b></p>
<p><b><u>GENERATION OF DUST FROM CONSTRUCTION, GRADING OR LAND CLEARING</u></b>            Call the Department of Code Compliance.</p>	<p><b>703-324-1300</b>  <b>TTY 711</b></p>
<p><b><u>CONSTRUCTION NOISE</u></b>            To report construction noise outside between 9 p.m. and 7 a.m. or before 9 a.m. on Sundays and federal holidays, call the Department of Code Compliance.</p>	<p><b>703-324-1300</b>  <b>TTY 711</b></p>
<p><b><u>TRASH COLLECTION BETWEEN 9:00 P.M. AND 6:00 A.M.</u></b>            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><b>703-324-5230</b>  <b>TTY 711</b></p>
<p><b><u>SIGNS ON ROADS AND MEDIANS</u></b>            If a sign on a road or median poses a safety hazard, call the Virginia Department of Transportation to have it removed.</p>	<p><b>1-800-367-7623</b>  <b><u>TTY 711</u></b></p>

<b>Type of Incident</b>	<b><u>Phone Number</u></b>
<p><b><u>SIGNS ON PRIVATE PROPERTY</u></b>                      There are restrictions for signs on private property. For more information contact the Department of Code Compliance.</p>	<p><b><u>703-324-1300</u></b>  <b><u>TTY 711</u></b></p>
<p><b><u>POORLY MAINTAINED HOMES</u></b> To report problems including broken windows and gutters, junk or debris in yards and tall, uncut grass, call the Department of Code Compliance.</p>	<p><b>703-324-1300</b>  <b>TTY 711</b></p>
<p><b><u>OUTDOOR LIGHTING CONCERNS</u></b>                      To report problems with glare, overlighting or other issues, call the Department of Code Compliance.</p>	<p><b>703-324-1300</b>  <b>TTY 711</b></p>
<p><b><u>AIR POLLUTANTS</u></b>                      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><b>703-583-3800</b>  <b>After hours, call 1-800-468-8892</b>  <b>TTY 711</b></p>
<p><b><u>NO RECYCLING IN SCHOOLS</u></b>                      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:  <a href="http://www.fcps.edu/fts/facmanagement/recycle.shtml">http://www.fcps.edu/fts/facmanagement/recycle.shtml</a></p>	<p><b>703-764-2459</b>  <b>TTY 711</b></p>
<p><b><u>HEALTH HAZARDS</u></b>                      To report a suspected environmental hazard that may pose a public health risk, call the Health Department’s Community Health and Safety Section. These hazards include unsanitary storage or disposal of waste, including garbage and human and animal feces; unburied dead animals; medical waste; and mosquito infestations. County inspectors will investigate complaints within the county; Cities of Fairfax and Falls Church; and the Towns of Clifton, Herndon and Vienna.</p>	<p><b>703-246-2300</b>  <b>TTY 711</b></p>



# I. Climate Change and Energy

## Background

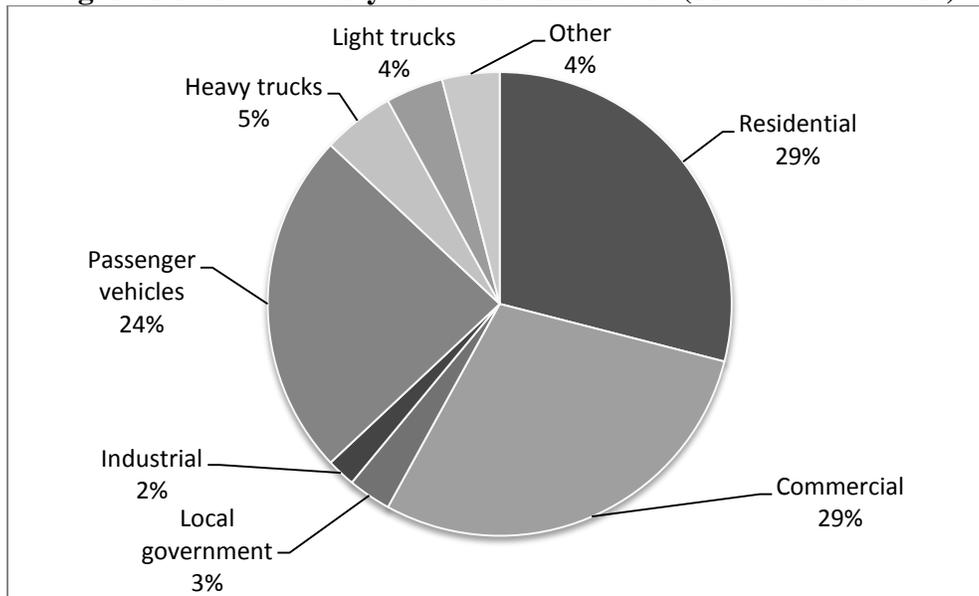
This chapter outlines work that is under way in Fairfax County to reduce greenhouse gas emissions and improve energy efficiency.

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<sub>2</sub>e)<sup>1</sup>**



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 government 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).

### **Regional Coordination**

#### **Climate, Energy and Environment Policy Committee**

The county is well-recognized for its participation in regional environmental and energy initiatives. One such initiative is the Climate, Energy and Environment Policy Committee. The CEEPC was created in 2009 by the Metropolitan Washington Council of Government's Board of Directors to provide leadership on climate change, energy, green building, alternative fuels, solid waste and recycling issues and to help support area governments as they work together to meet the goals outlined in the *National Capital Region Climate Change Report*.

Northern Virginia Regional Park Authority

Three Northern Virginia counties (Fairfax, Loudoun and Arlington) and three cities (Alexandria, Fairfax and Falls Church) participate in the Northern Virginia Regional Park Authority. The NVRPA is also undertaking similar efforts to reduce GHG emissions and improve energy efficiency.

**Waste Management and Energy Efficiency**

Waste-to-Energy

The county's Energy/Resource Recovery Facility recovers methane, controls nitrous oxide and generates about 80 megawatts of electricity from solid waste – enough energy to power about 75,000 homes and the facility itself.

Landfill Gas Recovery and Utilization

There are both closed and open portions of the I-95 Landfill, with the open portion collecting ash generated by the Energy/Resource Recovery Facility. The county collects landfill gas generated by the closed portion of the I-95 Landfill (which collected solid waste) and the closed I-66 Landfill as a substitute for fossil fuel to heat on-site buildings. It has installed a system to use landfill gas from the closed I-66 Landfill as a fuel source to heat vehicle maintenance facilities at its West Ox campus, at an initial project cost of approximately \$300,000. With annual natural gas savings of between \$40,000 and \$50,000, the estimated payback for the West Ox LFG project is less than eight years. More information is available at <http://www.fairfaxcounty.gov/dpwes/trash/dispomsf.htm>.

**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.

### **Recommendations**

1. EQAC is very encouraged to hear that a process has been established through which the funding of education programs (including social media) and programs to promote energy efficiency through the county's Environmental Improvement Program can be considered. EQAC recognizes that a broader range of EIP projects may be proposed in any given year and that any education and energy efficiency proposals will compete against these other proposals for limited funds; however, EQAC stresses the need for the prioritization process to ensure that strong education and energy efficiency proposals will be successful. Further, while EQAC appreciates all the efforts that have been made, EQAC recognizes that both the County Executive must recommend funding projects recommended by county staff and that the Board of Supervisors must approve the funding. EQAC recommends that the County Executive and the Board of Supervisors support and fund those projects that are recommended by staff.
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. In order to support the expansion of recycling, the following steps are recommended:
  - a. Education and outreach on options for increasing recycling, including the composting of compostable material.
  - b. Cooperating with other governments in the region to build capacity and enhance affordability for recycling and composting of waste. This work should include quantifying the various waste streams.
  - c. Gaining experience in expanding recycling streams. For example, modest composting efforts similar to what is being pursued in the District of Columbia and Arlington County that are helping to provide experience in expanding recycling programs and waste composting should be undertaken.
3. 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 should 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.

4. EQAC recommends that Fairfax County fund a program to serve as follow-on to the Energy Action Fairfax (previously referred to as the Residential Energy Education and Outreach) program that was funded by a grant through the American Recovery and Reinvestment Act of 2009. 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.

### **References**

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

## II. Land Use and Transportation

### Background

EQAC has been an advocate for the integration of land use and transportation as an important tool to enhance environmental quality. This year, several long term recommendations have been completed that will allow for better integration of these aspects in future planning. Foremost of these is the Fairfax Forward initiative to modernize the planning process. As part of Fairfax Forward, the county has completed a retrospective analysis of the Comprehensive Plan. The county also adopted a new version of the Comprehensive Plan Map and the Concept Map for Future Development as well as a process to keep those maps continuously updated as changes are made to the Plan.

These changes are an extraordinary accomplishment for 2012. As in recent years, economic challenges continue to require the county to prioritize which land use and transportation planning projects are the most important to its missions. By establishing a retrospective record and modernizing the planning process, the county can move forward with confidence that the county goals are being addressed.

Over the past several years, the county has been executing a dual planning process. One track has been maintaining the Area Plan Reviews. This has been a cyclical process to consider site specific changes to the Comprehensive Plan across the county. The second track has been focused on special studies that take a comprehensive approach to specific areas, such as Tysons Corner or the suburban areas. As the county approaches buildout, the latter approach is more appropriate for the revitalization of existing areas. Special studies provide a thorough analysis of multiple factors that allow the Plan to change without impacting our quality of life. Fairfax Forward is designed to modernize the entire process and allow many factors to be considered holistically for planning changes for the future.

In May, 2012 the county issued a new 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 6.3% 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. But as we grow, 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.

At the same time, 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.

During 2012, much progress was made on transportation mega-projects, including the Dulles Rail, I-495 Express Lanes and I-95 High Occupancy Toll lane expansion. These projects are visible to anyone who moves about the county. The impact they will have on transportation is still to be seen, but they have potential to transform how large numbers of people move about the county.

The I-495 Express Lanes will open in late 2012, followed by future I-95 HOT lanes within and to the south of the county. The unique aspect of these projects is congestion demand pricing to control the amount of congestion on the new lanes. There is also potential for transit options using the HOT lanes, which move more people per vehicle and can run on a predictable schedule due to the congestion management.

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.

### **Recent Activities**

The summary below provides a brief recap of some of the county's recent land use and transportation activities, followed by opportunities for participatory environmental stewardship and concluding with EQAC's comments and recommendations.

### **Dulles Rail Project**

The Dulles Corridor Metrorail Project has completed three years of construction along the extension between I-66 at the Dulles Connector Road and Wiehle Avenue in Reston. Approximately 72% of the construction activity is complete, with major work efforts on the alignment along the entire line, tunnel construction along Route 123 between International Drive and Route 7 in Tysons Corner and at all five stations. Phase 1's estimated completion cost is \$2.905 billion, which is \$150 million over the project budget of \$2.755 billion. Passenger service will begin in late 2013 or early 2014.

### **The Beltway Express Lanes Project**

This project is constructing 14 miles of new HOT lanes (two in each direction) on I-495 between the Springfield Interchange and just north of the Dulles Toll Road. These HOT lanes will allow the Beltway to offer high-occupancy vehicle (HOV-3) connections with I-95/395, I-66 and the Dulles Toll Road. When completed, buses, motorcycles and carpools and vanpools with three or more people can ride in the new lanes for free. Vehicles carrying two people can either travel for free in the regular lanes or pay a toll to ride in the HOT lanes. Tolls for the HOT lanes will change according to traffic conditions, which will regulate demand for the lanes and keep them congestion free. The project has an estimated completion date of late 2012.

### **The 95 Express Lanes Project**

The Virginia Department of Transportation is partnering with Fluor-Transurban to develop a new 95 Express Lanes project that will run from Garrisonville Road in Stafford County to Edsall Road in Fairfax County. This project will create approximately 29 miles of Express Lanes. As a separate project, plans are also being advanced to construct a direct ramp from the existing HOV lanes on I-395 to Seminary Road which will connect the Mark Center site to this expanded regional transit and HOV network. The ramp will be restricted to transit and HOV use only.

### **Tysons Corner Urban Center**

By 2050, the 2,100 acre Tysons Corner 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. There are financial and economic costs and benefits associated with the redevelopment of Tysons; there are also non-monetary benefits such as cleaner air, better water quality, sustained economic vitality and improved quality of life that will result from the implementation of the vision for Tysons. To achieve this vision, it will be necessary to implement several strategies that will reduce resource use and dependency, decrease detrimental environmental impacts and enhance the environment. Effective land use and transportation policies create the basic foundation for the sustainable Tysons, and redevelopment efforts within Tysons will provide opportunities to build upon this foundation.

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. Innovative energy efficiency and conservation strategies are being incorporated into all redevelopment projects. Tysons also 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.

### **Tysons Partnership**

The Office of Community Revitalization worked with stakeholders in Tysons to form the Tysons Partnership. The Tysons Partnership is dedicated to achieve the successful redevelopment of Tysons Corner into a pedestrian-oriented and economically vibrant urban place. The Tysons Partnership is a membership organization representing employers, landlords and developers, retail and hospitality representatives and resident organizations; it also has non-voting participation from the county, professionals and neighbor organizations. The partnership is organized into six councils that address: Marketing and Branding; Transportation; Public Facilities and Community Amenities; Urban Design and Planning; Finance; and Sustainability Initiatives. Since its incorporation in 2011, the Tysons Partnership has continued to focus efforts on transportation (circulator, grid of streets), transportation infrastructure financing, urban design and the provision of public facilities.

### **Tysons Corner Urban Design Guidelines**

In January 2012, the BOS endorsed the [Tysons Corner Urban Design Guidelines](#) that provide area wide recommendations to transition Tysons from an auto-oriented suburban location into a cohesive, functional, pedestrian-oriented and memorable urban destination. Grounded in the Comprehensive Plan's core principles, the guidelines address the pedestrian realm, building and site design and interim conditions to define distinct identities and characteristics for the various neighborhoods within Tysons. The guidelines have been used successfully by each of the 15 pending applications within Tysons to inform the siting, building design and master planning of each project.

### **Merrifield Suburban Center**

The Merrifield Suburban center is just starting to emerge as a vibrant transit-oriented place in the county--the changes in Merrifield have created a new destination. The area boasts a new urban-scale Target store (the nation's first with a fourth floor) that is surrounded by a new arts-focused movie theatre, bubbling fountains and retail shops. New residences adjacent to the Metro are already at 80% occupancy, and new restaurants and shopping venues are opening.

The transition from a sleepy intersection to a transit oriented center has, however, been a long journey. After several uncoordinated amendments were passed in the 1990s, a visioning workshop was convened on June 10, 1998, followed by a formal task force that created the Merrifield Concept of Future Development. Over the next 14 years, this vision was doubted and debated, but over time it gained momentum and has persevered. Merrifield, like all suburban areas, has unique challenges and, in this particular case, significant advantages, including:

- A Metrorail station that serves as the as the infrastructure foundation for the area. The value of a Metro stop cannot be overstated as an anchor for a new suburban area.
- Close proximity to the Beltway and U.S. Route 50 to augment the transit anchor.
- A committed district and Supervisor (actually two Supervisor champions over the 14 years) with commitment to the long term vision.

- Large property tracts that are the basis for large scale projects. Other areas face fragmented land ownership that requires additional cooperation.

These challenges and advantages have combined to create a transformed place with new residents and amenities. The lessons of Merrifield should be captured to help repeat this success across the rest of the county.

### **Green Buildings**

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 designing all new construction projects to meet at least LEED Silver certification. As of October 2012, the county had a total of 29 green building projects, 14 of which attained certification (12 under the LEED program and two under the Green Globes program). The other 15 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 four complete projects exceeding the design spec and awarded Gold certification. This confirms that green buildings can be affordably constructed with long term savings. We hope that the county will further its leadership with some projects striving for Platinum certification.

### **Comments and Ongoing Concerns**

#### 1. Progress on Major and Mega Projects

The county continues to see progress on mega projects. These include the 495 Express Lanes and Beltway widening, the Dulles Corridor Rail Project, and BRAC. EQAC has made recommendation 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.

#### 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. Next year, EQAC plans to conduct a deeper analysis of transit and alternative transportation options.

### 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:

- Continue to expand options for affordable housing by investing and partnering appropriately in locations that will need increased affordable options as the economy rebounds.
- 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.
- Coordinate with agencies and businesses to inform prospective/new workers of opportunities for desirable commutes and local housing amenities.

### 4. Comprehensive Data Holdings and Models.

EQAC has advocated for public access to GIS tools and commends the county for providing public access to many sources; EQAC recommends that this effort be continued as appropriate and feasible. We look forward to the next iteration of My Neighborhood and Virtual Fairfax. In addition, EQAC commends the county for continuing to update the ortho imagery, oblique imagery and planimetric data. These have proven useful for many applications and are on a practical refresh cycle.

While the base data have been carefully maintained, EQAC is still concerned about macro changes to the county and with the tools available to analyze macro effects and to model future scenarios. Some particular capabilities to consider:

- Model the effect of a Comprehensive Plan or zoning change against a larger region, in particular stormwater impact and transportation congestion.
- Forecast future growth and align planned developments with economic viability and housing options.
- Develop a deeper understanding of mixed-use development that combines residential and non-residential uses in the same parcel. This is becoming common in the new revitalization projects and we expect that other major urban counties and cities have developed technology and processes for incorporating mixed-use developments into their comprehensive plans.

## **Recommendations**

### 1. Comprehensive Planning

Background:

The Fairfax County Comprehensive Plan is a fundamental document for Fairfax County that has been continuously updated as the county has grown and transitioned from a rural/suburban county to a mixed-use urbanizing community. There have been two comprehensive plan reviews, first the “*State of The Plan, An Evaluation of Comprehensive Plan Activities between 1990-1995 with an Assessment of Impacts through 2010*” (published in 1996) and more recently the “*State of the Plan, An Evaluation of Comprehensive Plan Activities between 2000-2010*” (published in 2012). These important documents explain the changes happening over the past 37 years and how the county has responded to the changes and expanded our potential to continue growing into the future.

In particular the summary and conclusions of the latest report bear repeating:

*“Taken as a whole, amendments to the Area Plans volumes of the Comprehensive Plan may be grouped into a few themes. Most prominent among these are the following:*

- *Encouragement of intensity and land use flexibility in mixed use centers;*
- *Protection of low density residential neighborhoods; and*
- *Retention of industrial areas.*

...

*Future planning challenges are likely to continue to become more complex. The Comprehensive Plan will need to balance new development and redevelopment with maintaining and improving the quality of life for all residents. In terms of the environment, improving the quality of life will include implementation of countywide stormwater management plans and recommendations. In terms of the economy, continued efforts to increase the supply of housing in activity centers are needed to improve the jobs/housing balance. Lastly, in terms of the community, challenges include continuing to extend the county’s system of trails, parks and recreational facilities.”*

EQAC endorses the conclusions of the evaluation. 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 to update the model used to plan future development.

Recommendation:

EQAC recommends that the county prioritize the Fairfax Forward work plan. EQAC also recommends that the county establish a stakeholder task force to work with the Fairfax Forward team to build familiarity and support for the new approach.

EQAC also recommends that the county continue to refine and formalize 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.

This formalization should include incorporating GIS technology directly into the planning process and expanding the use of modeling to help understand future conditions and scenarios.

## 2. 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 the county push to have all land use and parcel based data tied into the GIS. We are looking forward to the proposed Land Development Information data warehouse to continue integrating information through GIS.
- 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.

IPLS has made great strides with the housing base, but other systems need to continue to be brought up to date. New nonresidential pipeline data should be incorporated in IPLS. This would be very useful for forecasting and analyzing with existing data. We understand this may require changes to the Land Development System.

## **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. The air quality planning functions will continue to be done on a limited basis by staff from the Health Department's Division of Environmental Health. On July 1, 2010, the Virginia Department of Environmental Quality assumed full responsibility for air quality monitoring in Fairfax County.

#### **Air Quality Monitoring Stations**

During 2010, EQAC, along with several other parties, had many discussions with DEQ on the ramifications of shutting down air quality monitoring stations for which Fairfax County could no longer provide funding. EQAC examined a report provided by the State Advisory Board on Air Pollution, called "Evaluation of Virginia's Air Monitoring Network; November 30, 2009." The Metropolitan Washington area, which includes Fairfax County as well as other parts of northern Virginia, such as Arlington County and Alexandria, portions of Maryland and the District of Columbia, had a total of 13 air monitoring sites, which exceeds the U.S. Environmental Protection Agency's minimum requirement for the region.

In April 2010, EQAC submitted a recommendation to the Board of Supervisors that the board provide comments to DEQ regarding its annual air monitoring network review. Specifically, EQAC recommended that the board request that DEQ include one or more of the four existing Fairfax County monitors in its future monitoring plans. Given the historically higher level of ozone concentrations at the Mount Vernon station, as compared to other county-run stations, EQAC recommended that the board request that DEQ include the Mount Vernon station in the regional monitoring plans. At that time, similar requests were made by Representative Gerry Connolly (to EPA) and the Air and Climate Public Advisory Committee (to DEQ). The board referred this issue to its Legislative Committee, which discussed the matter in September 2010; EQAC's recommendation was not provided to DEQ.

## 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<sub>2.5</sub>, 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.

**Nitrogen Dioxide:** On January 22, 2010, EPA strengthened the health-based NAAQS for NO<sub>2</sub> to a new one-hour NO<sub>2</sub> standard of 0.10 ppm. The standard also requires monitoring that occurs near roads, community-wide NO<sub>2</sub> concentrations and low income or minority at-risk communities. This level will protect people against adverse health effects associated with short-term exposure to NO<sub>2</sub>, including respiratory effects. It became effective on April 12, 2010. EPA also retained the annual average NO<sub>2</sub> standard of 0.053 ppm.

**Sulfur dioxide:** On June 2, 2010, EPA strengthened the primary NAAQS for SO<sub>2</sub> by establishing a new one-hour standard of 0.075 ppm. The new standard is the three-year average of the 99th percentile of the annual distribution of daily maximum one-hour average concentrations.

## **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).

EPA designated the metropolitan Washington region as moderate nonattainment for the eight-hour ozone standard of 0.08 ppm in April 2004. Air quality data from 2007-2011 suggest compliance with the 0.08 ppm eight-hour ozone standard in the Northern Virginia area. EPA published a determination that the area attained the 1997 eight-hour standard on February 28, 2012. However, the area will remain designated as a nonattainment area until a redesignation request and maintenance plan for the 1997 eight-hour standard is submitted to EPA and EPA approves the request for redesignation.

However, EPA has not concluded that the region meets this standard, and, as noted above, the standard itself has been, and may further be, strengthened. Monitors in the metropolitan region recorded data on 21 days during the 2011 ozone season, and 19 days during the 2012 season, when ozone values exceeded 0.075 ppm. This was a substantial increase from the 2009 season, when the region registered just four days with violations of the eight-hour standard (Note – for comparisons with prior year EQAC reports, these data are in relation to the 2008 NAAQS standard of 0.075 ppm). Various studies have shown that, during certain meteorological episodes, pollution from outside the area can cause ozone exceedances in the Washington metropolitan area. Further information about ozone measurements is provided in the long version of this report, available on the EQAC website.

#### Additional Monitors for NO<sub>2</sub> and Other Pollutants

Virginia DEQ provided an update on the status and plans for conducting monitoring for NO<sub>2</sub> in Fairfax County, noting that the agency is working to install a new NO<sub>2</sub> monitor, to be used to assess compliance with the roadside monitoring aspect of the revised NAAQS for NO<sub>2</sub>. There are plans to install three new NO<sub>2</sub> monitors in Virginia, based on information about the average annual daily traffic count. For northern Virginia, DEQ is considering placement of the monitor on property of the Virginia Department of Transportation in the area near the Springfield I-95/I-395/I-495 interchange. Current plans call for the monitor to become operational by January 2013.

DEQ may also install additional roadside monitors for carbon monoxide and PM<sub>2.5</sub>, depending on what is included in EPA's revised NAAQS for those pollutants. These projected changes to the air monitoring network in northern Virginia will be included in the Annual Monitoring Network Plan, which is sent by DEQ to EPA by July 1 of each year. This report contains information on the air monitoring network, including projected changes for that calendar year. This report is posted on DEQ's air quality Web page each year to receive public comment on all aspects of the network plan. DEQ also posts an Annual Monitoring Data Report on the Web page, which contains the monitored results for the previous calendar year.

#### 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. There are several proposed changes to the inspection and maintenance program in northern Virginia that will occur in 2013 and later. 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. Other anticipated changes to the program involve testing equipment, 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.

### Alternatives to Use of Motor Vehicles

VDOT is actively seeking to address transportation modes that can be used as alternatives to motorized vehicles, such as addressing increased use of bicycling and public transit. Efforts to make these alternative modes 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.

VDOT dedicates two percent of its road paving funds to bicycle and pedestrian facility additions and improvements. In collaboration with county staff and partnering organizations, several initiatives have been implemented affecting bicyclists and pedestrians. These are noted in the long version of this report, available on the EQAC website.

### 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](http://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.

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 and perform annual county survey to assess progress toward SIP commitments; 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 encourages county residents and others to take voluntary actions to improve air quality.
3. EQAC supports the efforts of 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 of VDOT to dedicate two percent of its road paving funds to bicycle and pedestrian facility additions and improvements, and to collaborate with county staff and partnering organizations to implement initiatives that support bicyclists and pedestrians. For example, this funding supported additional bike lanes on a segment of Sully Park Drive in Centreville; new bicycle detector markings in the Soapstone bike lanes at the South Lakes Drive intersection; shared lane markings (sharrows) on a segment of Westmoreland Street in McLean; and installation of BIKES MAY USE FULL LANE signs.

### **Recommendation**

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.

### **Recent Activities**

#### **Environmental Improvement Program**

- The Environmental Agenda (Environmental Excellence for Fairfax County: 20-Year Vision) adopted by the Board of Supervisors in 2004 continues to have significant impacts on water quality protection and environmental stewardship efforts in the county. In 2006, in response to the Board of Supervisors' directive for follow up action on the agenda, the county's interagency Environmental Coordinating Committee initiated its annual preparation of an Environmental Improvement Plan. The EIP addresses environmental and policy needs and assists county officials in making decisions regarding environmental funding and project planning. The EIP supports environmental initiatives and objectives identified in the Environmental Agenda. The ECC anticipates updating the EIP annually prior to the development of the county budget to provide sufficient time for funding decisions. Additionally, the plan will report on progress made and additional needs. Information on the EIP projects and plans may be found on-line at <http://www.fairfaxcounty.gov/living/environment/eip/>.

#### **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 2011 Fairfax Stormwater Status Report [http://www.fairfaxcounty.gov/dpwes/publications/stormwater/2011\\_stormwater\\_status\\_report.pdf](http://www.fairfaxcounty.gov/dpwes/publications/stormwater/2011_stormwater_status_report.pdf).

- Fairfax County’s Stream Protection Strategy program assesses the ecological conditions of randomly selected streams in the county. In addition, the potential human health risk associated with wading or swimming in streams is assessed based on analyses of *E. coli* bacteria. Results from the 40 randomly selected sites suggest that approximately 67 percent of the county’s waterways are in “Fair” to “Very Poor” condition based on a decrease in biological integrity of streams and 47% are in “Fair” to “Very Poor” based on fish sampling in 15 streams. The 2011 Stream Quality Index shows an increase in overall stream quality from 2010. This index will be reported annually to evaluate long-term trends in the overall health of streams. Over the past eight years of sampling, a very small increase in the SQI has emerged. As more data are reported annually, emerging trends can be identified with greater certainty.
- As part of the county’s National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System permit (known as the “MS4 permit”), water quality is monitored at selected storm sewer outfalls four times per year (seasonally). Outfalls are monitored during dry weather to determine the presence of illicit discharges. In 2011, the county selected 101 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 48 of the outfalls and was tested for a range of pollutants (ammonia, conductivity, surfactants, fluoride, pH, potassium, phenol, copper and chlorine) using field test kits. Of the outfalls tested, 15 required follow-up investigations because they exceeded the allowable limit for at least one pollutant.

#### 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 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 developed. Although innovative stormwater management practices are being explored and applied throughout the county, construction of regional ponds continues to be an option used by the county to retrofit areas needing stormwater controls.

#### 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. This 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.
- 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.

- VDEQ is currently developing bacteria TMDLs for the Sugarland, Mine and Pimmit Run watersheds (note: Mine Run, which is included in the area subject to Fairfax County’s Nichols Run and Pond Branch Watershed Management Plan, is located in the Great Falls area). The TMDLs were scheduled to have been finalized in early 2012. There were no TMDLs completed in 2011.
- EPA established the Accotink Creek benthic TMDL in April 2011. 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 calls for a 48.4% overall reduction in instream flows in Accotink Creek. The county is currently contesting this designation of a flow TMDL with EPA and is requesting a sediment TMDL be issued instead.

- 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).
- Pope's Head Creek.
- Difficult Run.
- Hunting Creek (includes Cameron Run and Holmes Run).

Sediment (Benthic Impairment):

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

Polychlorinated biphenyls--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.state.va.us/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments/2012305b303dIntegratedReport.aspx>

Stormwater Management Facilities and Infrastructure

- Fairfax County maintains more than 1,400 stormwater management facilities (as of 2001), 1,500 miles of pipe and 45,000 drainage structures designed to protect the county's streams.
- In 2011, the Maintenance and Stormwater Management Division of the Department of Public Works and Environmental Services inspected 1,156 of the 1,465 county-maintained stormwater management and BMP facilities at least once. MSMD inspected 616 of the 3,611 privately-maintained facilities in 2011.
- During 2011, the county cleaned and/or mowed 1,259 dam embankments, including 52 regional ponds which 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 2,259 work orders, including: un-blocking SWM 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 citizen complaints. The agency saw a significant increase in the number of complaint-driven work orders due to the effects of Tropical Storm Lee.

- The 2011 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.

#### Erosion and Sediment Control

- In March 2008, the Virginia Department of Conservation and Recreation approved the county's program, finding it to be "fully consistent with the requirements of the Virginia Erosion and Sediment Control Law and Regulations."
- In 2011, a total of 758 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 2011, 27,849 E&S inspections were performed through the county's Alternative Inspection Program on all sites under construction. Those E&S inspections represent 57.4 percent of the 48,496 total site inspections that were performed by Site Development and Inspection Division personnel. The site inspections total also included 2,198 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 2011 SDID wrote 905 "2030" 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 86 violations in 2011 and 76 of those were later cleared. The remaining ten violations are extended until the required corrections are made or court action is initiated. SDID held 198 escrows for either landscaping or stabilization issues.
- The Land Disturbance and Post Occupancy Branch of LDS investigated 184 complaints alleging violations of Fairfax County's Erosion and Sediment Control Ordinance (Chapter 104). The branch also investigated 46 complaints alleging violations of the county's Chesapeake Bay Preservation Ordinance (Chapter 118). Of the total complaints, 180 were instances where there was either no violation or there was timely compliance if a violation was cited. The other 50 complaint investigations led to the branch undertaking criminal proceedings to ensure compliance, with some proceedings resulting in fines issued by the court.

#### Illicit Discharges

- In 2011, HMIS received 585 complaints. Approximately 326 of the complaints involved the actual release of various petroleum or chemical substances. Of the 326 releases, 232 involved the release of either diesel fuel (27), home heating fuel oil (80), gasoline (33), motor oil (37), or hydraulic oil (55). Other releases investigated involved antifreeze, paint, sewage,

wastewater discharges, water treatment chemicals and mercury. Storm drains were involved in 58 of the releases.

#### On-site Sewage Disposal Systems

- The Health Department mailed 14,921 flow diversion valve reminder notices in 2011. The notices are sent to homeowners on the anniversary of the installation of their septic systems to remind them to turn their flow diversion valves once a year. It reminds them to pump out their septic tank every three to five years.
- In 2011, 1,831 non-compliance letters were mailed to owners of homes that have not pumped out their septic tank during the five-year period required in Chapter 68.1 of the Fairfax County Code and the Chesapeake Bay Preservation Area Designation and Management Regulations. If a homeowner fails to comply, a follow-up letter is mailed informing him/her that action will be taken under the regulations to insure their septic tank is pumped out as required.
- There were 54 new alternative onsite sewage systems approved in 2011, bringing the total number of alternative systems in Fairfax County to 678. It is required that each of these systems is inspected annually by a licensed operator and a report be filed with the Health Department. Regulations for these systems went into effect on December 7, 2011. The Health Department plans to send notices to all owners of these systems in 2012 which will outline the requirements resulting from these regulations.

#### Sanitary Sewer System Maintenance

- In 2011, 198.25 miles of old sewer lines and 7.84 miles of new sewer lines were inspected, resulting in the identification of sanitary sewer lines and manholes needing repair and rehabilitation. In 2011, 30.83 miles (162,763 feet) of sanitary sewer lines were rehabilitated, bringing the total length of sewer lines repaired over the past ten years to 211.15 miles (1,114,868 feet).
- In 2011, 429 miles of sewer were pressure cleaned, 81 miles were mechanically cleaned using rodders, and 504 miles were visually inspected. The work orders are planned and managed using a Web-based asset management system.

#### 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 55,704 billion gallons of drinking water in 2011.
- 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 2011 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 90<sup>th</sup> percentile value for lead was 0.77 part per billion compared to the EPA action level of 15 ppb. For copper, the 90<sup>th</sup> 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](http://www.fairfaxwater.org).
- Work is under way by more than 20 local governments and the Northern Virginia Regional Commission on the first Northern Virginia Regional Water Supply Plan project. The Northern Virginia Regional Water Supply Plan will include information on water sources, water use, water resource conditions, projected water demand, water management actions and an analysis of alternatives, drought and contingency plans in the event of water deficits. The plan, expected to be completed this by end of 2012, will include water supply projections for the next 30 years. See preliminary document <http://www.novaregion.org/index.aspx?NID=1214>.
- There are approximately 14,000 single family residences and businesses in Fairfax County that are served by individual well water supplies. In 2011, there were 135 new well approvals, 42 well repairs and 117 Water Well Abandonments issued. There were 49 Geothermal Well Permits issued, which was over 50% of the total number of 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/intro.htm>) 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](http://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)**

The new regulations (addressing the administration and specifics of stormwater management requirements for land disturbing activities, including local government reviews and inspections for Virginia Stormwater Management Program general permits relating to stormwater runoff from construction sites) were approved by the Virginia Soil and Water Conservation Board on May 24, 2011. The county has 15 to 21 months following the effective date of the state

regulations to adopt a stormwater management program that is consistent with the provisions of the new regulations.

Some of the key changes include:

- New water quality criteria that target a post-construction annual phosphorus load of 0.41 lbs/ac/yr for new development.
- Redevelopment projects disturbing one acre or more with no increase in impervious cover must reduce pre-development phosphorus loads by 20%. Redevelopment projects disturbing less than one acre with no increase in impervious cover must reduce pre-development phosphorus loads by 10%. The new development criteria (0.41 lbs/ac/yr) will apply to all new impervious area on a redevelopment site.
- Quantity controls focus on erosion and protection of existing drainage systems and receiving stream channels. The technical criteria are similar to existing county adequate outfall criteria in that they define the limits of analysis (extent of review) and an improvement factor (proportional improvement) for analysis. For certain sites, the county's current adequate outfall criteria will be more stringent.
- The new regulations establish a process for offsite compliance that allows nutrient trading in lieu of onsite controls.

Fairfax County is preparing a Stormwater Management Ordinance in response to these state regulations; the regulations require that this program be effective July 1, 2014.

Many processes, systems, ordinance changes and training of staff and industry, in addition to a written stormwater management ordinance, will need to occur in order for the county to be ready for the effective date. A series of meetings with stakeholders is being held to gather information that will be used in developing the new county ordinance and design and construction standards for stormwater control practices.

The following issue areas have been discussed during small stakeholder group meetings that were held by DPWES in September and October 2012:

- Single-Family Home Exemptions: The Virginia Code allows an exemption for single-family dwellings disturbing between 2,500 SF and one acre.
- Impacts of Infill Development: Concerns were expressed at an earlier stakeholder meeting that infill development can have cumulative impacts on a watershed or localized impacts on surrounding properties.
- Adequate Outfall and Detention Requirements: New detention provisions in the state regulations eliminate the need for a downstream adequacy review and are less stringent than requirements in the current County Public Facilities Manual. The Virginia Code allows Fairfax County to establish a more stringent standard.

- Impacts on Pro Rata Share Program: Participants at the earlier stakeholder meeting asked how the use of the new Runoff Reduction Method would affect pro-rata share calculations, since the methodology addresses water quantity through infiltrating runoff into the soil.
- Stormwater Facilities in Residential Areas: The new state regulations favor implementation of smaller facilities on individual lots. In general, current county practice is to require facilities to be placed on out-lots. However, the new requirements will create a greater number of smaller, distributed facilities, which may create issues and impact lot yield.
- Restrictions on Use of Stormwater Facilities: The Virginia Code and BMP Clearinghouse list the types of stormwater facilities that may be used to meet requirements. Several state-approved facilities are different than what is in the current county PFM, or there is no equivalent. The county may restrict the use of certain facilities with written justification.
- Stormwater Facility Inspections by Owners: The Virginia Code requires “submission of inspection and maintenance reports” to the county by private stormwater facility operators. Current practice is for the county to perform a compliance inspection every five years.
- Nutrient Credit Offset Provisions: The Virginia Code requires the county to allow nutrient offset credits under certain circumstances. The county has the discretion to allow offsets under other circumstances.

Additional issues may be submitted to the county by visiting the following website:

[www.fairfaxcounty.gov/dpwes/stormwaterordinance.htm](http://www.fairfaxcounty.gov/dpwes/stormwaterordinance.htm).

### **Issues of Note**

- Fairfax County streams and watersheds continue to be impacted by several problems, including uncontrolled stormwater runoff, erosion, high levels of bacteria and sedimentation. Progress has been made with modifications to the Policy Plan section of the county’s Comprehensive Plan; watershed and stream protection, however, need to be maximized in land use planning and site design decisions. The cumulative effects of land use decisions on Fairfax County’s streams still need to be effectively considered.
- Stormwater runoff and erosion continue to have the greatest detrimental impacts on Fairfax County streams. Most Fairfax County streams have increased runoff flows that exceed the capacities of their original stream channels. This has created an ongoing erosion cycle that includes eroding stream banks, heavy sediment loads and sediment-smothered stream bottoms. Streams can become damaged by the changes brought about by changes in stream hydrology and increased flow during the pre-development clearing phase. The stream sees an overall increased flow due to the increased runoff caused by the clearing. This is not just the increase in peak flow, but the increase in the total volume of the water entering the stream. These increased flows start the cycle of damage, and once the stream is damaged it may take years or decades for the stream banks to revegetate and restabilize. This has resulted in erosion problems throughout the county that impact trail systems, homeowners’

back yards, parks, utilities and infrastructure. Sediment on stream bottoms results in reduced habitat and diversity, which compromises the stream ecology and food chains.

- Sediment also compromises the quality of, and increases the expense of, treating surface drinking water supplies. Poor land use planning, inadequate enforcement of erosion and sediment control laws and inadequate stormwater management have contributed significantly to erosion problems and impaired water quality in the past. Prevention of such damage would not only be good for the environment but would also be cost effective. Strict monitoring and enforcement of adequate stormwater management and erosion and sediment controls prior to construction can help prevent damage from erosion and sediment.
- In addition to problems created in streams, runoff and erosion have resulted in numerous ponds and lakes having enormous sediment deposition. Stormwater management ponds are designed to protect downstream water quality. Ponds also provide additional amenities including recreation (boating, fishing), aesthetics and wildlife habitat. Depending on the size of the surrounding drainage area, the land uses in that area and the volume of runoff, a pond can fill up with sediment, trash and organic debris in a relatively short period of time. Although dredging is a necessary management component to remove accumulated materials and help protect water quality downstream, private pond owners are experiencing increasing difficulty conducting dredging operations given the significant expense and lack of local, adequate disposal areas.
- A total of 41 water bodies with a total of 92 impairments in Fairfax County are included in 2008 Virginia's 305(b)/303(d) Water Quality Assessment Integrated Report (the listing of impaired waters). The most common causes of impairment for riverine segments are bacteria (*Escherichia coli* or fecal coliform), impacts to benthic macroinvertebrates and polychlorinated biphenyls in fish tissue. For the estuarine water bodies, the most common causes of impairment are PCBs in fish tissue and bacteria. The causes of impairment in the Occoquan Reservoir are dissolved oxygen and PCBs in fish tissue. Water Quality Assessments are performed by the Virginia Department of Environmental Quality and are available at:  
<http://www.deq.state.va.us/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments/2012305b303dIntegratedReport.aspx>.
- Sustainability of existing onsite sewage disposal systems and areas of marginal or highly variable soil remain concerns for future failing septic systems. Areas of the county with marginal or highly variable soils that were once deemed unbuildable in the past are now being considered for development utilizing alternative onsite sewage disposal technology. The final phase and release of a technical report and recommendations concerning the creation of management for alternative facilities was completed in early FY 2010. The Health Department has been reviewing the report as to its applicability to legislation approved by the Virginia General Assembly in 2009 and 2010. The legislation specifically required the State Health Department to adopt *Emergency Regulations for Alternative Onsite Sewage Systems* that establish performance requirements, maintenance requirements and reduced vertical soil setbacks distances to restrictions for all Alternative Onsite Sewage Systems. The emergency regulations were adopted on April 7, 2010. These regulations are

substantially different from the recommendations of American Water/Applied Water Management (the contractor that prepared the aforementioned technical report). On December 7, 2011, the Regulations for Alternative Onsite Sewage Systems (Alternative Regulations) were adopted. These “permanent” regulations are similar to the Emergency Regulations with a few major changes based on feedback from engineers, soil consultants, operators, system owners and regulators.

- Much credit needs to be given to Fairfax County for its comprehensive watershed management efforts, including stream restoration and protection, adequate monitoring of water resources and adding new tools such as low impact development and other innovative practices to its stormwater management program. All of these efforts indicate a significant change in county policy and practice towards the protection and restoration of county streams. However, as long as the rate of stream degradation surpasses stream protection and restoration efforts in Fairfax County, the trend will continue to be a downward one.

### **Ongoing Concerns**

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 predevelopment stormwater management controls and for enforcement action to ensure inadequate controls are corrected prior to construction and, if necessary, during construction. It is also important that the county hire the appropriate number of staff to handle the estimated inspection workload.
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 recent 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 understands that a comprehensive countywide program to monitor effectiveness can

be cost-prohibitive, data are still needed, as it is still unclear as to which structures and requirements are effective and working well.

5. EQAC continues to encourage Fairfax County (the Board of Supervisors, the Planning Commission, the Board of Zoning Appeals, the Fairfax County Park Authority and various county agencies) to coordinate efforts and develop a protocol for assessing the impacts and cumulative effects of land use considerations and decisions on the county's water resources. EQAC urges these groups to use and disseminate information to protect the county's watersheds. EQAC commends the Board of Supervisors for adopting Residential Development Criteria that include supporting the provision of adequate outfall drainage and innovative water quality measures.
6. As sedimentation of stormwater management and other ponds from upstream bank erosion continues, the need to dredge these impoundments becomes more frequent. Owners are having difficulty conducting necessary dredging operations given rising expenses and lack of local, adequate disposal areas. EQAC commends the county for establishing an interagency work group that explored options, such as creating spoil disposal/recycling areas in various parts of the county to assist private facility owners and help protect water quality. EQAC commends the Stormwater personnel for their continued pursuit of viable solutions to this problem.
7. 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.
8. 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 on uranium mining 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.

### **Comment**

1. EQAC commends the Board of Supervisors for its actions of the past few years authorizing one penny of the real estate tax to be dedicated to the stormwater management program. The amount increased from the original amount of \$17.9 million for FY 2006 to \$22.8 million for FY 2009. 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.

While various maintenance repairs were implemented in FY 2010, the Board of Supervisor's adoption of the FY 2011 stormwater tax district rate of 1.5 cents has allowed the

Maintenance and Stormwater Management Division to increase stormwater management infrastructure replacement, create a more comprehensive low impact development maintenance program, and rehabilitate a number of older stormwater management dams and other critical components. Much of the stormwater infrastructure in Fairfax County is reaching the end of its useful life, 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. In addition, it is critical for MSMD to implement cost effective solutions such as trenchless pipe replacement technologies, naturalizing stormwater management facilities and partnering with other county agencies such as Fairfax County Public Schools and the Park Authority to create efficiencies.

The county's existing stormwater conveyance infrastructure includes about 1,500 miles of pipes and paved channels, in addition to over 850 miles of perennial streams and unknown miles of non-perennial streams. The majority of the stormwater control facilities and pipes were constructed 35 years or more ago. Prior to the board providing a dedicated penny to stormwater in FY 06, 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 5% of the system was identified as being in a state of failure and another 10% in need of rehabilitation. With the recently adopted stormwater service rate, it is estimated that the reinvestment cycle for stormwater infrastructure has been reduced from well over 1,000 years to around 200 years.

In addition to the conveyance system, the county owns and maintains roughly 1,300 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. In addition to providing required inspection and maintenance of these facilities, the county must provide significant upgrades to the emergency spillways on one more of its PL-566 dam structures to comply with current state dam safety requirements. The remaining spillway upgrade is scheduled to be constructed as part of the FY 12 stormwater budget. In addition, it is estimated that the sediment accumulating in the five county-maintained PL-566 flood control lakes have a combined annual removal cost of between \$750,000 and \$1,100,000, which is in addition to removal of the silt that has already accumulated. The current program will begin to restore capacity in these lakes as well as the other stormwater management facilities, and 32,000 cubic yards of sediment were removed from Lake Barton in 2011 as part of this program.

In addition to supporting infrastructure reinvestment, the capital program funds critical capital projects from the watershed management plans including: flood mitigations; stormwater management pond retrofits; implementation of low impact development techniques; and stream restorations. 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 current 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 loads to the Chesapeake Bay.

The county must meet the federally mandated requirements of its Municipal Separate Storm Sewer System 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 is 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/year. One approach to achieve these challenging requirements could be a phased approach 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.

### **Recommendations**

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 2014 by a half penny, from a rate of 2.0 cents per \$100 assessed real estate value to 2.5 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.

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; the program must be effective on July 1, 2014. As the ordinance is developed, EQAC will provide more specific comments. **However, EQAC recommends that this new Stormwater Management Ordinance maximize stream protection and curtail exceptions and waivers that might have an adverse impact on the environment.**

## **V. Solid Waste**

### **Background**

The Fairfax County Solid Waste Management Program continues to effectively manage 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. Also highlighted are efforts of Clean Fairfax Council.

### **Recent activities**

#### **Waste Reduction and Recycling Programs**

- Fairfax County's Solid Waste Management Program has maintained county recycling at 47 percent. As it has for many years now, Fairfax County's recycling rate far exceeds the Virginia minimum requirement of 25 percent. Since the recycling program's inception in 1988, the county has recycled over eight million tons and continues to exceed the state-mandated requirement.
- By 2012, the distribution of rolling carts for recycling was completed to all of the county's 44,000 residential refuse and recycling collection customers. These containers allow residents to recycle cans and bottles and paper and cardboard in the same container that can be rolled to the curb.
- Fairfax County operates eight Recycling Drop-Off Centers at various locations throughout the county. These are unmanned facilities, open 24 hours, and there is no fee to use them. No new centers have been added to the county system in approximately 11 years, but the existing facilities are used frequently by residents, and about 4,000 tons of recyclables are collected annually in the drop-off centers.
- All county agencies receiving refuse collection and recycling services from the Solid Waste Management Program participate in the county recycling program. In FY2012, county agency locations recycled approximately 1000 tons of material.
- Fairfax County offers residents the opportunity to shred personal documents. Shredding events are held outdoors in parking lots, one in each of the county's 10 magisterial districts. In CY 2011, 10 document shredding events were held and approximately 35,000 tons of personal documents were shredded.
- In FY 2012, the Solid Waste Management Program continued its *Electric Sunday* program whereby, on one Sunday each month, residents can bring their e-wastes for recycling to the I-66 transfer complex or the I-95 Landfill complex. In CY 2011, over one million pounds of obsolete electronics, including televisions, were collected for recycling from Fairfax County residents.

- Recycling requirements for various land uses are discussed in the longer version of this chapter available on CD or through EQAC's website at [www.fairfaxcounty.gov/eqac](http://www.fairfaxcounty.gov/eqac).

#### Compact Fluorescent Lights and E-Wastes

- CFLs and other fluorescent lamps can be recycled at 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. Advertising for *Electric Sunday* events includes information about the opportunity to recycle fluorescent lamps at the same time. CFL collection for Fairfax County residents and employees is also available in the program's office location at 12000 Government Center Parkway, Suite 458.

#### Energy/Resource Recovery Facility

- Operations at the E/RRF continue to meet or exceed accepted industry standards.
- The county has guaranteed to provide, and the E/RRF has agreed to process, at least 930,750 tons of municipal solid waste per year. The E/RRF processed 1,039,000 tons of waste in FY2012, a one percent increase from FY2011. The county bypassed 12,900 tons of waste to a municipal solid waste landfill due to scheduled maintenance at the facility. Approximately 30 percent of waste processed by the E/RRF was from neighboring jurisdictions, including Prince William and Loudoun Counties, and the District of Columbia.

#### I-95 Landfill Complex and Recycling and Disposal Center

- Enhanced bioremediation is specified for two areas where groundwater quality has not improved. Enhanced bioremediation involves the injection of a food-grade Hydrogen Releasing Compound (HRC), similar to molasses, into the groundwater in these areas. The injection process was completed in June 2011.
- The I-95 Landfill operates one of the largest landfill gas collection systems in Virginia, with over 350 installed wells extracting landfill gas for energy recovery. Approximately 2,500 cubic feet per minute of this gas is distributed to a variety of energy recovery systems, including the six-megawatt Michigan Cogeneration 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 Pollution Control Plant. The landfill gas pipeline project continues to provide significant energy cost savings at the NMCPCP.
- The ash landfill has four phases. Phases I and II have reached capacity and an intermediate cover has been placed. Approximately 1,000 tons of ash is placed daily in the ash landfill. Approximately 6,000 tons of shredded tires were used as a protective layer during the construction of Phase II of the ash landfill. Using this material not only recycled the tires, but also saved approximately \$86,000 in the cost of gravel and other aggregate materials. Construction of Phase IIIA of the ash landfill was completed during March 2008. Phase IIIA has capacity for ash for approximately five years, and Phase IIIB is currently under construction.

- 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 and cardboard and cans and bottles is free to residents and businesses.

#### I-66 Transfer Station & Recycling and Disposal Center

- The I-66 Transfer Station continues to handle approximately 70 percent of the county's municipal solid waste destined for disposal.
- The Transfer Station complex also has one of the county's two Recycling and Disposal Centers where residents and small businesses self-haul their waste and recyclables. The facility has undergone significant modernization to accommodate growing local demands for recycling and disposal services. New scales and booths, improved entrance and egress, and newer technology have been installed to improve customer service and increase capacity.

#### Fairfax County's Solid Waste Management Program: Other Items of Note

- The county vehicle fleet, including the transfer trucks at the Transfer Station, now uses ultra-low-sulfur diesel fuel and exhaust after-treatment systems. These changes reduce air pollutant emissions as much as possible, while performing the mission of transporting waste
- In FY 2012, a project was completed where landfill gas lines were extended to a nearby bus garage owned by the Washington Metropolitan Area Transit Authority and a repair shop related to the Transfer Station. The landfill gas is also used to heat the new Operations Center at the Transfer Station which was completed in November 2011.
- The contract waste disposal fee, offered to companies that sign agreements with the county was \$53.00 per ton in FY2012 and has been maintained at \$53.00 per ton in FY2013. The base solid waste disposal fee also remains at its FY2010 rate of \$60.00 per ton.
- The Solid Waste Management Program conducts numerous outreach efforts. See the longer version of the Solid Waste chapter, available on CD and on EQAC's website at [www.fairfaxcounty.gov/eqac](http://www.fairfaxcounty.gov/eqac).

#### 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. The council is currently working toward a less paper-intensive outreach program including e-newsletters, an environmental blog and updated website, educational videos, interactive programs for students, community service opportunities for students (i.e., support at the council's office), classroom presentations and presentations to homeowner associations and other groups.

- There are many other programs offered by the Clean Fairfax, including programs that are beyond litter prevention/control aspects. For more information, please visit the website at [www.cleanfairfax.org](http://www.cleanfairfax.org).

#### Alice Ferguson Foundation

- In April 2012, the foundation held its 24<sup>th</sup> annual Potomac River Watershed Cleanup. About 14,616 volunteers removed 262 tons trash and debris from the region at 660 of cleanup sites throughout Washington, D.C., Maryland, Virginia, and Pennsylvania. The 262 tons of trash collected during the cleanup included 1,566 tires, 185,350 plastic bottles, 31,456 plastic bags and 37,607 cigarette butts.
- 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](http://www.fergusonfoundation.org).

#### **Stewardship**

There are numerous opportunities for residents, employers and employees in Fairfax County to participate in waste reduction and recycling activities; many of these opportunities are outlined in the longer version of the Solid Waste chapter, available on CD and on EQAC's website at [www.fairfaxcounty.gov/eqac](http://www.fairfaxcounty.gov/eqac).

#### **Issues of note and recommendations**

None.

## **VI. Hazardous Materials**

Fairfax County hazardous materials issues have not changed much in the last few years, although a disturbing trend continues, in that an increasing workload and increasing risk are being addressed with decreasing resources. Doing more with less is a desirable quality for all government and commercial organizations, but this essential public safety capability is being stretched to the point of concern over its ability to support the increasing workload. 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 585 complaints involving hazardous materials in 2011, compared with 782 in 2010, 735 in 2009, 418 in 2008 and 317 in 2007. The number of actual releases of hazardous materials was 331 in 2011, 335 in 2010, 303 in 2009 and 330 in 2008.
- 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 duties of the LEPC Coordinator were reassigned to the alternative placement Lieutenant assigned to the Hazardous Materials Technical Support Branch. The long-term impact for the loss of the LEPC Coordinator will come in 2012, when the alternative placement Lieutenant retires. As noted in the “comment” section below, the Environmental Hazards Investigation Section has provided valuable services that 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.
- Monthly events are held for discarding of older model televisions, as well as computer monitors, peripherals and other electronics to help keep lead and other metals from entering the Energy/Resource Recovery Facility. They are conducted at the I-66 Transfer Station complex or the I-95 Landfill complex.
- The monthly e-waste collection events described above have been advertised to emphasize the county's household hazardous waste program, which is open at the same time of the e-waste collection events. Participation in the e-waste collection events has resulted in collecting increased amounts of fluorescent lamps for recycling.
- The Fairfax Joint Local Emergency Planning Committee produced a new version of the annual Hazardous Materials Emergency Response Plan on April 14, 2011. This activity is a great example of maximizing scarce resources by teaming with city resources and conducting joint planning and training.
- The program that conducted remote household hazardous waste collection events, to encourage more participation and to supplement the permanent sites, has been considered for elimination due to budget restrictions in the recent past, but the county found resources to sustain three household and three business events per year. EQAC commends the county for maintaining this program in 2012 and urges the county to continue to schedule and publicize four or more of these events per year in the future. The permanent sites remain available three or four days a week.
- Fairfax County is actively planning for long-term recovery processes subsequent to a major natural or man-made disaster; natural resources are a consideration in these planning efforts. In January 2012, the Board of Supervisors endorsed a Fairfax County Pre-Disaster Recovery Plan. This plan was tested through a table-top exercise in February 2012. Approximately 85 people participated in this exercise; participants included representatives of county agencies, local nonprofit organizations and the Virginia Department of Emergency Management. Information about the PDRP is available at <http://www.fairfaxcounty.gov/oem/pdrp/>.

### **Stewardship**

- What are considered to be hazardous wastes have changed in recent decades. Formerly, hazardous wastes were primarily associated with industrial releases or transportation of chemicals. Hazardous wastes 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 florescent 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**

- On December 19, 2007, the Energy Independence and Security Act of 2007 was signed. Among other things, this will begin the phase out of the incandescent light bulb from the U.S. market in 2012. Although this is not new legislation, its impact is beginning to result in an increase of household hazardous waste; this will increase significantly in the next few years.

### **Comment**

1. FY 2010 budget reductions eliminated the Environmental Hazards Investigation Section of the Fairfax County Department of Health, which has provided valuable services by responding to complaints about mold, radon, asbestos and indoor air quality and in assisting the Fire and Rescue Department with responses to hazardous materials incidents. EQAC feels that, in the future, when budgetary conditions allow, these functions should be restored. Until these functions are restored, these services will need to be provided by private contractors.

### **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.

As of January 2011, Fairfax County contains a total of about 228,017 acres, excluding areas in roads, water or small areas of land unable to be zoned or developed. Of this total, about 32,861 acres (14.4 percent) are in parks and recreation. Another approximately 15,870 acres (7.0 percent) are vacant or in natural uses. This compares to the about 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 7.0 percent as of January 2011.

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.

Recent actions 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 Fairfax County Park Authority approved the Natural Resource Management Plan for park properties. If this plan is

implemented, improved preservation and protection of environmentally sensitive land should be the result.

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 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.

### **Recent activities**

#### Fairfax County Park Authority

- Between June 2011 and May 2012, the Park Authority has added 300 acres to its parkland inventory.
- FCPA's invasive plant control projects occur at over 56 park sites throughout the county. 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 non-profit organization, continues to be a highlight of invasive plant control efforts at both the Marie Butler Leven Preserve and Wilburdale Park. In addition, in 2011, Earth Sangha donated 768 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 sixth year of the Management Area program was completed in 2011. The program has 40 active sites and in calendar year 2011, 1,016 volunteers donated 3,001 hours of work in support of habitat restoration at IMA sites.
- In 2011, IMA had its most successful Volunteer Fest Day to date with 480 total hours, 253 volunteers and over 115 bags of invasive plant debris removed. Additional information on 2011 IMA accomplishments can be viewed at: <http://www.fairfaxcounty.gov/parks/resources/IMA/IMA-annualrpt.htm>.
- Two stream restoration projects were completed on parkland in 2011: The Schneider Branch and Flatlick Branch stream stabilization projects, both in Cub Run Stream Valley Park, each address approximately 1,000 linear feet of stream. Construction began in winter 2010 and was completed in summer 2011. Restoration plantings for the projects were completed in fall 2011. Funding for the projects was supplied by the Department of Public Works and Environmental Services.

- The Spring Hill RECenter parking lot was expanded. Construction was completed in September 2011 and included the addition of 150 parking spaces, installation of LED lighting throughout the new and existing parking areas and redevelopment of the existing storm water detention pond to current standards. Two large underground storm water management facilities were added to increase the overall storage capacity for the site. Pervious pavers, a bio-retention basin, a vegetated swale and one tree box were incorporated into the design to improve water quality for the existing and proposed parking lot expansion. The Park Authority worked with the Department of Public Works and Environmental Services, Stormwater Planning Division to develop the low-impact development features in order to improve the water quality at the headwaters of Bull Neck Run.

#### Northern Virginia Regional Park Authority

- The Northern Virginia Regional Park Authority owns and operates 25 regional parks and owns 11,156 acres of land throughout the region. It also holds conservation easements on 115 parcels covering more than 652 acres. NVRPA's recent acquisition activities in Fairfax County include: coordinating with Northern Virginia Conservation Trust to place a conservation easement on the Webb Sanctuary in Clifton and working to acquire the Webb Sanctuary from the Audubon Naturalist Society; negotiating the acquisition of five acres fronting on the Potomac River Gorge in Great Falls; and preparing to acquire 1.5 acres on Mason Neck near Pohick Bay Regional Park.
- NVRPA installed a "grass crete" parking surface for the first time at Meadowlark Botanical Gardens. This is a permeable, hard surface underlayment that sits just below the mowed grass, allowing storm drainage and surface flow to percolate normally into the soil horizons. Initial use of the surface is very promising, and this technique is expected to be used in other regional park development projects.
- Working in partnership with the local mountain biking club, MORE (Mid-Atlantic Off Road Enthusiasts), NVRPA completed enhancements to its eight-mile long mountain bike trail at Fountainhead Regional Park. There was significant erosion and trail widening in many locations as a result of unsustainable alignments, steep grades, poor flow, overuse and riders going off the trail to find less challenging routes. In order for the Fountainhead mountain bike trail to maintain value as a recreational trail system, it became imperative to address design flaws and ongoing erosion. Trails were redesigned and constructed using the International Mountain Bicycling Association sustainable trail building standards.
- Pohick Bay Regional Park Golf Course on Mason Neck gained recertification as an Audubon Cooperative Sanctuary with Audubon International, with a case study on water conservation and irrigation audit after its irrigation system replacement. The golf course also was designated by the Groundwater Foundation as a Groundwater Guardian Green Site. Pohick Bay is the first golf course in Virginia to achieve this designation and one of only 140 in the country.
- NVRPA partnered with Dominion Virginia Power for its "Trail Mix" program, a series of outdoor community events along the Washington & Old Dominion Trail that highlight environmental stewardship and healthy living. The event featured the largest community

service project in the trail's history, which included invasive plant removal along the trail within Fairfax, Loudoun and Arlington Counties, and culminated with a festival that encompassed themes of active lifestyles, recreation, family, the environment and the community. Other invasive plant control efforts occurred at Occoquan Regional Park, where Eagle Scouts helped to remove invasive growth, and Bull Run Shooting Center, where staff has been working on grapevine and honeysuckle removal in areas around the facility. At Meadowlark Botanical Gardens, most invasive removal takes place in the Potomac Valley Collection forest, which is the oldest and most biologically diverse forest at the park.

#### Fairfax ReLeaf

- Fairfax ReLeaf is a non-profit (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 5,065 trees in calendar year 2011. Nearly 1,000 volunteers spent over 3,400 hours planting tree seedlings, removing invasive species and maintaining planting sites. Highlights of Fairfax ReLeaf's 2011 plantings were: 1,510 trees were planted in parks, including private, county, and national parks; 1,054 trees were planted on school grounds; and over 700 trees were planted in riparian areas.
- Fairfax ReLeaf provided many opportunities for community groups to serve Fairfax County in 2011. These included seven school groups, four Eagle Scout projects and a Boy Scout event. ReLeaf led five corporate workdays, where employees from workplaces such as Level Three, Winchester Homes and AMEC 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. From the time NVCT accepted its first easement in 1999 through June 2012, NVCT has preserved approximately 700 acres of open space in Fairfax County through easements, fee simple ownership and partnerships. A major project started in FY 2008 and completed this year was the transfer to the Fairfax County Park Authority of over seven acres owned by NVCT in the Providence District for use as a public park. NVCT helped the Park Authority by acquiring a Land and Water Conservation Fund grant for \$125,000. NVCT continued work on numerous other projects, including protection of the historic Oakton Trolley Station. NVCT is on the cusp of recording an easement on the 20-acre Webb Sanctuary in Clifton.

#### Northern Virginia Soil and Water Conservation District

- The Kingstowne Stream Restoration Project, Phase II, was completed in early 2011. The \$1.2 million project restored 2,500 feet of a badly eroded stream in the southeastern part of Fairfax County. The natural channel design created a gentle meander to successfully carry the volume and energy of the stream flow. The formerly unsafe and deep vertical stream banks have been replaced with gentle slopes and well-vegetated riparian areas. Backyards are no longer threatened by the action of eroding stream banks. Already, the riparian and

aquatic habitats are teeming with new life. The residential community has an attractive amenity to view and enjoy and the project ultimately helps to protect the wetland downstream in Huntley Meadows Park.

- The Fairfax County Chesapeake Bay Preservation Ordinance and Agricultural and Forestal District Ordinance require land in agricultural use to have a soil and water quality conservation plan. In 2011, soil and water quality conservation plans were prepared for 26 parcels on 443 acres. These included 10,665 linear feet of Resource Protection Area, primarily stream buffers, of which 2,250 linear feet were new vegetated buffers and 8,405 linear feet were re-planted buffers. All plans allow landowners to comply with the county's Chesapeake Bay Preservation Ordinance. Three of the plans were required for the renewal of Agricultural and Forestal Districts in the county. In 2011, 70 participants attended two horse management seminars that were sponsored by NVSWCD. The seminars covered pasture planning and horse waste management.
- The Northern Virginia Soil and Water Conservation District's annual seedling program emphasizes the role of vegetation in preventing erosion, conserving energy and decreasing and filtering stormwater runoff. In spring 2012, a variety of 7,600 native seedlings were sold at a small cost to promote urban reforestation, habitat enhancement and water quality protection. There were 405 packages with species of shrubs and small trees, and 245 packages of tree seedlings.
- NVSWCD provided technical assistance to the county's Code Enforcement Division and four landowners by preparing plans for properties cited for County Code violations. Technical assistance included three stabilization plans for restoring sites that had imported "fill material" (soil) without an approved rough-grading plan. Such stabilization plans included the use of appropriate vegetation and the use of riprap and erosion control blankets; the fourth plan was designed to correct illegal activities and remediate improper use of an RPA.

#### 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.
- The Wetlands Board considered one application for a wetlands permit in August 2012 and two permit applications are pending Wetlands Board review as of November 3, 2012. The

Wetlands Board will also consider, in December 2012, a proposal to require mitigation and restoration because of a wetlands ordinance violation.

- In March 2012 Julie Bradshaw of the Virginia Institute of Marine Science conducted a training session for Wetlands Board members and interested staff addressing decision matrices that VIMS has developed to assist Wetlands Board members in the permit decision-making process.
- The Chair of the Wetlands Board was invited to participate and is participating in a committee established by the Virginia Marine Resources Commission to develop guidance for local wetlands boards to implement Senate Bill 964, now law, which directs VMRC to develop and implement a general permit to authorize and encourage the use of living shorelines as the preferred alternative for stabilizing tidal shorelines.

#### Virginia Department of Transportation

- As required by federal and state laws and regulations, the Virginia Department of Transportation mitigates unavoidable impacts to water resources within Fairfax County that occur during highway construction. VDOT created approximately eight acres of wetlands (seven acres non-tidal and one acre tidal) and restored 2,635 linear feet of streams in Fairfax County's watersheds as compensatory mitigation for unavoidable impacts from highway construction projects including the Fairfax County Parkway, the Route 28 widening, the Roberts Parkway bridge overpass, the Springfield Interchange improvements, the Route 29 bridge replacement over Big Rocky Run, the Route 1 widening and the Woodrow Wilson Bridge Replacement. VDOT is presently creating another two acres of wetlands at the confluence of Taylor Run and Cameron Run during at the I-95/Telegraph Road interchange improvement; a five-year success monitoring of that mitigation site will begin in the following year of its establishment.
- VDOT has included landscaping on several road construction projects to enhance context sensitive road design. Final plans for the I-495 Express Lanes Reforestation Project are currently under development and the project will be advertised this year.

#### Virginia Department of Forestry

- In 2011 the Virginia Department of Forestry 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 29<sup>th</sup> year, the Tree City USA award. The award is applied for by the Fairfax County Urban Forest Management Division and given through the State Department of Forestry. Tree seedlings are distributed by VDOF to people attending the Arbor Day celebration. In 2011, 250 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 2011, approximately 3,500 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 and one revised plan (covering 62 acres) were prepared in 2011. VDOF also wrote two Neighborhood Forest Management Plans 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 60 applications and plans in 2011. 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 2011, VDOF conducted 60 talks on the general benefits of urban forests and riparian buffers.
- The Virginia Department of Forestry website ([www.dof.virginia.gov](http://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.

#### Urban Forestry

- In addition to carrying out its core services relating to land development and forest pest management, in 2011, Urban Forest Management Division started the work need to realign UFMD from Land Development Services to another business area within the Department of Public Works and Environmental Services that would be more contiguous to implementing the Tree Action Plan and 30-Year Canopy Goal. DPWES leadership determined that UFMD's alignment within the Stormwater Business Area would provide significant opportunities for mutual mission support and this represented optimal alignment for TAP and 30-year Canopy Goal support. A test period of one year was set aside to observe the pros and cons of this new relationship and if the new alignment proved beneficial then UFMD would officially transfer to the new business area at the beginning of FY 2013 (July 2012).
- On March 22, 2011, the Board of Supervisors' Environmental Committee directed staff to develop specific actions to implement goals and strategies in the Tree Action Plan. In response to this directive, staff from the UFMD and the Department of Planning and Zoning started to draft amendments to the Public Facilities Section of the Policy Plan volume of the Comprehensive Plan. The draft amendments are intended to enhance tree preservation and

landscaping/buffering on new or re-developed county public facilities. It is anticipated that this amendment will go forward for consideration during CY 2013.

- UFMD staff facilitated planning meetings with Stormwater Planning, Maintenance and Stormwater Management Division and Facilities Management Department to discuss potential tree planting locations on the Government Center property. Coordinated tree planting activities at the Government Center included relocation of existing trees and saplings that were located in areas designated for a stream restoration project. UFMD staff organized and directed approximately 30 volunteers from various Fairfax County agencies in this multi-day planting effort.
- As part of the 2011 Land Conservation Award Program, UFMD staff prepared nominations to the Tree Commission of potential candidates for the Tree Preservation and Planting Awards. Awards for tree preservation are presented to recognize those developers and builders who have done an outstanding job of preserving trees on a project they have constructed. Tree planting and landscaping awards are presented to recognize developers and builders who have done an outstanding job of replacing tree that were unavoidably destroyed due to development. The Tree Commission awarded the 2011 Tree Preservation and Planting Awards to:
  - Kendrick: Tree Preservation.
  - The Commons, Phase IV Shopping Center: Tree Preservation.
  - The Grove at Huntley Meadows: Tree Planting and Tree Preservation.
  - The Falls at Flint Hill: Tree Planting.
  - McLean Cove: Tree Planting.
  - Goodwin House: Tree Planting.
- Gypsy Moth Caterpillar: In calendar year 2011, 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; treatment was not planned for 2012. 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 is native to the United States and feeds on a broader range of trees than the gypsy moth. Periodic outbreaks of this pest are common, especially in older declining forest stands. The area of the county that had the most severe infestations of fall cankerworm was in the Mount Vernon and Lee magisterial districts. The result of the winter 2011–2012 monitoring effort indicated that 115 acres of treatment were required in spring 2012. These areas were to have been treated with hydraulic ground spraying equipment and with the pesticide Bt. It is expected that populations of this pest will be increasing in the near future.
- 1000 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 planned to establish trapping sites for this pest during summer 2012.

- 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 the beetle can be found in many 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. Staff is considering various control options for this pest. Possible control options include pesticide treatments and release of predatory insects that feed on HWA.

#### 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.
- FCRP has recently initiated a tree gifting program known as "Reforest Fairfax." Each \$35 gift that is purchased through this program includes five tree seedlings that will be planted in Fairfax County by Fairfax ReLeaf during the next planting season, a gift card with a personal greeting, a gift certificate with the registration numbers of the trees that have been purchased and access to an on-line locator tool to see the areas within which the trees were planted.

- FCRP has partnered with the Chesapeake Bay Club and the PlantMorePlants.com stormwater campaign. On behalf of FCRP, the Chairman of the Fairfax County Board of Supervisors requested that the ads that have been developed through this campaign be played as public service announcements by Cox Communications to cover the Northern Virginia market. Cox Communications has agreed to run these in its normal PSA cycle during fall 2012. Additionally, the Fairfax County Channel will be running the ads on a continuing basis.
- Additional FCRP activities are noted in the detailed report and on the project's website at <http://www.fcrpp3.org/>. FCRP's numerous efforts resulted in the organization's receipt of an Environmental Excellence Award in 2011.

#### Fairfax Master Naturalists

- 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 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.
- The Fairfax Master Naturalist chapter successfully ran two basic training classes in 2012, recruiting 40 new members. This brought the number of trained volunteers to 207 at the end of 2011, with 133 current members. FMN provided over 4,200 hours of volunteer service in 2011 of which 1,055 hours were in education and outreach, 948 in citizen science projects and 1,778 in stewardship efforts. Through this volunteer service, FMN members played a significant role in FCPA's IMA and Early Detection and 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. NVSWCD recognized FMN as "Cooperator of the Year" for contributions throughout the county including a significant role in stream monitoring and other watershed efforts.

#### Virginia Outdoors Foundation

- The Virginia Outdoors Foundation was created by an Act of the Virginia General Assembly (Chapter 18 of Title 10.1) in 1966 and is both a state agency and an independent instrumentality. VOF is also a public foundation and can "...accept, hold, and administer gifts and bequests of money, securities, or other property, absolutely or in trust, for the purposes for which the Foundation is created." A good summation of the VOF legislative charge may be that it is steward of the natural and cultural heritage land resources of Virginia on behalf of present and future citizens.

- The primary mechanism for accomplishing VOF's mission is the perpetual open space easement. The Virginia Outdoors Foundation currently holds six easements in Fairfax County.

#### VDEQ Wetlands Permitting

- Ten wetlands permitting activities involving six facilities in Fairfax County were completed in 2011. The types of wetlands affected and the acreage of each type were: non-tidal forest mitigated, 15.8 acres; non-tidal forest permitted, 7.8 acres; non-tidal scrub mitigated, 2.9 acres; non-tidal scrub permitted, 0.5 acres; non-tidal open permitted, 1.9 acres; non-tidal open mitigated, 0.6 acres; non-tidal emergent mitigated, 3.4 acres; and non-tidal emergent permitted, 1.5 acres.

#### 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 these websites: <http://www.fairfaxcounty.gov/parks/resources/stewardship.htm> and <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](mailto:SupportParks@aol.com)  
<http://www.fairfaxparkfoundation.org>

- 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](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](mailto: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.

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 due to efforts by the Fairfax County Park Authority staff in its efforts to establish a natural resources baseline inventory. The 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 Geographic Information System 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 notes the accomplishment of the Park Authority in preparing and publishing a Natural Resources Plan 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 implement the plan, but much more needs to be done. EQAC fully supports these efforts. EQAC's intent is that Fairfax County should have all the tools in place that will support the active management and conservation of the county's natural resources.

### **Recommendation**

The Fairfax County Park Authority approved a Natural Resource Management Plan in 2004. This partially fulfills a long-standing EQAC recommendation to develop and implement a countywide Natural Resource Management Plan. However, most of this plan cannot be implemented without additional staff and funding for the FCPA. The FCPA staff estimates that full implementation will require approximately \$8 million per year and dozens of staff positions. This includes 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 will allow 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 require \$650,000 and six positions. EQAC strongly feels that the plan needs to be implemented. Therefore, EQAC recommends that the Board of Supervisors provide sufficient funding to implement Phase 1. And, as the county's budget problems are eased, EQAC further recommends that the Board of Supervisors increase funding with an aim toward supporting the full implementation of the Natural Resource Management Plan. In the meantime, EQAC recommends that some additional staff positions and supporting funding be found from internal FCPA staff assets, to include funding of the two new vacant positions in the Natural Resource Management and Protection Section.

## **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 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 has now been filled by a highly qualified individual who has conducted a thoroughgoing assessment of the wildlife management programs and introduced some additional activities.

- However, despite the temporary position vacancy, in a prior year, the deer management program was able to conduct one managed hunt which took 32 deer; an additional five sharpshooter events took 27 deer. The Park Authority on its separate federal permit oiled 439 goose eggs in 137 nests.
- The new county Wildlife Biologist and the Director of Animal Services have been conducting an extensive program review in order to maximize the on-going effectiveness of these programs 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. The county Wildlife Biologist position became vacant in 2008, and there was a considerable lapse in deer management activity until a suitable replacement could be identified and hired. Even so, in a prior year, there was one managed hunt conducted with 32 deer taken, and five sharpshooter events with 27 deer taken for a total reduction in the deer herd of 59 animals.
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 eventually economic recovery will make it possible to reactivate this position.
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 newly begun archery program should be continued as a means of controlling deer depredation of vegetation on residential properties where firearms cannot be used.

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](http://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 at Ronald Reagan National Airport and Washington Dulles International Airport in 2011 have increased from the 2010 levels, rising from 607,000 to 609,000.

### **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 36 locations throughout the metropolitan Washington, D.C. area, including 14 sites in Fairfax County. Previously, there were 32 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.

### **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.
- A number of other construction projects at Dulles Airport are under way.

### **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.

### **Aviation Policy Committee**

- The Metropolitan Washington Council of Government’s Aviation Policy Committee was discontinued effective January 2011 and oversight for regional aviation policy was returned to the COG board through the authority of an Aviation Policy Liaison. The Liaison’s duties include coordination with COG staff and with MWAA; this was considered to be the best use of limited COG resources. The Honorable Mary Hynes, Vice-Chair of the Arlington County Board, is currently serving as Liaison.

### **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, Liaison 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 a source of funding would need to be found before it could be adopted.

### **Highway Noise Barriers**

- The I-495 High-Occupancy Toll Lanes Project is well under way. The widening of I-495 will result in significant noise impacts; 13 new noise barriers have been constructed, and eight existing barriers have been replaced, enhanced and/or extended. Barrier heights will range from seven to 39 feet.
- New noise barriers are also being provided for the I-95/Telegraph Road interchange project, the I-95 4<sup>th</sup> Lane Widening project, the extension of the Fairfax County Parkway through the Fort Belvoir North Area (formerly known as the Engineer Proving Ground), the new Fairfax County Parkway/Fair Lakes Parkway Interchange Project and the Dulles Connector Road.

### **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 is to be built over the noisiest portion of a loop track at the site. The sound box is expected to ensure that all conditions and requirements relating to noise generated from the tracks will be satisfied. It will cover approximately 1,000 linear feet of track and should be completed by 2013.

### **Tysons Corner Noise Study**

- An areawide study of noise levels along Tysons’ major transportation corridors has been undertaken; this study will clearly define noise contours with current noise levels and future noise levels based on a minimum 20-year traffic volume projection from all transportation noise sources. Once noise contours are mapped and compared with planned locations for future residential and hotel development in Tysons, the implications of applying the current noise policy can be evaluated. The study should be completed in 2012, and EQAC will report on the results in its 2013 Annual Report on the Environment.

### **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 underway in different parts of the county, the FCRP has been awarded a 2011 Environmental Excellence Award (see Appendix C). Anyone interested in joining the efforts should contact the FCRP at [info@fcrpp3.org](mailto:info@fcrpp3.org).

### **Issues of Note**

- While the 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.

### **Comments and Ongoing Concerns**

1. 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.
2. 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.
3. 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.
4. EQAC is pleased that a series of Web pages addressing noise issues have been established on the county's website. The county should ensure that this page is kept current through regular updates.

5. Once one year of 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.
6. EQAC is pleased that the Metropolitan Washington Airports Authority reports, on its website, results from the new noise monitoring system for Washington Dulles International and Ronald Reagan Washington National Airports, and that the Noise Reports for both airports are accessible from the MWAA homepage by searching “noise” from the box at the upper right. EQAC supports MWAA’s plan to update the Noise Report on a quarterly basis and looks forward to seeing more current data.

**Recommendation**

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 is concerned that that noise may become more of a concern in the future and that a monitor would then be needed. EQAC therefore recommends that the Board of Supervisors request to MWAA that a replacement site be found.

## **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 are 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 focuses 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 are several revisions to the Outdoor Lighting Ordinance that are needed to address specific problems. There have been two task force meetings to define the scope of these revisions and drafts of the revision are being 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 this past year 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. However, extensive investigation of the "glare" problem shows that bright lights against a dark-sky background are subject to some fundamental laws of nature that are for all practical purposes beyond the control of mankind. 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.

**Comments and Ongoing Concerns**

1. In response to a recommendation 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 all 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 recommendation 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 current meetings of a task force of stakeholders to develop specifications for such revisions. 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. The revisions should be in final form before the end of the current year.
3. 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."

### **Recent Activities**

In July 2010, EQAC adopted a series of recommendations regarding a number of blight/litter related matters. That was followed up in August 2010 with two legislative proposals relating to sign enforcement. The sign proposals were discussed at the Board of Supervisors' Legislative Committee; during that discussion, the County Executive suggested that the board not pursue EQAC's proposal and instead suggested that community efforts relating to the control of signs be encouraged through the Adopt-a-Highway program.

In November 2011, after an election, Supervisor Herrity raised concerns regarding the proliferation of political signs in rights-of-way. At the December 6, 2011 board meeting, he presented a Board Matter (jointly with Supervisor Smyth) addressing sign enforcement issues. Based on information in the Board Summary of that meeting (available at <http://www.fairfaxcounty.gov/bosclerk/summary/2011/11-12-06.pdf> [see item #63 beginning at the bottom of page 60, and provided in the online, detailed version of this report), a key component of EQAC's sign enforcement legislative proposal was picked up in this Board Matter (removing Fairfax County-specific limitations from sign enforcement enabling language).

Information provided by the Fairfax County Department of Code Compliance for this report indicated that there were 136 sign-related zoning complaints received in 2011.

In response to a request from the Board of Supervisors at its December 6, 2011 meeting for information concerning the removal of illegal signs in VDOT's rights-of-way, former County Executive Anthony Griffin provided a response to the board dated February 17, 2012. A subsequent discussion at the board's Transportation Committee on June 12, 2012 resulted in staff developing further options for consideration. As of the date of

preparation of this section of the report, the County Attorney was drafting a proposed agreement with the Commonwealth Transportation Commissioner that, after a public hearing, would authorize Fairfax County to institute a sign removal program. Details about sign removal, frequency or enforcement have yet to be determined.

More recently, EQAC learned about legislation passed in April 2012 that allows the Commissioner of Highways to enter into agreements with the local governing body of Fairfax County authorizing local law-enforcement agencies or other local governmental entities to act as agents of the Commissioner for the purpose of (i) enforcing the provisions of § 33.1-373 of the Code of Virginia and (ii) collecting the penalties and costs provided for in that section. EQAC has not yet had the opportunity to fully investigate the ramifications of this legislation or to evaluate how it is being applied in Fairfax County.

### **Recommendation**

1. The Environmental Quality Advisory Council supports the general concepts as discussed by the Board of Supervisors at its December 6, 2011 meeting concerning actions that the county can take regarding the removal of illegal signs in the county. This includes: support for legislation that would remove unnecessary restrictions that apply to Fairfax County (refer to discussion above about recent activities); development of options for the removal of signs (including an estimate of cost and the potential reduction in cost over a three-year period); an agreement with the Commonwealth Transportation Commissioner that would authorize the Board of Supervisors to remove all signs from VDOT rights-of-way; and research on the opportunities for the sign bond to be increased to \$1,000. EQAC requests that, within six months of receiving the Annual Report on the Environment, the results from these efforts be completed and provided to the public, or that the board identify an alternative timeline for addressing these actions.