

2013 Annual Report on the Environment

Environmental Quality Advisory Council

SUMMARY REPORT

November 2013

A Fairfax County, Virginia Publication



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



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The cover shows a Pipevine Swallowtail Butterfly. Photo by Charles Smith, Fairfax County Park Authority. Cover design by Hana Burkly, Student Member, Environmental Quality Advisory Council.

ANNUAL REPORT
on the
ENVIRONMENT

2013



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Fairfax County, Virginia

Environmental Quality Advisory Council

November 2013

Printed on recycled paper

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Introduction

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

The Annual Report on the Environment, which is an update on the state of the county's environment, serves a threefold purpose. 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 Annual Reports from the past several years, 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. 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. In last year's report, EQAC included a "spotlight" on two environmental initiatives of Fairfax County Public Schools: High performance and sustainable schools; and Get2Green Environmental Education and Action. EQAC has updated these discussions and has added to the "Spotlight" section a discussion of a collaboration between FCPS and the county's Stormwater Planning Division on stormwater management plans for school properties. EQAC commends FCPS for working towards improved environmental performance in these areas. The report also includes a short table identifying who people can call in regard to various potential environmental crimes/concerns. A similar table has been provided in previous years' reports. The report also includes EQAC's "Scorecard" of progress made on its recommendations from last year's report. Finally, new to this year's report is a brief section highlighting environmental stewardship/volunteer opportunities in Fairfax County.

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 2012; however, in some cases, key activities from 2013 are also included.

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

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

Virginia Department of Game and Inland Fisheries
Virginia Department of Transportation
Virginia 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 2012 *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 19, 2013

The Environmental Quality Advisory Council is pleased to present the 2013 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 2012, but also includes significant actions from 2013 that could impact EQAC's comments and recommendations. We recognize that the report does not capture all ongoing actions; if we tried to accomplish this, the report would never be finished and would be even longer. The report consists of nine chapters – each chapter addressing a different aspect of the environment. The chapters are arranged to reflect the order of topics listed in the Board of Supervisors' Environmental Agenda. We have again have created two versions of the report; one a printed summary version, and two, an electronic complete version with all data included, available both on-line and in the CD attached to this report. We have again highlighted environmental stewardship opportunities within the report chapters; this year, however, we have added a summary of these opportunities.

EQAC thanks the board for its continued strong support of environmental 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 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 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,

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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 recommends that the Stormwater Service District rate be increased in FY 2015 by at least one-quarter penny, from a rate of 2.0 cents per \$100 assessed real estate value to 2.25 cents per \$100. EQAC understands that this increase would not fully meet stormwater management needs and therefore suggests that additional increases be continued each fiscal year until adequate funding to support the program is achieved. This would, once again, result in more funding for modest watershed improvement programs and a somewhat more realistic infrastructure replacement timeline. We realize that there will be a need for additional increases in funding for water quality projects to meet future permit conditions, and for infrastructure reinvestment, as the system is continually growing and aging.

2. EQAC recommends that the board **continue support for funding for the Environmental Improvement Program for the upcoming fiscal year.** The EIP is a reflection of those non-stormwater programs, including Energy Action Fairfax and other county sustainability initiatives. Funding the EIP is necessary to implement the Environmental Agenda adopted by the board for this county.
3. **EQAC is looking forward to the upcoming County Dialogue on Transportation and recommends that non-motorized and multi-modal transportation options receive priority.** The Fairfax County Bicycle Master Plan, Phase 1: Tysons Corner, for example, identifies healthy, effective, shovel-ready options to better connect Tysons with neighboring communities and trails in the county. There are both capital and non-capital elements in the plan. In order to be successful, we recommend that outreach and education be included. This is an example of combining land use and transportation to create great interconnected places across the county.

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.

Board of Supervisors
Continued

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

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

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

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

Respectfully submitted,



Stella M. Koch, Chairman

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SCORECARD
Progress Report on 2012 Recommendations

1. CLIMATE CHANGE AND ENERGY

Climate Change & Energy Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>IX. 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.</p>	<p>This recommendation has been addressed. In response to a recommendation included in the FY 2012 Environmental Quality Advisory Council's Annual Report on the Environment, beginning in FY 2014, a new project selection process has been implemented. A staff Environmental Improvement Program Committee developed a more rigorous project selection process to support the board-adopted Environmental Agenda and other board-adopted environmental and energy policy. To facilitate the selection process, the committee developed minimum submission requirements and specific project scoring criteria, both of which were reviewed by EQAC. The committee then solicited requests from county agencies for project proposals, interviewed project teams and ranked each proposal based on the project scoring criteria and subsequent interviews.</p>	<p>EQAC agrees that a process has been addressed to implement the recommendation. EQAC will continue to track this recommendation until implementation is successful.</p>	<p>In progress.</p>

Climate Change & Energy Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>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:</p> <ul style="list-style-type: none"> 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. 	<p>These recommendations are currently being addressed as described below.</p> <p><i>Education and outreach on options for increasing recycling, including the composting of compostable material.</i></p> <p>Currently, information about composting is on the county website at http://www.fairfaxcounty.gov/dpwes/recycling/composting.htm. A new backyard composting outreach campaign will require an evaluation of best management practices of the compost piles to ensure that practices recommended do not create odors or harbor rodents.</p> <p><i>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.</i></p> <p>The county solid waste program staff has been involved in attempting to address organics management needs by participating in the Metropolitan Washington Council of Governments’ organics committee that was established in 2009.</p> <p><i>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.</i></p> <p>Fairfax County has recently embarked on a project to evaluate other opportunities to recycle and dispose of waste from the county. This is a Request for Expressions of Interest to manage any and all of the waste generated in the county and it allows prospective bidders to present proposals for a variety of waste management techniques. As of the time that this summary was prepared, the results of this RFEI have not been analyzed but they should help guide future decisions on recycling in Fairfax County.</p>	<p>Progress on this recommendation is great but concrete steps have yet to have been implemented.</p> <p>A key issue in determining what waste streams will or can be recycled will depend on the final contract requirements for the flow of waste to the Covanta facility.</p>	<p>In progress.</p>

Climate Change & 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. 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.</p>	<p>This recommendation will continue to be addressed with an action in the Environmental Improvement Program that will be updated for fiscal year 2015.</p> <p>In January 2012, Fairfax County launched its Energy Action Fairfax pilot program to increase the awareness of Fairfax County residents regarding their personal energy consumption and to encourage them to reduce that consumption.</p> <p>Major activities in developing and implementing the initial residential Energy Action Fairfax program included proposing program names and logos, developing messaging and branding, creating informational materials and content for the program website, establishing contacts with community organizations and preparing for and hosting numerous events with participating communities, including workshops focused on home energy efficiency and energy audit “parties” at the homes of community volunteers.</p>	<p>While progress has been made with this recommendation and while EQAC sees great promise with the new Energy Coordinator, this recommendation is still in implementation.</p>	<p>In progress.</p>

Climate Change & Energy Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>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</p>	<p>In January 2012, Fairfax County launched its <i>Energy Action Fairfax</i> pilot program to increase the awareness of Fairfax County residents regarding their personal energy consumption and to encourage them to reduce that consumption.</p> <p>The pilot program relied on three distinct but inter-related approaches to energy education and outreach: direct engagement to homeowner and civic associations; a social media and marketing “push;” and a user-friendly website that serves to “pull” residents and Web-visitors to the site and program. The direct engagement aspect provided the peer-to-peer contact essential to behavior change; it also generated content for the marketing efforts. Program objectives included educating citizens about their energy consumption both at home and in the workplace, explaining the energy assessment (audit) process and encouraging residents to undertake energy-savings measures. The program also educated residents about the expected direct benefits and costs of typical improvements and considerations for evaluating and prioritizing recommended improvements.</p> <p>Although the pilot program has ended with the expiration of the EECBG award term, the county extended the contract with GolinHarris on December 10, 2012 to begin the process of developing a long-term strategic plan that will serve to guide future Energy Action Fairfax program efforts and initiatives. Although details of the draft plan are currently under development, it is envisioned that the plan will include a residential and commercial sector business energy outreach and education plan.</p> <p>In addition, the fiscal year 2014 budget included an amount of \$250,000 to support Energy Education and Outreach initiatives including the county’s <i>Energy Action Fairfax</i> program. This program is intended to increase the awareness of Fairfax County residents and businesses regarding energy consumption and to encourage them to reduce consumption.</p>	<p>We are encouraged to see continued progress and hope that an effective established program can be developed.</p>	<p>In progress.</p>

II. LAND USE AND TRANSPORTATION

Land Use & Transportation Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. 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.</p> <p>EQAC also recommends that the county continue to refine and formalize process for revitalization, especially in mixed-use centers. . . .</p> <p>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.</p>	<p>Fairfax Forward is an important step in the continued maintenance of the county’s Comprehensive Plan. Building familiarity and support for the recommendations of Fairfax Forward, including the new approach to Plan review and the Comprehensive Plan Amendment Work Program, are critical to the success of the effort. . . . The recommendations have received support through substantial public outreach efforts, which provide information about the project, build understanding and gather stakeholder input. Public outreach has involved community meetings, generally one in each supervisor district, at significant milestones in the process.</p> <p>The county encourages revitalization efforts throughout the land use process through a variety of techniques. The techniques are applied when needed during revitalization projects, depending on the stage in the land use process and the particular proposal, but may not be necessary as a formal part of all revitalization efforts. In order to better utilize these techniques and their appropriateness, an evaluation of revitalization incentives is being conducted this year and should result in a more comprehensive understanding of how current incentives influence development decisions and identify possible new incentives and improvements to current incentives.</p>	<p>Fairfax Forward was carefully initiated and is following a work plan with broad community support. EQAC wants to encourage the process for adopting future work plans and processes.</p> <p>EQAC looks forward to an evaluation of revitalization practices.</p>	<p>Ongoing</p> <p>Ongoing</p>

<p>Land Use & Transportation Recommendations</p>	<p>Action taken by Agency or Department</p>	<p>EQAC Comments</p>	<p>Completed</p>
<p>2. EQAC is an advocate of the county GIS and the Integrated Parcel Lifecycle System. . . .</p> <p>a. EQAC recommends that the county push to have all land use and parcel based data tied into the GIS. . . .</p> <p>b. EQAC continues to recommend that the Comprehensive Plan be reflected and modeled in the GIS. Applications such as the internal Comprehensive Plan Potential and the Comprehensive Plan Amendment applications (used to gather data for the State of the Plan report) are very useful for understanding the real time status of the Comprehensive Plan. These applications should be available to the public on the Comprehensive Plan website.</p> <p>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. . . .</p>	<p>The integration of land use and parcel information with GIS has been done through several venues, including the Land Development System, IPLS and internal DPZ GIS applications and databases. There is an established regular feed of Plan data from the DPZ databases to IPLS for land use forecasts. These data are currently used for various planning functions, including population and employment forecasting for Fairfax County.</p> <p>In 2012, the county created a new data repository called Land Development Information, which consolidated land development and land use data from multiple current and legacy systems.... LDI provides powerful web based inquiry and search capabilities. The LDI portal is regularly used by employees, developers and residents and can be found at: http://ldip.fairfaxcounty.gov/ .</p> <p>Part b of this recommendation has be addressed and implemented partially. The Comprehensive Plan Map has been digitized and is accessible to the public. In addition, the Comprehensive Plan Potential database was refined and the improvements to the Comprehensive Plan Potential GIS application are on-going. As part of the Area Plans Review Retrospective, Plan Amendment data were refined and updated to create a GIS layer of all the Plan Amendments going back to 1994.</p>	<p>EQAC appreciates the work done to digitize the Comprehensive Plan Map and refine the plan potential tools.</p> <p>EQAC is still concerned that nonresidential data are not integrated into the GIS.</p>	<p>Partially.</p>

III. AIR QUALITY

There were no recommendations in the 2012 Annual Report

IV. WATER RESOURCES

Water Resources Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. EQAC recommends that Fairfax County continue to adequately fund and implement its ongoing stormwater program, which includes dam maintenance, infrastructure replacement, water resource monitoring and management, watershed restoration and educational stewardship programs. . . .</p> <p>EQAC recommends that the Stormwater Service District rate be increased in FY 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.</p>	<p>There was no increase in the Stormwater Service District rate in FY 2014, but staff has identified an approach to a gradual, long-term, increase in the rate and has recommended completion and consideration of a long-term funding and staffing plan for the stormwater program.</p>	<p>EQAC continues to support this request for increases in the Stormwater Service District rate to meet the needs and requirements for Stormwater management and stream protection and restoration.</p>	<p>In progress.</p>

Water Resources Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>2. Fairfax County is preparing a Stormwater Management Ordinance in response to state regulations requiring localities to adopt ordinances and take over reviews and inspections for Virginia Stormwater Management Program general permits relating to stormwater runoff from construction sites; 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.</p>	<p>The proposed ordinance has been drafted and is undergoing review; a Planning Commission public hearing has been held, and a Board of Supervisors public hearing has been scheduled. There is some lessening in certain areas proposed but also language that would keep the present level of protection. Decisions have not yet been made by the Board of Supervisors.</p>	<p>EQAC continues to recommend that this new Stormwater Management Ordinance maximize stream protection <u>and</u> lessen no current protection, in order not to have an adverse impact on the environment.</p>	<p>In progress.</p>

V. SOLID WASTE

There were no recommendations in the 2012 Annual Report

VI. HAZARDOUS MATERIALS

There were no recommendations in the 2012 Annual Report

VII. ECOLOGICAL RESOURCES

Ecological Resources Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. The Fairfax County Park Authority approved a Natural Resource Management Plan in 2004. 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 recommends that some of the six staff positions should be found from internal FCPA staff assets.</p>	<p>The Park Authority concurs with the recommendation to fund and implement the Natural Resources Management Plan, but at this time cannot realign staff from other important existing programs and services to the natural resources management program—FCPA is unable to reallocate staff to the natural resources management program without sacrificing other important existing programs and services to the public. However, the Park Authority will continue to work with the Department of Management and Budget to seek funding in future years. If funding is provided, FCPA will look at its positions again to see if any can be realigned to the natural resources program.</p> <p>Staff began revision of the agency Natural Resource Management Plan in fall 2012. The Park Authority staff will hold a public review in fall 2013 and hope to adopt the revised Natural Resource Management Plan by January 2014</p>	<p>The Park Authority ungraded the Natural Resource Management and Protection Section to a Branch plus created new positions. Unfortunately, sufficient funding does not exist to increase staff and fully implement the Natural Resources Management Plan.</p> <p>A revised Plan should be adopted by January 2014. EQAC reiterates its recommendation that the Board of Supervisors provide funding to implement the first phase of the Plan. (EQAC expects the first phase under the revised Plan to be similar to the Phase 1 associated with the current 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.	The Fairfax County Deer Management Program will continue to utilize all available deer management tools for population control. Public managed hunts will continue to be used at selected parks to implement sustainable hunting pressures.	The numbers of hunts and the success rates have been what could be reasonably expected given the level of staffing availability.	Yes
2. The sharpshooter program should be continued as it is both cost-effective.	Sharpshooting operations will continue to be used at night to implement sustainable hunting pressures at selected parks.	The number of sharpshooter events and the success rates has been what could be reasonably expected given the level of staffing availability.	Yes
3. The newly begun archery program should be continued as a means of controlling deer depredation of vegetation on residential properties where firearms cannot be used.	The Archery Program will continue to be used at selected parks to implement sustainable hunting pressures.	The archery program has been very successful in addressing one of the key needs of homeowners to control the environmental destruction caused by deer in residential neighborhoods.	Yes, within the limits of staff availability. Expanded effort would be desirable.

VIII-2. IMPACTS OF GEESE IN FAIRFAX COUNTY

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

VIII-3. COYOTES IN FAIRFAX COUNTY

There were no recommendations in the 2012 Annual Report

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

There were no recommendations in the 2012 Annual Report

IX-1. NOISE

Noise Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. The noise monitor at Great Falls Elementary, which primarily served Reagan National Airport, has been decommissioned with no plans for a replacement as there are currently few complaints about noise at that site. EQAC 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.</p>	<p>MWAA reports that the monitor that had been stationed at Great Falls Elementary had been destroyed and there were no plans to replace it, as there have been few complaints of aircraft noise in the Great Falls area. In fact, aircraft-related noise levels recorded at this site were in the range of DNL 45 dBA (annually), which is 20 decibels below the threshold at which federal interagency noise compatibility guidelines identify potentially incompatible land uses. MWAA has, therefore, concluded that the cost of replacing this monitor cannot be justified.</p> <p>The staff response stated that, for the reasons noted above, the replacement of the Great Falls monitoring site may not be justifiable without some clear evidence that noise may become more of a concern in this location in the future. The response suggested, though, that a more appropriate question may be whether this site should be replaced elsewhere in Fairfax County; i.e., are there any gaps in the monitoring network in Fairfax County that would benefit from the relocation of the Great Falls monitoring station to another location in the county? MWAA's view on this question is that the site selection process was completed about five years ago, resulting in the addition of several Fairfax County sites. MWAA points out that since the process is so complex, involving coordination with MWAA, county staff and the Airports Advisory Committee to recommend sites that would be appropriate (sites that then must meet very restrictive siting criteria of being publicly owned, being accessible to ground transportation and being accessible to electric service), it is not worth the time and money to go through the process again. MWAA believes the Great Falls Elementary site should be valued on its own merits and a replacement site not be researched. Staff recommended referral of this issue to the county's Airports Advisory Committee.</p>	<p>EQAC concurs with the staff recommendation to refer these questions to the Airports Advisory Committee, in order to give the committee the opportunity to consider MWAA's view of the merits of decommissioning the Great Falls site, and relocating the station elsewhere in the county.</p> <p>EQAC understands that the Airports Advisory Committee will be reviewing this issue and making recommendations about a replacement monitor. While EQAC's recommendation calls for the referral of the issue to the Airports Advisory Committee, no Board of Supervisors action is needed to effectuate the committee's review.</p>	<p>In progress.</p>

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IX-2. LIGHT POLLUTION

There were no recommendations in the 2012 Annual Report

IX-3. VISUAL POLLUTION

Visual Pollution Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>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.</p>	<p>The Board of Supervisors at its meeting on February 27, 2013 directed the county executive to enter into an agreement with the State of Virginia which would allow for the removal of illegal signs in the public rights-of-way by the county.</p>	<p>EQAC applauds the county's efforts to enter into a legal agreement with the Virginia Department of Transportation that addresses removal of illegal signs from highway rights-of-way. Further, EQAC supports the plan noted by the county to evaluate the program following its first year of operation in the county. EQAC intends to follow the results from this program and to provide further input regarding both the county staff's analysis of its successes and/or failures and staff's recommendations about retention of and possible modifications to the program.</p>	<p>Partial.</p>



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 184,625 students for the 2013-14 school year. Over 14 percent of Virginia's K-12 students are enrolled in FCPS.

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

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

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

FCPS uses the Collaborative for High Performance Schools

(see <http://www.chps.net/dev/Drupal/node>) 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's use of CHPS is relatively new and data are not yet available on overall district-wide compliance with CHPS. FCPS did not identify anything new in regard to CHPS in the information it provided for this report.

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 nine 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 (See <http://www.fcps.edu/fts/facmanagement/greenhousegas/index.shtml>). However, that office has not yet completed the inventory for 2012; additional data about emission factors for specific types of equipment are needed before the inventory can be completed.

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.

To date, FCPS has approximately 65 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 Members (500). As of August 2013, FCPS had three Green Flag Eco Schools, the highest honor in the Eco School process. They are Lanier Middle School, Churchill Road ES and Centreville ES.

Get2Green collaborates with a wide variety of internal FCPS departments to assist schools in their “greening” efforts, as well as a group of Get2Green principals that meets quarterly. The school district works with many external partners across the county and region to bring expertise and resources to the schools. Get2Green is also working on efforts to improve communication both internally and externally and to provide staff development for teachers and administrators to help student teams successfully work on sustainable projects.

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 released last year and the Virginia Resource Use Education Council is developing a policy on environmental education. Further, Virginia is participating in the U.S. Department of Education’s Green Ribbon Schools program.

Recycling efforts have been under way at Fairfax County schools for several years. The district’s waste hauler, Potomac Disposal Services, provides a consultant to assist schools in setting up recycling efforts. 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; 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). A short video on the methods Centreville ES uses for recycling can be seen at http://youtu.be/JU6_IRhG9I4. 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. Food sharing has recently been the largest way schools are reducing the weight of cafeteria waste.

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 its playing fields during the spring 2012 sports season. The program was to have been 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.

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

Stormwater management projects have been implemented at eight schools with CIP projects and 10 others where watershed plan projects have been identified, with a potential for increased efforts during Fiscal Year 2014. In the briefing to EQAC, examples of stormwater management projects were discussed for Waples Mill Elementary School (rain garden, native meadow, tree planting, and permeable pavers) as well as preliminary concepts for Sunrise Valley and Terraset Elementary Schools. In addition, there were discussions about collaboration among FCPS, the Fairfax County Park Authority and DPWES at the Forestville Elementary School/Nike Park site (early in the planning stages).

Environmental Stewardship/Volunteer Opportunities in Fairfax County

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

1. NORTHERN VIRGINIA REGIONAL PARK AUTHORITY

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

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

NVRPA partners with REI's adventure school, introducing people to the outdoors at Pohick Bay, Hemlock Overlook and Fountainhead Regional Parks. NVRPA's naturalists hold regular educational canoe and kayak trips at Pohick Bay, and the roving naturalist conducts environmental programs at Meadowlark Botanical Gardens as well as at Bull Run and Pohick Bay Regional Park campgrounds. Potomac

Overlook Regional Park and W&OD Trail staff hosted booths at various county fairs to give environmental information to the public.

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

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

2. FAIRFAX COUNTY PARK AUTHORITY

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

Many of the stewardship activities that occur on parkland could not take place without the efforts of many volunteers and partners. Groups and individuals participate in a wide range of volunteer opportunities in environmental stewardship on parkland, from becoming a permanent volunteer for the Park Authority to one-off events. In FY13, volunteers contributed over 26,000 hours to natural resource stewardship activities on parkland.

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

these projects or created new opportunities to contribute hundreds of hours to Park Authority sites. FCPA continues to offer many of its environmental stewardship opportunities for youth to get involved in their local parks to include as permanent volunteers, as students for their community service hours and scouts for Eagle and Gold Award projects. FCPA encourages its volunteers, be they individuals, groups, students or scouts, to propose ideas of how they can help steward the parks.

3. NORTHERN VIRGINIA SOIL AND WATER CONSERVATION DISTRICT

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

4. FAIRFAX COUNTY DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL SERVICES

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

5. ENERGY ACTION FAIRFAX PILOT PROGRAM

Fairfax County has implemented the Energy Action Fairfax pilot program to provide ways for residents to learn about their energy consumption and how to reduce it through improved energy efficiency. The program has been narrowly focused and aimed at homeowners in Fairfax County, particularly those occupying single-family homes and townhouses. The program's direct outreach has included presentations at homeowner association meetings, small "audit parties" within selected communities and the distribution of informative brochures at events and fairs. The program also generated stories for local media and created a multi-faceted presence on the county

website (www.fairfaxcounty.gov/energyactionfairfax/) that includes tips sheets, checklists and short how-to videos. Groups or individuals may want to contact Energy Action Fairfax to discuss ways to support their educational efforts within a specific community.

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

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

7. CLEAN FAIRFAX

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

A key effort of the council is the sponsorship of spring and fall cleanups. These cleanups rely on volunteers who desire to clean up a certain area of the county. The council asks volunteers to plan their cleanup by selecting a site, gathering volunteers and setting a date and time. Clean Fairfax supplies all the necessary tools provided (gloves, trash bags, recycling bags, vests and safety tips) for a successful cleanup. A follow-up form is available on the Clean Fairfax website to track progress, tally volunteer hours and trash pickup tonnage. Last year, Clean Fairfax worked with over 1,200 volunteers at 85 assisted clean ups, picking up over 67,000 pounds of trash, on and around Fairfax County’s roads, parks and side streets. Clean Fairfax also organizes periodic clean-up projects around the Government Center, with Fairfax County employees and area businesses.

Clean Fairfax continues to organize and lead the Earth Day/Arbor Day event, now called SpringFest Fairfax, in partnership with the Department of Public Works and Environmental Services, the Fairfax County Park Authority, Fairfax Water, Fairfax Connector and Lorton Arts Foundation. Clean Fairfax now combines workshops and community service elements with this event. This past year at its new location at the

Workhouse Arts Center in Lorton, over 3,000 children and families attended this all day event. Other major projects for the upcoming year include outreach on reducing residents' compliance on plastic grocery bags, promoting small scale, backyard composting and providing services and workshops at Fairfax County Farmers Markets.

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

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

8. ALICE FERGUSON FOUNDATION

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

In April 2013, the foundation held its 25th annual Potomac River Watershed Cleanup. A total of 14,586 volunteers removed 312 tons of trash and debris from the region at 633 cleanup sites throughout Washington, D.C., Maryland, Virginia, West Virginia and Pennsylvania. The 312 tons of trash collected during the cleanup included 1,314 tires, 193,800 beverage containers, 27,200 plastic bags and 27,400 cigarette butts.

Other programs implemented by the foundation include:

- **Trash Free Potomac Watershed Initiative:** This is a program to reduce trash, increase recycling and provide education regarding trash issues in the watershed.
- **Potomac Watershed Trash Treaty:** As of summer 2012, this treaty commits 112 signers to achieving a "Trash Free Potomac by 2013" and to: support and implement regional strategies aimed at reducing trash and increasing recycling; increase education and awareness of the trash issue throughout the Potomac watershed; and reconvene annually to discuss and evaluate measures and actions addressing trash reduction. Fairfax County was one of the founding signers of the treaty in 2005.
- **Potomac Watershed Trash Summit:** The foundation convenes this meeting annually to provide a venue for key stakeholders to collaborate on strategies to

eliminate trash from waterways, communities, streets and public lands, including regional public policy, model best management practices, business actions and public education.

- **Enforcement:** The foundation worked in partnership with the Metropolitan Washington Council of Governments' Police Chief Committee on "Litter Enforcement Month," which provided a focus on litter-related crimes and raised awareness of the harmful effects trash has on communities and the environment.

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

<u>HOW TO REPORT ENVIRONMENTAL CRIMES OR CONCERNS IN FAIRFAX COUNTY</u>	
Type of Incident	<u>Phone Number</u>
<p><u>RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT</u> 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>911 TTY 711</p>
<p><u>LAND CLEARING; TREE REMOVAL; DUMPING OF FILL</u> To report the suspected illegal removal of trees, clearing of land, digging or dumping of fill dirt, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p>703-324-1300 TTY 711</p>
<p><u>SOIL EROSION</u> To report soil erosion from private properties or construction sites, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p>703-324-1300 TTY 711</p>
<p><u>GENERATION OF DUST FROM CONSTRUCTION, GRADING OR LAND CLEARING</u> Contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p>703-324-1300 TTY 711</p>
<p><u>CONSTRUCTION NOISE</u> To report construction noise outside between 9 p.m. and 7 a.m. or before 9 a.m. on Sundays and federal holidays, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p>703-324-1300 TTY 711</p>
<p><u>TRASH COLLECTION BETWEEN 9:00 P.M. AND 6:00 A.M.</u> Call the Department of Public Works and Environmental Services. If possible, provide descriptive information about the truck, such as color, truck number, and license plate number.</p>	<p>703-324-5230 TTY 711</p>
<p><u>SIGNS ON ROADS AND MEDIANS</u> If a sign on a road or median poses a safety hazard, call the Virginia Department of Transportation to have it removed. The County of Fairfax performs monthly collections of illegal roadway signs on certain designated roads. More information at www.fairfaxcounty.gov/code/signs.</p>	<p>1-800-367-7623 TTY 711</p>

Type of Incident	<u>Phone Number</u>
<p><u>SIGNS ON PRIVATE PROPERTY</u> There are restrictions for signs on private property. For more information contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p><u>703-324-1300</u> <u>TTY 711</u></p>
<p><u>POORLY MAINTAINED HOMES</u> To report problems including broken windows and gutters, junk or debris in yards and tall, uncut grass, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p>703-324-1300 TTY 711</p>
<p><u>OUTDOOR LIGHTING CONCERNS</u> To report problems with glare, overlighting or other issues, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p>703-324-1300 TTY 711</p>
<p><u>AIR POLLUTANTS</u> Air pollutants are emitted by stationary sources, such as power plants, gasoline service stations, and dry cleaners, as well as by mobile and area sources, such as from automobiles, trucks and other highway activities. This phone number is for the Virginia Department of Environmental Quality Northern Regional Office.</p>	<p>703-583-3800 After hours, call 1-800-468-8892 TTY 711</p>
<p><u>NO RECYCLING IN SCHOOLS</u> Section IX of the Fairfax County School Board’s Policy 8542 states that “Schools and centers will have mandatory recycling programs for paper products, cans, and bottles. Construction waste materials will be separated and recycled.” To report schools that are not recycling in accordance with this policy, contact the Fairfax County Public Schools Office of Facilities Management, Plant Operations Section. More information is available at: http://www.fcps.edu/fts/facmanagement/recycle.shtml</p>	<p>703-764-2459 TTY 711</p>
<p><u>HEALTH HAZARDS</u> For information and guidance on a suspected environmental hazard that may pose a public health risk, call the Health Department’s Division of Environmental Health. These hazards include unsanitary storage or disposal of waste; unburied dead animals; medical waste; insect infestations; and mosquito breeding sites.</p>	<p>703-246-2444 TTY 711</p>

I. Climate Change and Energy

Background

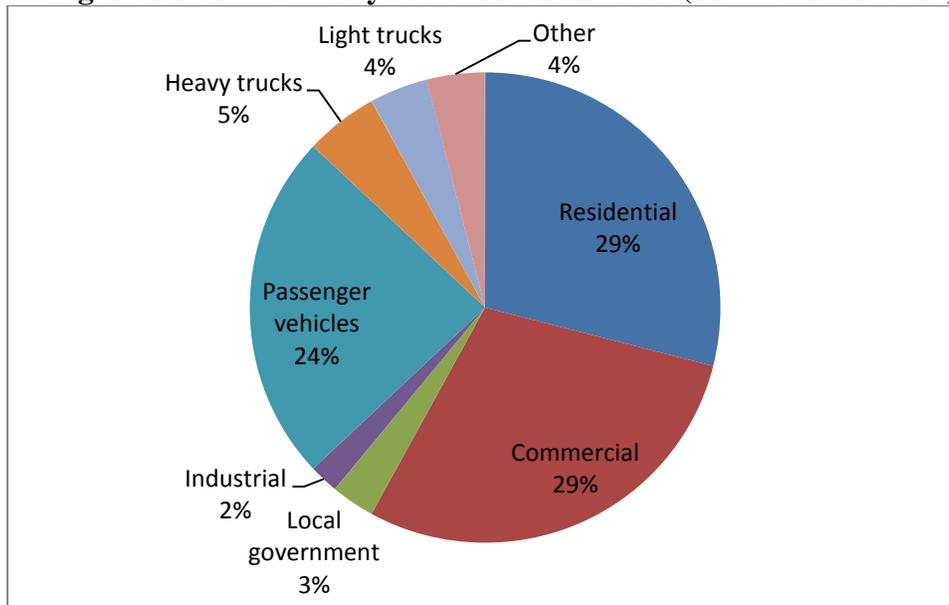
This chapter outlines work that is under way in Fairfax County to reduce greenhouse gas emissions and improve energy efficiency.

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 one 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 MMTCO₂e)¹



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

It should also be noted that Fairfax County is participating in a regional GHG inventory update that will facilitate aggregating GHG estimates and comparisons. 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. 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. 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/dispmethrvc.htm>.

Comments

1. EQAC is pleased that the county has hired an Energy Manager and that the county is realizing significant savings on energy since his arrival. EQAC looks forward to additional reporting and analyses that show opportunities for further efficiencies in energy conservation.
2. EQAC commends the county for updating 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 more 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 feels 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. While the county has promoted the incorporation of energy efficient certification, such as LEED at the Silver level or higher, EQAC recommends that the Board of Supervisors also promote periodic (e.g., bi-annual) evaluation of the GHG footprints for buildings and facilities. Such a step would be a natural follow up action to education and outreach that has been started in 2012 for residential energy use and that is envisioned for the commercial sector. While EQAC is encouraged that plans are being developed that would address this recommendation, additional work will be needed before this recommendation can be fulfilled. We are hopeful that the work of the Energy Manager will help with the implementation of this recommendation.
2. EQAC recommends that Fairfax County continue to fund a program to serve as follow-on to the Energy Action Fairfax. The EAF program completed a small number of outreach events and audits and developed a website and educational videos. The program educated county residents on energy conservation and greenhouse gas emission reductions. EQAC feels that it would be beneficial if the program was to continue. Given the significant efforts and expenditures made by the county to get this program started, it would be most cost-efficient to continue the program at this time rather than stop it and then try to re-start it at some future date.
3. Given the importance of the work of the private sector, the EQAC strongly supports the continuation of work started by the Chair's Energy Task Force be continued through the Energy Alliance.

References

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

II. Land Use and Transportation

Background

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

In May 2012, the county issued a report entitled *State of the Plan—An Evaluation of Comprehensive Plan Activities Between 2000-2010*. This report describes changes that have been happening to the Comprehensive Plan over the past 10 years. As changes are made to the Plan, the key metric available for growth is the *Plan potential*. This tracks the amount of space that can be built across the county. Since the county is close to build-out, with only 6.2% vacant space available, the Plan potential increases through redevelopment that allows bigger and taller developments. In the residential sense, this means more multi-family complexes. In the nonresidential space, it means higher office buildings with multiple uses. After reviewing the 284 plan amendments, the following themes arose:

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

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

In 2012, there were several accomplishments that change the way land use and transportation decisions are made. The most significant change was Fairfax Forward, a new approach to updating the Comprehensive Plan that holistically looks at particular areas and considers many factors and stakeholders in the process. The transition to Fairfax Forward is under way, and we are confident that the holistic approach is the right direction for the future. The county also published 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. This provides a single up to date record of the Comprehensive Plan.

Transportation Focus

Concurrent with land use build-out, transportation systems across the county and metropolitan region are becoming increasingly congested. During rush hour, most highways in the county receive a failing grade for peak hour level of service. Over the past 15 years, highway construction in the Washington area outpaced population growth, yet congestion has still increased.

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

These new funds give the county an opportunity to implement strategic projects that can have a long-term impact on the quality of life for residents. Discussions of transportation and the environment typically start with automobiles and the negative environmental impacts of cars. As congestion and density increase, however, single occupancy cars cannot be packed densely enough to move everyone about effectively. This is happening in Fairfax County, where the transportation discussions are increasingly focused on multi-modal and public transit options that provide a better balance of options suited for particular needs.

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

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

These mega projects, however, need to be balanced with regular maintenance of the existing infrastructure. An important policy identified by the Coalition for Smarter Growth is “fix-it-first,” to ensure that all state maintenance needs are met and to direct funding to fixing problems

on existing roads and transit prior to funding new construction.¹ This policy highlights the competition among transportation funding priorities. Projects that were once new require ongoing maintenance. New projects need to be judged by their ability to enhance the existing network and to maximize their potential to support comprehensive plans for growing into the future.

The U.S. Census tracks the modes used by people to get to work each day. The 2011 data show that of the 580,430 workers, 16 years and over, who live in Fairfax County:²

- 73.4 percent drove alone to work in a car, truck or van. (single-occupant vehicles)
- 8.9 percent of those workers commuted via carpool or vanpool. (high occupancy vehicles)
- 9.9 percent used Public Transportation (excluding taxicabs).
- 1.8 percent walked to work.
- 1.1 percent used other means.
- 4.8 percent worked at home. (*This number may not fully represent the true number of teleworkers in Fairfax County.*)

Across all modes, the mean travel time to work is 32.9 minutes. The Metropolitan Washington Council of Governments has noted³:

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

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

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

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

² Source: 2011 American Community Survey 1-year estimate. Area: Fairfax County.

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

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

Technology to Understand the County

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

Two applications that are very useful for constituents are:

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

My Neighborhood lets users know what features and facilities are available in and around their neighborhoods. (<http://www.fairfaxcounty.gov/gisapps/myneighborhood/default.aspx>)

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

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

- The GIS and IPLS capability—these are the technical systems that gather, move, manipulate and display information based on geographic location.
- Data is an expensive component that needs to be constantly updated as the county changes. There are many types of data available to represent physical attributes. The county has an

opportunity to add multi-spectral imagery this year, which opens up a new potential for understanding land use. EQAC recommends that the county continue to invest in data acquisition.

- Models and applications that can use the data to prepare for future scenarios and advanced visualization tools to help with decision making. The Visual Fairfax 3-D application is an example that leverages the GIS and data to help make informed decisions.

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

Recent Activities

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

Non-motorized and Public Transportation

Fairfax County's Pedestrian Program was started in 2002, following a spike in pedestrian fatalities. Through FY 2016, the board has designated over \$110 million in federal, state and county funding to construct over 300 high-priority bicycle and pedestrian improvement projects throughout the county. These include projects on major roadways, in activity centers, providing access to Metro stations and completing neighborhood missing links. From FY2008 through FY2013, the county has completed construction on 92 sites/segments; nine are under construction and another 70 are under design.

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

VDOT administers the Safe Routes to School Program, a federally funded program to promote safe walking and bicycling to school by students, including those with disabilities. The program offers funding grants for quick-start non-infrastructure activities; 16 elementary schools in Fairfax County have received grants.

A comprehensive inventory and study of all bus stops in Fairfax County identified undesirable bus stop conditions for priority action. The board identified \$2.5 million from the general fund and \$7.75 million in the 2007 Transportation Bond for improvements to the priority stops identified in the study. A total of 272 sites have been completed since the bus stop improvement program began. There are currently 122 sites in project development, 78 in design/land acquisition and 10 under construction.

In January 2013, FCDOT implemented the first of three new express bus routes to Tysons Corner, beginning with Burke Centre-Tysons Route 495. The second two Express routes, Route 493 from Lorton, and Route 494 from Springfield, launched in March 2013. Accompanying the launch of all three routes was an aggressive marketing campaign designed to target employees in Tysons who live in Burke, Lorton and Springfield, as well as to target local homeowners' associations and community groups.

Transportation Demand Management is also reducing single occupancy travel. As of summer 2013, 523 Fairfax County employers have implemented Transportation Demand Management programs; 244 of those are at level three or four, which means they have implemented benefits or programs that significantly help to reduce single-occupant vehicle trips. Outreach to businesses to encourage employee transportation benefits programs this year reached 651 new employers, impacting thousands of employees and commuters.

Dulles Rail Project

The Dulles Corridor Metrorail Project has completed over four years of construction along the extension between I-66 at the Dulles Connector Road and Wiehle Avenue in Reston.

Approximately 93 percent 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. The date of Silver Line, Phase 1 passenger service will be determined by the Washington Metropolitan Area Transit Authority. As of the date of preparation of this report, passenger service is projected to start in early 2014.

The I-95 Express Lanes Project

The Virginia Department of Transportation is partnering with Fluor-Transurban to develop a new I-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.

Revitalization Projects

The Comprehensive Plan recognizes that reinvestment in communities is necessary to maintain their vitality. The Fairfax County Office of Community Revitalization facilitates strategic redevelopment and investment opportunities in older commercial activity centers and across the county. In general, recent revitalization plans support compact, walkable, mixed-use centers which reduce the need for automobiles, increase access to transit and support other modes of transportation like bicycling and walking. Revitalization projects span the county, from McLean, to Springfield, and the Route 1 Corridor. Some recent project summaries include:

Tysons Urban Center

By 2050, the 2,100 acre Tysons Urban Center will be transformed into a walkable, sustainable, urban center that will be home to up to 100,000 residents and 200,000 jobs. Tysons is envisioned to become a 24-hour urban center where people live, work and play; where people are engaged with their surroundings; and where people want to be. The redevelopment of Tysons is being pursued in a manner that should reduce greenhouse gas

emissions in accordance with the Cool Counties Climate Stabilization Initiative adopted by the Fairfax County Board of Supervisors. Tysons has a unique opportunity to become a leader in environmental stewardship through protecting and improving the existing man-made and natural environments. Improvement through enhanced stormwater management and promotion of green buildings and a green network of parks and open spaces will all contribute to this stewardship.

Seven Corners

Fairfax County is undertaking a re-assessment of the Seven Corners area. A planning process is under way that provides the community with an opportunity to develop a vision for the future and to formulate recommendations and strategies for achieving the vision. After a series of public workshops in spring 2012, the Mason District Supervisor's office formed a community Task Force in fall 2012 to assist in the development of recommendations. The Task Force is expected to complete its final land use and transportation recommendations by spring 2014.

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 high occupancy, and new restaurants and shopping venues are opening. 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 since a 1998 planning effort) 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 and Electric Cars

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

EQAC commends the county for its commitment to green buildings and the Sustainable Development Policy for Capital Projects that requires building to achieve LEED certification. As of May 2013, the county had a total of 31 green building projects, 14 of which attained certification (12 under the LEED program and two under the Green Globes program). The other 17 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 seven complete projects exceeding the sustainability goal—these were awarded LEED Gold certification. We hope that the county will further its leadership with some projects striving for Platinum certification.

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

Comments and Ongoing Concerns

1. Progress on Major and Mega Projects

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

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

2. Improve Transit Utilization

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

3. Affordable Housing

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

- a. Continue to expand options for affordable housing by investing and partnering appropriately in locations that will need increased affordable options as the economy rebounds.
- b. Identify vacant offices and homes in locales with good transit options and coordinate with the real estate industry to aid in marketing those properties, thereby supporting new tenants with quality of life perquisites, improved commuting options and better residential/commercial or mixed use utilization.
- c. Coordinate with agencies and businesses to inform prospective/new workers of opportunities for desirable commutes and local housing amenities.

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 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:

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 as a new, holistic, and integrated approach to plan future development. These changes address the complexities of build-out and redevelopment and bring together the best information and tools to make wiser and more effective decisions.

Recommendations

- a. The new Fairfax Forward planning process is the right step forward to update our planning practices. With Fairfax Forward being such a new process for the county, EQAC recommends that:
 - (i) Fairfax Forward be identified as the preferred long term process to update with Comprehensive Plan and completely replace the APR process.
 - (ii) All the processes necessary to sustain Fairfax Forward be established now, rather than waiting for the current Work Program to be completed. This includes:
 - The mechanisms to continuously update and improve the Fairfax Forward program.
 - The process for identifying and prioritizing future work programs.
 - The means of engaging the public and encouraging meaningful public participation in the program.
- b. EQAC recommends that the county work to integrate social media into the planning process and other outreach efforts. This allows community participation through the Internet technologies and is more cost effective and far reaching than traditional media and outreach. The concept of a virtual town-hall meeting with community participation and instant feedback is now possible. Social media is very powerful for encouraging and educating people about alternative transportation options.
- c. EQAC recommends that the county leverage the geographic information system in comprehensive planning, that GIS technology be incorporated directly into the planning process and that the use of modeling be expanded to help understand future conditions and scenarios.
- d. EQAC recommends that the county continue to refine and formalize the process for revitalization, especially in mixed-use centers. There are several success stories across the county, such as Merrifield, that have been through a sustained transformation and have a wealth of lessons learned. Topics such as transportation modeling, land consolidation, public/private partnerships, mixed use development and transit connectivity apply across the county. Capturing these techniques into processes to reapply will increase the success of the new revitalization efforts. EQAC supports an evaluation of revitalization incentives and better understanding of incentive effectiveness.

- e. This year EQAC submitted a resolution urging that urban design standards be applied to mixed-use centers; EQAC reiterates this recommendation. The urban standards are driving the potential in Tysons Corner and can apply equally well to all transit areas, as well as Suburban Centers and Community Business Centers. Urban standards are designed to improve the environment, quality of life, balance and safety of a well-planned mixed-use place.

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 nonresidential data be comprehensively integrated into a GIS based life-cycle system. Residential data are effectively captured and available for many applications via the Integrated Parcel Lifecycle System. Nonresidential data exist in disparate systems, such as zoning and site planning, but have not been fully brought into the lifecycle planning process and cannot be used for applications such as forecasting or plan revisions.
- b. EQAC continues to recommend that the Comprehensive Plan be reflected and modeled in the GIS. Applications such as the internal Comprehensive Plan Potential and the Comprehensive Plan Amendment applications (used to gather data for the State of the Plan report) are very useful for understanding the real time status of the Comprehensive Plan. These applications should be available to the public on the Comprehensive Plan website.
- c. EQAC recommends that the county acquire new data sources and incorporate them into the business process. Planimetric data have proven to be both cost effective and transformative. The county has an opportunity to acquire multi-spectral imagery which also has the potential to greatly enhance our knowledge of the county for answering questions such as tree species identification and tree canopy density.

3. Transportation

This year the General Assembly passed legislation raising additional revenue for transportation. As the county enters a community dialogue to prioritize the allocation of these funds, EQAC recommends that the county provide priority for non-motorized/multi-modal transportation options. The county has been developing a comprehensive bicycle master plan that is ready for implementation. This complements requirements for pedestrian facilities in mixed-use centers. Proper implementation of the non-motorized/multi-modal master plan needs to include:

- Implementation of the bicycle master plan. Bicycle paths provide healthy and effective options to move about the county and between connected destinations.

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

III. Air Quality

Background

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

Recent Activities

Budget Impacts

Due to the overall budget constraints in the county over the past several years, the Board of Supervisors made significant reductions in the budget for the Health Department, which ended the county's Air Quality Monitoring Program. 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, has 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 National Ambient Air Quality Standards for major criteria pollutants such as ozone, fine particulate matter (referred to as PM_{2.5}, or particulate matter less than 2.5 microns in diameter), Nitrogen Dioxide, Sulfur dioxide and lead, some or all of which may have impacts on Fairfax County.

Atmospheric Ozone: In March 2008, EPA tightened the eight-hour ozone NAAQS from 0.08 ppm to 0.075 ppm for both primary and secondary ozone standards, but the standard was challenged by a coalition of environmental and health advocacy groups. On January 6, 2010, EPA made a proposal to strengthen the eight-hour “primary” ozone standard, designed to protect public health, to a level within the range of 0.060-0.070 ppm. EPA also proposed to strengthen the seasonal “secondary” standard, designed to protect sensitive vegetation and ecosystems, including forests, parks, wildlife refuges and wilderness areas, to a level within the range of 7-15 ppm-hours (cumulative peak-weighted index). On September 2, 2011, EPA announced the withdrawal of the proposed rule due to presidential mandate. EPA is expected to publish an update to the 2008 ozone standard in 2014.

Fine Particulate Matter--PM_{2.5}: Effective December 14, 2009, EPA announced that the Metropolitan Washington non-attainment area for the 1997 PM_{2.5} NAAQS had attained the 1997 PM_{2.5} NAAQS. This determination was based on 2004 - 2006 data; the region has continued to meet the attainment standard to date and to show improvement.

The Technical Advisory Committee of the Metropolitan Washington Air Quality Committee developed a redesignation request and maintenance plan for this standard, which included new interim and out-year mobile source budgets. DEQ submitted these documents to EPA on June 3, 2013. These documents must be approved by EPA before the area will be considered attainment for the 1997 PM_{2.5} NAAQS.

On September 21, 2006, EPA promulgated a more stringent PM_{2.5} standard, a daily standard of 35 µg/m³ and an annual standard of 15 µg/m³. On October 8, 2009, EPA designated all of Virginia, including Northern Virginia, as attaining this standard.

On December 14, 2012, EPA finalized an update to the PM_{2.5} NAAQS, setting the annual health standard at 12 µg/m³. The Northern Virginia/Metropolitan Washington D.C. area is complying with this new standard, and the area is expected to be designated as being in attainment when designations and classifications are published in the 2014 timeframe.

Nitrogen Dioxide: On January 22, 2010, EPA strengthened the health-based NAAQS for NO₂ to a new one-hour NO₂ standard of 0.10 ppm. The standard also requires monitoring that occurs near roads, community-wide NO₂ concentrations and low income or minority at-risk communities. This level will protect people against adverse health effects associated with short-term exposure to NO₂, including respiratory effects. It became effective on April 12, 2010. EPA also retained the annual average NO₂ standard of 0.053 ppm.

Sulfur dioxide: On June 2, 2010, EPA strengthened the primary NAAQS for SO₂ 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. EPA revoked the two existing primary standards of 0.14 ppm evaluated over 24-hours and 0.03 ppm evaluated over an entire year because these standards will not add an additional public health benefit. All monitoring data for the Commonwealth of Virginia show compliant measurements. EPA did not revise the existing secondary SO₂ NAAQS of 0.50 ppm over a three-hour average that is set to protect public welfare, including effects on soil, water, visibility, wildlife, crops, vegetation, national monuments and buildings. EPA assessed the need for changes to the secondary standard under a separate review. Under the new standard, facilities with significant emissions of SO₂, many of which are electrical generating units, will be required to demonstrate compliance with the standard no later than 2017.

Lead: On November 12, 2008, EPA issued a final rule that revised the primary and secondary NAAQS for lead and associated monitoring requirements. The effective date of this standard was January 12, 2009. The primary standard is set at 0.15 µg/m³ (in a rolling three-month average) to protect health. A secondary standard is set at the same level to protect the public welfare, including the environment. The revised standards are 10 times more stringent than the previous standards and will improve health protection for at-risk groups, especially children. This decision marked the first time the lead standards have changed in 30 years. By October 2011, EPA was to have designated areas that have to take additional steps to reduce lead air emissions. States will have five years to meet the new standards after designations take effect.

Air Quality Status in Northern Virginia

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

Update on County and Regional Air Quality Data

Ground-level Ozone

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

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

Monitors in the metropolitan region recorded data on 21 days during the 2012 ozone season when ozone values were above the 0.075 ppm standard. Various studies have shown that, during certain meteorological episodes, pollution from outside the Washington metropolitan area can cause ozone exceedances in the area. The design value for 2012 (2010-2012) is 87 ppb, above the 1997 ozone standard of 85 ppb and above the current standard of 75 ppb. Further information about ozone measurements is provided in the long version of this report, available on the EQAC website.

With the region's design value above both ozone standards (1997 and 2008), the MWAQC Technical Advisory Committee is preparing a Reasonable Further Progress plan in anticipation of not meeting the 2015 attainment deadline for the 2008 standard.

Additional Monitors for NO₂ and Other Pollutants

Virginia DEQ provided an update on the status and plans for conducting monitoring for NO₂ in Fairfax County, noting that the agency is working to install a new NO₂ monitor, to be used to assess compliance with the roadside monitoring aspect of the revised NAAQS for NO₂. There are plans to install three new NO₂ 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 2015.

DEQ may also install additional roadside monitors for carbon monoxide and PM_{2.5}, 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. The Virginia Department of Transportation provided information about the daily vehicle miles traveled in Fairfax County, showing that slightly less than 27 million vehicle miles were traveled daily in 2012, a slight decrease from the number for 2011.

The Fairfax County Department of Transportation provided the following information (based on 2011 data) for the 580,430 workers, 16 years and over, who live in Fairfax County:

- 73.4 percent drove alone to work in a car, truck or van.
- 8.9 percent of those workers commuted via carpool or vanpool.

- 9.9 percent used public transportation (excluding taxicabs).
- 1.8 percent walked to work.
- 1.1 percent used other means.
- 4.8 percent worked at home (this number may not fully represent the true number of teleworkers in Fairfax County).
- Mean travel time to work: 32.9 minutes.

Alternatives to Use of Motor Vehicles

The Fairfax County Board of Supervisors has directed the Fairfax County Department of Transportation to lead the effort to improve bicycle and pedestrian safety and mobility, including constructing bicycle and pedestrian improvements in high-priority areas of Fairfax County. Through FY 2016, the board has designated over \$110 million in federal, state and county funding to construct over 300 high-priority bicycle and pedestrian improvement projects throughout the county. These include projects on major roadways, in activity centers, providing access to Metro stations and completing neighborhood missing links. From FY 2008 through FY 2013, the county has completed construction on 92 sites/segments, nine are under construction and another 70 are under design. These types of initiatives, along with those noted below for VDOT, can serve to reduce the potential for the county to continue to have a nonattainment status for ozone.

VDOT administers the Safe Routes to School Program, a federally funded program to promote to children, including those with disabilities, to walk and bicycle safely to school. The SRTS Program offers funding grants for three different project types: (1) Infrastructure Projects; (2) Activities and Programs Projects; and (3) Quick Start Non-infrastructure Activities. On the latter funding program, 16 elementary schools in Fairfax County have received a grant. Further information is available at: www.viriniadot.org/programs/ted_Rt2_school_pro.asp.

VDOT continues to ensure that biking remains an integral component of Virginia's multimodal transportation system; it is a local sponsor of Bike to Work Day events promoted by the Washington Area Bicyclist Association and Commuter Connections. Efforts to make alternative transportation modes (biking and walking) safer and more attractive are critically important to addressing the air quality issues in the Washington metropolitan area and should be commended. Additional resources about bicycling and walking are available on VDOT's website at: www.viriniadot.org/travel/nova-mainBicycle.asp

Public Agency Responsibilities

Although compliance with National Ambient Air Quality Standards and resulting air quality management responsibilities is a function of federal law, in Fairfax County and in other major metropolitan areas in Virginia, these responsibilities have been split between the Commonwealth of Virginia and the regional lead planning organization as defined by Section 174 of the Clean Air Act. Fairfax County holds a seat on, and the county staff is required to support, the lead planning organization for the metropolitan Washington area, the Metropolitan Washington Air Quality Committee. Members of MWAQC and all lead planning organizations are appointed by the governors of affected jurisdictions to represent areas included in air quality planning

requirements. MWAQC works with state departments of transportation and transit providers in identifying transportation needs and priorities. The Transportation Planning Board makes transportation investment decisions for the metropolitan area and, by default, for the individual regions encompassed within MWAQC.

MWAQC FY 2014 Work Program

MWAQC and the states will continue to lay the groundwork for meeting the 2008 ozone NAAQS, including developing a draft rate of progress plan for the Washington, DC-MD-VA region.

Stewardship Opportunities

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

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

Small Changes Make A Big Difference

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

At Home:

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

At Work:

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

On the Road:

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

Comments

1. EQAC performed extensive follow up with DEQ and others about Fairfax County’s plans to cease the operation of the four ozone air quality monitors and has expressed concerns about the elimination of those ozone monitors. In April 2010, EQAC provided a recommendation that the Fairfax County Board of Supervisors provide comments to DEQ regarding its Annual Air Monitoring Network review. Specifically, EQAC recommended that the Board of Supervisors request that DEQ include one or more of the existing Fairfax County ozone monitors in its future monitoring plans. Given the historically higher level of ozone concentrations at the Mount Vernon station, as compared to the other county-run stations, EQAC recommended that the Board of Supervisors request that DEQ include the Mount Vernon station in the regional monitoring plans. The board referred this issue to its Legislative Committee, which discussed the matter in September 2010; EQAC’s recommendation was not provided to DEQ. EQAC plans to continue to follow this issue over the course of the next several years as additional data become available.
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 encourage county residents and others to take voluntary actions to improve air quality.

3. EQAC supports the efforts of Fairfax County, VDOT, and the Commonwealth Transportation Board to provide funding to programs that further the availability and use of non-motorized transportation alternatives for Fairfax County. This includes the efforts by the Fairfax County Board of Supervisors, which has directed FCDOT to lead the effort to improve bicycle and pedestrian safety and mobility, including constructing bicycle and pedestrian improvements in high-priority areas of Fairfax County. Through FY 2016, the board has designated over \$110 million in federal, state and county funding to construct over 300 high-priority bicycle and pedestrian improvement projects throughout the county. These include projects on major roadways, in activity centers, providing access to Metro stations and completing neighborhood missing links. Further, efforts by VDOT to dedicate two percent of its road paving funds to adding shoulders on Northern Virginia roadways at locations that will improve bicycle safety and travel are appreciated.

Recommendations

None.

IV. Water Resources

Background

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

Recent Activities

Environmental Improvement Program

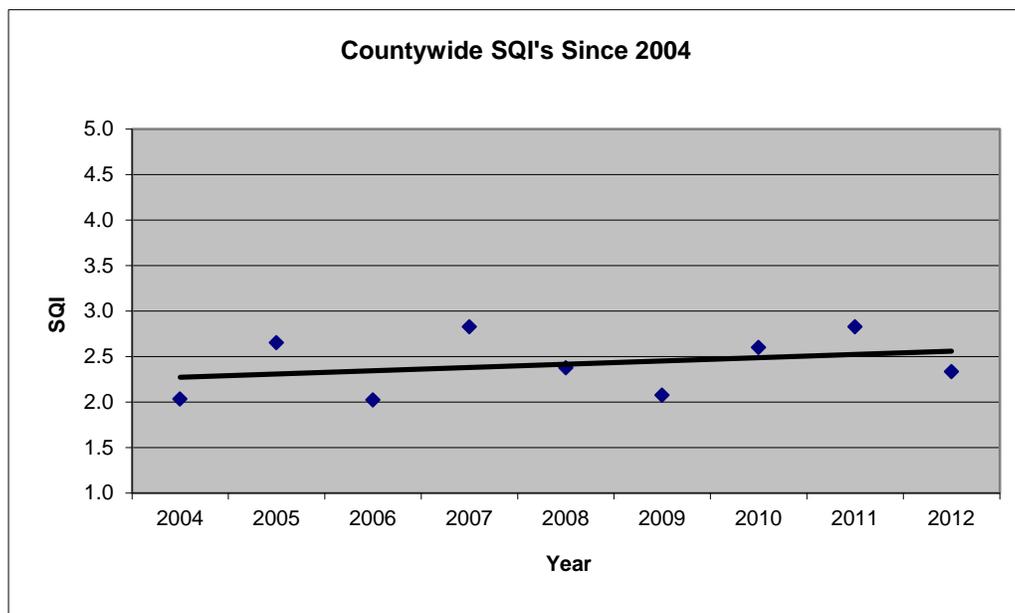
- The Environmental Agenda (Environmental Excellence for Fairfax County: 20-Year Vision) adopted by the Board of Supervisors in 2004 continues to have significant impacts on water quality protection and environmental stewardship efforts in the county. In 2006, in response to the Board of Supervisors' 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 2012 Fairfax Stormwater Status Report

http://www.fairfaxcounty.gov/dpwes/publications/stormwater/2012_stormwater_status_report_final.pdf or the detailed version of this chapter, available on-line at www.fairfaxcounty.gov/eqac/.

- A total of 52 sites were sampled in 2012: the 39 sites randomly selected in Fairfax County plus 11 Piedmont reference locations in Prince William National Forest Park and two Coastal Plain reference sites in the Kane Creek watershed of Fairfax County. Of the 39 sites selected, 19 were randomly sampled for fish. Results from the 39 randomly selected sites suggest that approximately 62 percent of the county’s waterways are in “Poor” to “Very Poor” condition based on a decrease in biological integrity of streams and 58 percent are in “Poor” to “Very Poor” based on fish sampling in 15 streams. This is a decrease in the biological ratings compared to previous years. This may be a result of the random site selection (it is possible for a group of lower quality sites to be chosen in some years). Over the past nine years, a small increase in the benthic Index of Biological Integrity scores has emerged. As future sampling results are added, a trend in biological integrity should begin to emerge; a summary of trends to date in the countywide Stream Quality Index is presented below.



Source: 2012 Fairfax County Stormwater Status Report

- In 2012, 42 percent of Fairfax County’s bacteria monitoring locations were consistently below VDEQ’s standard of 235 units per 100 ml of water. Fairfax County concurs with officials from VDEQ and the Virginia Department of Health, who caution that it is impossible to guarantee that any natural body of water is free of risk from disease-causing organisms or injury.

Dry and Wet Weather Screening

- In 2012, the county selected 106 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 44 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, 23 required follow-up investigations because they exceeded the allowable limit for at least one pollutant. Of the 23 sites that required a retest, 21 have been completed. Upon retesting these sites, 12 continued to exceed the screening criteria, and further testing was conducted in an attempt to track down the source. This track down procedure consisted of using the county's GIS mapping system. A map of the county's storm drainage system was printed from the GIS and used to track the storm network upstream of each site. Staff recorded observations of flowing water and land use, and tested the water where flow was found. This procedure was followed up the network of storm sewer pipes until the source was found or there was no flowing water.

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 and implemented.
- In 2012, the county and its partners continued to implement stormwater management-related capital projects, including ten flood mitigation projects, more than 16 stormwater management facility retrofits, seven low impact development projects and three stream restoration and stream stabilization projects.

Gunston Cove Study

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

- First, phytoplankton algae populations in Gunston Cove have shown a clear pattern of decline since 1989.
- Accompanying this decline have been more normal levels of pH and dissolved oxygen, increased water clarity and a virtual cessation of cyanobacteria blooms such as *Microcystis*.
- The increased water clarity has brought the rebound of submerged aquatic vegetation, which provides increased habitat value for fish and fish food organisms. The SAV also filters nutrients and sediments and itself will inhibit the overgrowth of phytoplankton algae.
- This trend is undoubtedly the result of phosphorus removal practices at the Noman M. Cole, Jr. Pollution Control Plant, which were initiated in the late 1970s. 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 have not been finalized.
- Accotink Creek TMDL
 - While sediment was identified as the pollutant of concern that is causing the benthic impairment, EPA used flow as a surrogate for sediment in establishing the TMDL. The TMDL called for a 48.4 percent overall reduction in in-stream flows in Accotink Creek. Utilizing a flow approach to the TMDL would not stabilize or reverse the evolution that has already occurred in Accotink Creek. This evolution has taken place in response to increased urbanization and development in the watershed, and flow reduction alone will not reverse its impacts or address the impairment that originally triggered development of the TMDL. Stream restoration is also required in order to stabilize the eroded banks, reconnect the stream to its floodplain, reduce in-stream erosion and restore habitat. In July 2012, the county and the commonwealth challenged the flow TMDL in U.S. District Court. The court issued its decision in January 2013 that EPA is authorized to regulate pollutants using TMDLs, and that sediment is a pollutant, but flow is not. The flow TMDL was remanded to EPA for reconsideration. It is important to note that the court’s decision applies only to the use of non-pollutants (such as flow) as surrogates for pollutants (such as sediment) in TMDLs. It is not a blanket prohibition on the regulation of stormwater.

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

- In 2012, Fairfax County inspected 374 of the 1,541 county-owned stormwater management facilities and 664 of the 3,720 privately maintained stormwater facilities.
- In 2012, the Maintenance and Stormwater Management Division of DPWES continued its maintenance program for county stormwater management facilities. Maintenance can include repairs to stormwater management facility structures and removal of sediment. During 2012, the county cleaned and/or mowed 1,289 dam embankments, including 50 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 3,856 work orders, including: un-blocking stormwater management ponds and pipes to avoid flooding or damaging infrastructure; channel and pond cleaning; mowing; weeding; planting; outfall

repair; stream restoration and bank stabilization; trail maintenance; graffiti removal; snow removal; sign repairs/installation; and responses to complaints

- The 2012 Fairfax County Stormwater Status Report provides updated information on the number and types of public and private stormwater management facilities in the county as well as detailed information about the types of projects being undertaken to improve and protect water quality.
- In 2012 MSMD continued implementation of its infrastructure inspection and rehabilitation program. Staff inspected 2,200 pipe segments and 4,000 storm structures with video and photo documentation. Under the rehabilitation program, more than 50 miles of pipe were videoed, documenting the existing structural and service conditions of the interior of the storm system. These efforts represent 292 miles, or 23 percent of the storm drainage network, being screened through walking and/or video documentation for obvious deficiencies. In addition, more than 5,100 feet of storm pipe in the county's inventory were rehabilitated or repaired through replacement or by lining entire pipe segments using cured-in place pipe lining methods.

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 2012, a total of 710 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 2012, 26,617 E&S inspections were performed through the county's Alternative Inspection Program on all sites under construction. Those E&S inspections represented 54.7 percent of the 48,622 total site inspections that were performed by Site Development and Inspection Division personnel. The site inspections total also included 2,160 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 2012, SDID wrote 605 "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 69 violations in 2012 and 54 of those were later cleared. The remaining 15 violations are extended until the required corrections are made or court action is initiated. SDID held 202 escrows for either landscaping or stabilization issues.

The Land Disturbance and Post Occupancy Branch of DPWES-Land Development Services investigates complaints alleging violations of the Fairfax County's Erosion and Sediment Control Ordinance (Chapter 104). The branch also investigates complaints alleging violations of the county's Chesapeake Bay Preservation Ordinance (Chapter 118). In 2012,

the branch received 247 total complaints. In most instances there was either no violation or there was timely compliance if a violation was cited. The branch issued 24 Resource Protection Area violation notices and 38 land disturbance violation notices. The branch undertook 20 criminal proceedings to ensure compliance, with two proceedings resulting in fines issued by the court.

Illicit Discharges

- In 2012, the Fire and Rescue Department's Hazardous Materials Investigative Services section received 552 complaints involving hazardous materials. The actual spill, leak, or release of hazardous materials into the environment occurred in 231 of these cases. Of these 231 releases, 168 involved petroleum based products. There were 31 hydraulic oil spills/releases (mostly from trash trucks), 12 gasoline releases, 51 fuel oil or home heating oil releases and 33 diesel fuel releases. The remainder consisted of a variety of materials including, paint, antifreeze, cleaners, various gases, various chemicals and mercury. There were 28 incidents where the release of hazardous materials impacted storm drains or surface waters. The section tracked 35 sites for both short and long term remediation. The vast majority of these releases were small scale with the exception of an overturned gasoline tanker truck that caught fire and released approximately 8,500 gallons of gasoline into a storm drain system.

On-site Sewage Disposal Systems

- An estimated 21,371 homes and business are served by on-site sewage disposal systems in Fairfax County. Over 700 of these systems are alternative sewage disposal systems, which require regulating the operation and maintenance on the part of the home owner. The county's Health Department reported that in 2012, 107 New Sewage Disposal Permits were issued for single family residences. There were 86 new sewage disposal systems installed—41 (47.7 percent) were alternative type systems and 45 (52.3 percent) were conventional systems. There were 792 sewage disposal system repair permits issued; repairs ranged from total replacement of the system to minor repairs such as broken piping or pump replacement. There were 5,466 septic tank pumps outs.
- The Health Department mailed 14,957 flow diversion valve reminder notices in 2012. The notices are sent to homeowners on the anniversary of the installation of their septic system to remind them to turn their flow diversion valve once a year. It reminds them to pump out their septic tank every three to five years.
- In 2012, 1,467 non-compliance letters were mailed to owners of homes that have not pumped out their septic tank during the five year period required by County Code. If homeowners fail to comply, a follow-up letter is mailed to them informing them that action will be taken under the regulations to insure their septic tank is pumped out as required.

Sanitary Sewer System Maintenance

- The Sanitary Sewer Infiltration Abatement Program conducts wastewater flow measurements and analysis to identify areas of the wastewater collection system with excessive inflow/infiltration problems; closed circuit television is used to inspect trunk sewer mains in an effort to specifically identify defective sewer lines for repair and rehabilitation. In 2012, 208

miles of old sewer lines and approximately 12 miles of new sewer lines were inspected, resulting in the identification of sanitary sewer lines and manholes needing repair and rehabilitation. In 2012, approximately 31 miles of sanitary sewer lines were rehabilitated, bringing the total length of sewer lines repaired over the past ten years to approximately 214 miles.

- The Sanitary Sewer Extension and Improvement Program addresses pollution abatement and public health considerations and provides sanitary sewer services to areas identified by the Department of Health as having non-repairable or malfunctioning septic systems. In 2012, four Extension and Improvement projects were completed consisting of approximately 5,360 feet of eight-inch gravity sanitary sewer, approximately 3,863 feet of 1.5-inch to 2.5-inch diameter low-pressure sanitary sewer (including six individual grinder pumps) and sanitary sewer connections for 68 existing homes and three vacant properties.

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 54,986 billion gallons of drinking water in 2012.
- 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 2012 Water Quality Report is available for review on the Fairfax Water website at <http://www.fairfaxwater.org/water/water.htm>.
- Fairfax Water has been testing for lead and copper in customer tap samples in accordance with EPA's lead and copper rule since 1992 and has consistently tested below the Action Level established in that rule. In the most recent tests in 2008, the 90th percentile value for lead was 0.77 part per billion compared to the EPA action level of 15 ppb. For copper, the 90th percentile value in 2008 was 0.064 part per million compared to the EPA action level of 1.3 ppm. Additional information on these programs and more can be found at: www.fairfaxwater.org. Additional information on other monitoring programs can also be found in the detailed version of the Water Quality Chapter of this report, available for review at www.fairfaxcounty.gov/eqac.
- 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 2014, will include water supply projections for the next 30 years. The draft Final Plan was delivered to the Department of Environmental Quality in March 2012 for the commonwealth's review prior to submission to the State Water Control Board. See preliminary document <http://www.novaregion.org/index.aspx?NID=1214>.

- There are approximately 13,930 single family residences and businesses in Fairfax County that are served by individual well water supplies. The Health Department permits and inspects all new well construction, existing well repairs and well abandonments. In 2012 there were 149 new well permits, 44 well repairs and 137 Water Well Abandonments issued. There were 44 Geothermal Well Permits issued, over 50 percent of the permits issued.

Stewardship

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

- Medicines, paints and other toxics should NOT be flushed down toilets and should NOT be dumped down storm drains. Instead, they should be taken to one of the county's household hazardous materials collection sites. For a list of common household hazardous materials and how to dispose of them, go to <http://www.fairfaxcounty.gov/dpwes/trash/disphhw.htm>.
- Septic systems must be pumped out every five years—it's the law! Residents with questions or with problems with their septic systems should call the Fairfax County Health Department at 703-246-2201, TTY 711.
- Residents are encouraged to get soil tests for their yards before fertilizing and then to apply fertilizers and pesticides responsibly. Grass should not be cut to the edge of a stream or pond; instead, a buffer should be left to filter pollutants and provide wildlife habitat.
- The Northern Virginia Soil and Water Conservation District can advise homeowners on problems with ponds, eroding streams, drainage, problem soils and other natural resource concerns. More information about managing land for a healthier watershed is available from the NVSWCD publications "You and Your Land, a Homeowner's Guide for the Potomac River Watershed" (<http://www.fairfaxcounty.gov/nvswcd/youyourland/>) and the "Water Quality Stewardship Guide" (<http://www.fairfaxcounty.gov/nvswcd/waterqualitybk.htm>).
- Advice regarding drainage and erosion problems in yards can be provided by the technical staff of the Northern Virginia Soil and Water Conservation District. NVSWCD can assess the problems and advise on possible solutions. Interested parties can send an e-mail to NVSWCD at <https://www.fairfaxcounty.gov/contact/mailform.aspx?ref=9990> or call 703-324-1460.
- There are numerous opportunities throughout the year to participate in stream cleanups, storm drain labeling, volunteer water quality monitoring and tree planting projects. Interested parties can send an e-mail to NVSWCD at <https://www.fairfaxcounty.gov/contact/mailform.aspx?ref=9990> or call 703-324-1460.
- EQAC also commends the efforts of the Alice Ferguson Foundation and encourages residents, employers and employees in Fairfax County to participate in these initiatives. Visit the foundation's website at www.Fergusonfoundation.org for further information.

- Sediment runoff from construction sites can be reported to Fairfax County's Code Enforcement Division at 703-324-1937, TTY 711; e-mail reports can also be filed at <https://www.fairfaxcounty.gov/contact/mailform.aspx?ref=70003>.
- Improper disposal of motor oil, paint or other materials into streams or down storm drains should be reported through a phone call to 911. This is particularly important if the substance being dumped can be identified as motor oil or another toxic substance but also applies to any other substance; assumptions regarding the contents of the materials should not be made. Callers to 911 should be prepared to provide specific information regarding the location and nature of the incident. If the person dumping materials into the stream or storm drain has a vehicle, the tag number should be recorded.
- Storm drains are for stormwater only, NOT motor oil, paint or even grass clippings.
- If dumping is not witnessed but is instead suspected, and if no lives or property are in immediate danger, the suspected incident can be reported to the Hazardous Materials and Investigative Services Section of the Fire and Rescue Department at 703-246-4386, TTY 711. If it is unclear as to whether or not there may be a danger to life or property, 911 should be called.
- A more comprehensive table addressing how to report environmental crimes is provided immediately following the Scorecard section of this report.

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

- As required by of the Code of Virginia, beginning July 1, 2014, local governments will become the Virginia Stormwater Management Program authorities. Prior to this date, this responsibility belonged to the Virginia Department of Conservation and Recreation. The commonwealth will maintain oversight of local programs to ensure that all applicable state regulations are applied and enforced. This oversight responsibility will now lie with the Virginia Department of Environmental Quality. Any town that does not adopt its own stormwater program will be subject to the program of the county within which that town is located.
- Each county and city in northern Virginia is preparing a stormwater management ordinance consistent with the requirements of Virginia's stormwater regulations. The VSMP General Permit for Discharges of Stormwater from Construction Activities will continue to be the vehicle by which land disturbing activities are monitored for compliance with the provisions of the Virginia Stormwater Management Act and associated regulations. While the local jurisdiction will administer the VSMP, developers/contractors will continue to obtain VSMP permit coverage *from the state* following the process outlined on the fact sheet.
- The *Virginia Stormwater Management Handbook* is being updated to reflect the new regulations and design criteria. The *Handbook* will be available online, by chapter. Until the final version is published, practitioners can access approved Best Management Practice specifications at the Virginia Stormwater BMP Clearinghouse: <http://vwrrc.vt.edu/SWC/PostConstructionBMPs.html>. Under the old

stormwater regulations, specific BMP utilization within a jurisdiction was primarily at the discretion of the locality. Under the new regulations, the BMP must be listed on the clearinghouse. Also, the VSMP permit will require fully enforceable maintenance agreements for stormwater controls (structural and non-structural best management practices). The agreements will be deeded to run with the land, and allow for inspections and maintenance to occur that will ensure the long-term function of stormwater controls.

- Also, the Virginia Soil and Water Conservation Board approved new stormwater management regulations. Compliance with these new rules will be required by the 2014 VSMP permit and the localities’ Stormwater Management Ordinances, both of which take effect July 1, 2014. The main regulatory changes are summarized in the table below:

New Stormwater Management Regulations: Changes to Stormwater Technical Criteria		
Criteria	Old Regulations	New Regulations
Land Use	Impervious cover only	Impervious cover + Forest/Open Space + Managed Turf
Event	0.5 inches of runoff from the impervious cover only	1.0 inches of rainfall from the whole site
New Design Criteria	Average land cover condition/technology based	0.41 pounds per acre per year Total Phosphorus
Redevelopment	10 percent reduction in Total Phosphorus	Land disturbance of less than one acre: 10 percent reduction in Total Phosphorus
		Land disturbance of one acre or more: 20 percent reduction in Total Phosphorus
Compliance	Simple Method	Runoff Reduction Method
Water Quantity	Varied	Criteria for: manmade conveyance systems; restored conveyance systems; and natural conveyance systems

- The Stormwater Management Regulations contain the following noteworthy provisions regarding grandfathering:

Projects may proceed through construction under the old technical criteria for stormwater management, if one of several circumstances applies. These are:

- Projects for which there is plan approval status dated July 1, 2012 or before, but for which no VSMP permit is obtained before July 1, 2014.
 - Documentation may take the form of a locality approved plan, plat, zoning approval or other approved document determined permissible under the localities ordinance.
 - Any modification to said locality-approved document may call into question the eligibility of the project to be grandfathered.
 - Construction must be complete by June 30, 2019.
- Projects with government bonds or public debt financing before July 1, 2012.
- Projects that obtain 2009 VSMP permit coverage before July 1, 2014 have two five-year permit cycles (until June 30, 2024) to be completed, if permit coverage is maintained.

Lifting the ban on Uranium Mining

There has been in place in Virginia a ban on uranium mining statewide since 1982. However there are now legislative or/and gubernatorial efforts underway to lift the moratorium.

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

The Chmura study indicates that the adverse economic impact under the worst case scenario is significantly greater than corresponding positive impact in the best case scenario. It appears from these studies that future substantive failure of a uranium mining site would require significant economic support from all the residents of Virginia for remediation and would potentially result in contaminated water resources for very significant periods of time.

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

The Occoquan Reservoir is one of the county's primary sources of drinking water; and the quality of this drinking water source can be adversely affected by activities occurring within its watershed. There are serious concerns about the lifting of the moratorium in light of numerous

and substantial questions and concerns regarding the potential for adverse environmental impacts to Virginia and the Occoquan Reservoir if uranium was to be mined or milled within the Occoquan watershed.

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

Notable and Ongoing Issues

1. EQAC commends the county for developing and adopting amendments to the Public Facilities Manual's provision for adequate drainage that require analysis of adequacy of outfalls during the construction phase. This is another enforcement tool that will protect streams during the construction phase. However, EQAC cannot over-emphasize the importance and need for increased monitoring of predevelopment stormwater management controls and for enforcement action to ensure inadequate controls are corrected prior to construction and, if necessary, during construction
2. EQAC continues to support the full funding and implementation of the comprehensive countywide watershed management program. EQAC strongly endorses the ongoing work of county staff on the watershed planning and public outreach efforts and the comprehensive stream monitoring program. EQAC continues to support continued assessments of watersheds and development of a stream protection and restoration program that has adequate sustainable funding. EQAC continues to stress that equal importance should be devoted to environmental protection, restoration and monitoring as compared to infrastructure improvement and maintenance.
3. EQAC commends the county for its existing stream protection requirements for perennial streams. EQAC thanks the Board of Supervisors for its efforts to protect intermittent and headwater streams by the establishment of protective buffers. While the end result of the inquiry was NOT to move forward, the process did heighten awareness of the importance of intermittent streams.
4. EQAC is pleased to note the MS4 requirement to develop a long-term watershed monitoring program to verify the effectiveness and adequacy of stormwater management goals and identify areas of water quality improvement or degradation is being implemented. While EQAC is pleased to note the long term monitoring of several sites, we also understand that a comprehensive countywide program to monitor effectiveness can be cost-prohibitive.
5. Given the anticipated increase in the number of small individual low impact development facilities that will be installed throughout the county, EQAC recognizes that the county will have an additional challenge of developing a program to track, inspect and ensure adequate maintenance of these LID facilities.

6. There has been in place in Virginia a ban on uranium mining statewide since 1982. However there are now legislative or/and gubernatorial efforts underway to lift the moratorium. At this time, the only uranium deposits that appear to be potentially economically viable for mining are in Pittsylvania County, where mining would have no impact on Fairfax County. The concern exists, though, that there are other uranium occurrences in Virginia and that past uranium mining lease agreements were established in Fauquier County, within the Occoquan watershed.

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

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

Comments

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

The Board of Supervisors' adoption of the FY 2014 Stormwater Service District tax rate of 2.0 cents has allowed Stormwater Management to increase stormwater infrastructure replacement, create a more comprehensive low impact development maintenance program and rehabilitate a number of older stormwater management dams as well as other critical components. Much of the stormwater infrastructure in Fairfax County is reaching the end of its life cycle, and as the system ages it will be critical to maintain adequate inspection and rehabilitation programs to avoid infrastructure failures and ensure the functionality of stormwater treatment systems. It is also critical for Stormwater Management to implement cost effective solutions such as trenchless pipe rehabilitation technologies, naturalized stormwater management facilities and partnerships with other county agencies such as Fairfax County Public Schools and the Fairfax County Park Authority to help protect and improve local streams.

The county's existing stormwater conveyance infrastructure includes over 1,600 miles of pipes, man-made ditches, channels and swales. This infrastructure conveys stormwater to over 850 miles of perennial streams and about 400 miles of non-perennial streams in the county. The majority of the stormwater control facilities and pipes were constructed 35 or more years ago.

Prior to the board providing a dedicated penny to stormwater in FY 2006, there had never been consistent funding to proactively inspect or reinvest in these stormwater systems. When the video inspections of the inside of pipes were first undertaken in FY 2007, over five percent of the system was identified as being in a state of failure and another 10 percent in need of rehabilitation. With the recently adopted Stormwater Service District tax rate, it is estimated that the reinvestment cycle for stormwater infrastructure has been reduced from well over 1,000 years to about 200 years.

In addition to the conveyance system, the county owns and maintains roughly 1,500 stormwater management facilities, ranging from large flood control lakes to LID techniques such as small infiltration swales, tree box filters or 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 and significant upgrades to the emergency spillways have been required in some cases.

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

The county must meet the federally mandated requirements of its MS4 permit. Fairfax County and Fairfax County Public Schools are combining their MS4 responsibilities into a single permit that will be administered by the county. Following development by the state, the new permit will be forwarded to the U.S. Environmental Protection Agency for approval. Recent permits that have been approved or issued for public hearing by the EPA have included aggressive requirements to retrofit significant amounts of impervious area, such as school and county buildings and parking lots, with more effective stormwater controls. We are anticipating that these extensive additional requirements also will be included in the new MS4 permit that 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 per year. EQAC supports meeting these challenging requirements through 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 2015 by at least one-quarter penny, from a rate of 2.0 cents per \$100 assessed real estate value to 2.25 cents per \$100. EQAC understands that this increase would not fully meet stormwater management needs and therefore suggests that additional increases be continued each fiscal year until adequate funding to support the program is achieved. This would, once again, result in more funding for modest watershed improvement programs and a somewhat more realistic infrastructure replacement timeline. We realize that there will be a need for additional increases in funding for water quality projects to meet future permit conditions, and for infrastructure reinvestment, as the system is continually growing and aging.

2. Fairfax County is preparing a Stormwater Management Ordinance in response to state regulations requiring localities to adopt ordinances and take over reviews and inspections for Virginia Stormwater Management Program general permits relating to stormwater runoff from construction sites effective July 1, 2014. **EQAC has recommended that this new Stormwater Management Ordinance maximize stream protection and lessen no current protection, in order not to have an adverse impact on the environment.**

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 and the county's involvement in the Alice Ferguson Foundation's Trash Free Potomac program.

Recent activities

Waste Reduction and Recycling Programs

- Fairfax County's Solid Waste Management Program's recycling rate for calendar year 2012 was 51 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 8.5 million tons and continues to exceed the state-mandated requirement.
- 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. While the county's solid waste code requires the collection of recyclables curbside, drop off centers continue to be used by residents and small businesses. Approximately 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 FY2013, county agency locations recycled approximately 1,000 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 nine magisterial districts. In CY 2012, nine document shredding events were held and approximately 40,000 pounds of personal documents were shredded.
- 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.

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.

- In 2012, three additional household hazardous waste collection events were held for residents at other locations around the county and three hazardous waste collection events were held for the benefit of small businesses in the county.
- In FY 2013, the Solid Waste Management Program continued its Electric Sunday program whereby, on one Sunday each month, residents can bring their obsolete electronics for recycling to the I-66 Transfer Station complex or the I-95 Landfill complex. In CY 2012, about 1.3 one million pounds of obsolete electronics, including televisions, were collected for recycling from Fairfax County residents.

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 947,000 tons of waste in FY 2013, an approximate nine percent reduction from FY 2012. The county bypassed over 36,000 tons of waste to a municipal solid waste landfill due to unscheduled 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

- On February 4, 2011, the I-95 Sanitary Landfill Solid Waste Permit was amended by the Virginia Department of Environmental Quality. That amendment included approval of the Corrective Action Plan prepared to address the noted exceedances of certain Groundwater Protection Standards in landfill monitoring wells. The CAP includes a program for natural attenuation for two areas where groundwater quality has already improved and the injection of food grade hydrogen releasing compounds in areas where groundwater quality improvements are sought. A full round of injections was completed in August and September of 2012 to fulfill the permit-mandated CAP and to further enhance the overall response of the preliminary attempt at enhanced bioremediation in 2011.
- A Corrective Action Monitoring Plan, approved as part of the 2011 permit amendment, required installation of eight additional performance and sentinel monitoring wells. County staff continues to monitor the progress of the groundwater remediation techniques and this information is reported to the VDEQ as required.
- The I-95 Landfill operates a large landfill gas collection system with over 350 installed wells extracting landfill gas for energy recovery. Approximately 2,300 cubic feet per minute of this gas is distributed to a variety of energy recovery systems, including the six-megawatt 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, Jr. Pollution Control Plant. The landfill gas pipeline project continues to provide significant energy cost savings at the wastewater treatment plant.

- County staff has converted space heating at the landfill maintenance shop to use landfill gas as the fuel source (the original heating system used bottled propane gas). This conversion is currently saving approximately \$5,000 per year in heating costs and received a national award from the U.S. Environmental Protection Agency.
- 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. Phases III and IV of the closure consisted of capping 135 acres of landfill with a thick, low permeability soil layer to minimize surface water infiltration.
- While opportunities to develop closed landfills are limited by federal and state environmental regulations, county staff identified a number of uses that could occur on the property, including additional green energy development through solar power. This solar project is included in a public/private effort being considered in the Lorton area to maximize sustainability opportunities, in a collective initiative called the Green Energy Triangle.
- 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. Both recycling and household hazardous waste disposal are provided at no cost to county residents.

I-66 Transfer Station & Recycling and Disposal Center

- The I-66 Transfer Station continues to transport 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 FY 2013 and was increased to \$54.00 per ton in FY 2014. The base solid waste disposal fee also remains at its FY 2010 rate of \$60.00 per ton.
- The county added four hydraulic arm trash collection trucks to its fleet of trash collection vehicles used on the county's Sanitary District routes. These trucks have mechanical arms that automatically pick up and empty trash containers placed curbside at residential properties. These trucks benefit the county in that they significantly reduce the opportunity for injuries of workers since workers are not necessary to pick up and empty containers; they also improve the efficiency of the collection routes.
- 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.

Composting

- Composting in Fairfax County currently consists of backyard composting programs as detailed in the county's Solid Waste Management Plan. While it is EQAC's view this is a great start to a successful program, there are further gains in the area of composting to be made. The waste stream is changing and a large part of this is due to separating recyclables. Separating food waste would capitalize on current programs and enhance composting in county recycling efforts.

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. Clean Fairfax was a major sponsor of the county's SpringFest festival that was held for the first time at the Workhouse Arts Center in Lorton. This event will supplant the county's former Earth Day/Arbor Day festival held each spring at other locations in the county. For more information, please visit the website at www.cleanfairfax.org.

Alice Ferguson Foundation

- In April 2013, the foundation held its 25th annual Potomac River Watershed Cleanup. At this event, 14,586 volunteers removed 312 tons trash and debris from the region at 633 cleanup sites throughout Washington, D.C., Maryland, Virginia, West Virginia and Pennsylvania. The 312 tons of trash collected during the cleanup included 1,314 tires, 193,800 beverage containers, 27,200 plastic bags and 27,400 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.

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.

Recommendation

1. EQAC recommends investigation of furthering composting efforts to collect food waste and properly eliminate it from the waste stream by routing it into a process whereby composted material would produce a useful product.

VI. Hazardous Materials

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

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

Recent Activities

- The Fire and Rescue Department’s Fire and Hazardous Materials Investigative Services section reported receiving 552 complaints involving hazardous materials in 2012, compared with 585 in 2011, 782 in 2010, 735 in 2009, 418 in 2008 and 317 in 2007. The number of actual releases of hazardous materials was 231 in 2012, 331 in 2011, 335 in 2010, 303 in 2009 and 330 in 2008. Of note is the positive trend of fewer complaints in the last two years and the substantial decrease in the actual spills in the past year.
- 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 came this year, when the alternative placement Lieutenant retired. 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 the community as required by the Emergency Planning and Community Right to Know Act. Emergency planners and response personnel have instant access to chemical inventories and Emergency Response Plans for each facility deemed to be a Critical Hazard Facility. Additionally, Emergency Response Plans are developed for critical infrastructure facilities such as sewage and water treatment plants and bulk petroleum storage facilities.
- The Fire and Hazardous Materials Investigative Services section initiated a new records management system in 2012 called Fire Files. This new RMS combines previously collected data from the Hazardous Materials Complaint Database and the Fire Investigations Case Files now into one single records management system.
- 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.
- Any person, business or other entity can use the services of Call2Recycle.org. This is an industry-funded product stewardship initiative where the manufacturer of a product known to contain hazardous constituents pays for the collection and appropriate disposal of the item at the end of its useful life. Program users sign up on-line and they will receive a cardboard box with a prepaid shipping label. The user fills the box with rechargeable batteries after being placed into individual plastic bags (to prevent arcing and potential fires in shipping). The user calls for pickup by UPS, which will send the container to a permitted hazardous waste disposal facility, as previously stated, at no charge to the user. The Solid Waste Management Program strongly encourages users of rechargeable batteries to use this free program to responsibly manage their batteries.
- The 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 member organizations have been focused on many exercises ranging from community response to incidents at the Upper Occoquan Sewage Authority and the Fairfax City tank farm to active shooter incidents at hospitals and many schools. This activity is a great example of maximizing scarce resources by teaming with city resources and conducting joint planning and training.
- Although the program that conducted remote household hazardous waste collection events has been considered for elimination due to budget restrictions in the recent past, the county found resources to sustain four household and three business events per year. EQAC

commends the county for maintaining this program 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. The overall HHW program continues its positive trend of supporting increasing number of household participation and the number of pounds of waste processed.

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, the phase-out of the incandescent light bulb from the U.S. market began 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 had provided valuable services by responding to complaints about mold, radon, asbestos and indoor air quality, managing the Tier II Reporting Program and assisting the Fire and Rescue Department and the Fairfax Joint Local Emergency Planning Committee with responses to hazardous materials incidents. Since 2010, these duties were supported by two individuals, one of whom has retired and the other who is over-tasked and will retire in the near future. Many activities, such as active community outreach and a focus on mold, radon, asbestos and indoor air quality have had to be scaled back due to the lack of a dedicated position. EQAC feels that, in the future, when budgetary conditions allow, these functions should be restored, either within the Department of Health or within the Fire Marshal's Office.

Recommendation

None.

VII. Ecological Resources

Background

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

Fairfax County contains a total of 227,883 acres (excluding roads and water). Of this total, 33,227 acres (14.6 percent) are in parks and recreation as of January 2012. Another 15,571 acres (6.8 percent) are vacant or in natural uses. This compares to the approximately 26,700 acres (11.7 percent) that were vacant or in natural uses as of January 2003. However, not all this acreage can be considered as open space that is valuable for natural habitat. First, the park acreage consists of active recreation (ball fields, etc.) as well as passive recreation (stream valley parks, nature centers, etc.) Ball fields, while greatly needed in Fairfax County, do not do much for protecting natural habitat. In a like fashion, much private open space consists of mowed areas and isolated trees (not woodlands). Again, this does little for protecting natural habitat. Both active recreation areas and private open space, however, if properly designed can help the environment by reducing storm water runoff (by allowing storm water to infiltrate into the soil).

Second, while vacant land is often wooded, this land is subject to development. Considering the continuing rapid pace of development in Fairfax County, much of this land will soon become residential space, office space, retail space, etc., and not provide much in the way of protecting natural habitat. In 1980, vacant land accounted for 32.2 percent of the total land in Fairfax County. By 1990, this had dropped to 19.5 percent and the figure was 6.2 percent as of January 2012.

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

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

Second, as also reported in the 2004 Annual Report on the Environment, the Park Authority approved the Natural Resource Management Plan for park properties. Park Authority staff began revision of this agency Natural Resource Management Plan in fall 2012. The Park Authority

staff will hold a public review in fall 2013 and hopes to adopt the revised Natural Resource Management Plan by January 2014. 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 Restoration Project, the Fairfax County Department of Public Works and Environmental Services and the Fairfax County Park Authority and its staff. EQAC especially commends the Fairfax County Board of Supervisors for its vision and activities in environmental areas.

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

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Recent activities

Fairfax County Park Authority

- Between June 2012 and June 2013, the Park Authority added 69 acres to its parkland inventory. This brings the parkland inventory to a total of 24,726 acres as of June 2013.
- FCPA's invasive plant control projects occur at over 56 park sites throughout the county. The Resource Management Division's nature centers such as Ellanor C. Lawrence Park, Huntley Meadows Park and Riverbend Park also work collaboratively with the Invasive Management Area program to remove the most highly invasive plant species from selected areas of parkland. The partnership with Earth Sangha, a local nonprofit organization, continues to be a highlight of invasive plant control efforts at both the Marie Butler Leven Preserve and Wilburdale Park. In addition, in 2012, Earth Sangha donated native plants to restore areas previously controlled for invasive plants throughout the Park Authority. Overall, Earth Sangha contributed thousands of volunteer hours to park projects.
- An outgrowth of the Invasive Management Area program has been the state-wide Invasive Plant Removal Day. On May 5, 2013, the IMA program participated in the fifth annual state-wide event and one county-wide event. Events were held at nine IMA sites, with 80

volunteers participating. These volunteers logged 175 hours and collected 66 bags of invasives.

- The Park Authority continues to maintain and monitor the previous riparian buffer enhancement projects installed in the last seven years. To date there are 35 projects on parkland throughout the county. These projects have focused on the conversion of mowed grass to areas of native trees and shrubs typical of riparian areas. In 2012, one of FCPA's partner organization, Earth Sangha, maintained and enhanced riparian plantings at Roundtree Park, Rutherford Park and Rocky Run (Awbrey Patent).

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: the purchase, at below-market value, of 10 acres on the Potomac River in Great Falls for watershed protection; receipt of 1.8 acres of donated open space on Mason Neck adjacent to Pohick Bay Regional Park Golf Course; and finalizing a no-cost acquisition of the 20-acre Webb Sanctuary in Clifton from the Audubon Naturalist Society.
- In 2012, NVRPA again partnered with Dominion Virginia Power for its "Trail Mix" community service program along the Washington & Old Dominion Trail; this program highlights environmental stewardship. The events featured invasive plant removal along the trail within Fairfax, Loudoun and Arlington Counties. NVRPA regularly offers invasive removal along the W&OD Trail as a Scout project option, along with the planting of butterfly gardens. A favorite area to work is near the Gallows Road intersection in Dunn Loring. The W&OD Trail staff selectively applies herbicides to the park's fence lines for invasive vines and woody plants such as tree of heaven, mile-a-minute vine and oriental bittersweet, allowing natives to fill in the gaps. Invasive plant control efforts also continued at Occoquan Regional Park, Bull Run Shooting Center, and Meadowlark Botanical Gardens.

Fairfax ReLeaf

- Fairfax ReLeaf is a nonprofit (501(c)(3)), non-governmental organization of private volunteers who plant and preserve trees in Northern Virginia, preserve native habitat and educate the public about the benefits of trees. Fairfax ReLeaf planted and distributed 6,720 trees in calendar year 2012. Nearly 1,000 volunteers spent over 2,500 hours planting tree seedlings, removing invasive species and maintaining planting sites. Highlights of Fairfax ReLeaf's 2012 plantings were: the planting of 1,860 trees in riparian area; the planting of 1,680 trees on homeowner association and private property; and the planting of 768 trees in parks, including private, county, and national parks.
- Fairfax ReLeaf provided many opportunities for community groups to serve Fairfax County in 2012. These included 10 Lions Club events, five Eagle Scout projects and three school group plantings. ReLeaf led four corporate workdays, where employees from workplaces such as Nodal Exchange, Northrop Grumman, Level Three and Winchester Homes gave their time to improve Fairfax County. Fairfax ReLeaf also conducted two workshops to prepare individuals to lead plantings.

Northern Virginia Conservation Trust

- The Northern Virginia Conservation Trust was founded in 1994 as the Fairfax Land Preservation Trust. In 1999, the trust changed its name to The Northern Virginia Conservation Trust. NVCT is a 501(c)(3) nonprofit land trust dedicated to preserving and enhancing the natural and historic resources of Northern Virginia. From the time NVCT accepted its first easement in 1999 through June 2012, NVCT has preserved over 685 acres of open space in Fairfax County through easements, fee simple ownership and partnerships. While no new acreage has been added since the last Annual Report on the Environment, NVCT has several ongoing projects in Fairfax County, including a trails project in Clifton and an extensive property known as Belmont Bay in the southern area of the county. In total, NVCT has over 500 acres in the pipeline in Fairfax County – all at some stage of discussion with owners who are willing to place easements on their properties.

Northern Virginia Soil and Water Conservation District

- The Little Pimmit Run II Stream Restoration was completed in early 2012. This project restored a total of 170 linear feet of eroded stream bank that threatened an exposed 21-inch sanitary sewer main in the northeastern part of Fairfax County. Building on an adjacent successful project, this stream restoration stabilized the stream bank and drainage channel using rock vanes, step pools, floodplain benching and revegetation. The funding for this project was a unique combination from Fairfax County and adjacent property owners. NVSWCD managed the design, permitting and construction, as well as the outreach and coordination with the community that facilitated the construction of the project.
- The Wakefield Stream Restoration project is a partnership among NVSWCD, Fairfax County Park Authority, Fairfax County DPWES, Dominion Virginia Power, Fluor/Transurban, the Friends of Accotink Creek, the Braddock District Supervisor's Office and the Mid-Atlantic Off-Road Enthusiasts. Located within Wakefield Park, this 800 linear foot project begins at the outfall under I-495 and ends at the confluence of the creek with the mainstem of Accotink Creek. This highly unstable stream yields large amounts of sediment due to significant stream bed and bank erosion after storm events. To bring attention to the project and to the issues facing the watershed, the partners worked together to host a competition to name the creek and connect it to the broader community. Don Wayne, a Burke resident, submitted the winning entry. The design is based on natural channel design concepts and includes a number of in-stream best management practices to provide stable bed and bank and habitat. The Fairfax County Park Authority engaged NVSWCD in coordinating the design. Fairfax County DPWES will pay for the majority of construction, with additional contributions made by Dominion Virginia Power and Fluor/Transurban. Construction is anticipated to begin in fall 2013.
- 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 96 parcels on 945 acres. These included 38,102 linear feet of Resource Protection Area, primarily stream buffers. All plans help landowners to comply with the county's Chesapeake Bay Preservation Ordinance.

- NVSWCD designed, built or supported the implementation of two rain gardens in partnership with several agencies. Together the rain gardens treat an approximate area of 16,500 square feet. The bioretention facility at the Packard Center in Annandale was built in memory of the late Sally Ormsby, a Northern Virginia Soil and Water Conservation District board member and well-known community leader. The rain garden was a partnership among NVSWCD, FCPA, Merrifield Garden Center and Earth Sangha. The Sidney Lanier Middle School rain garden is a partnership among Land and Waters Inc., City of Fairfax, Fairfax County DPWES Stormwater Planning Division and NVSWCD and has been designed to enable students to use the rain garden for experiments on water quality.
- NVSWCD's annual seedling program emphasizes the role of vegetation in preventing erosion, conserving energy and decreasing and filtering stormwater runoff. Seedlings planted in riparian areas also help to protect stream channel stability and stream water quality, as well as improving the surrounding habitat. This seedling program offered residents a package of native tree and shrub seedlings for a small cost. In spring 2013, a variety of 6,750 native seedlings were sold at a small cost to promote urban reforestation, habitat enhancement and water quality protection. The theme was Restore and Beautify Your Property, which offered a mix of sturdy trees that can withstand heavy storms, plants that provide screening and tolerate a range of conditions and some of our region's most beautiful native trees and shrubs. Packages included species of shrubs and small trees and packages of tree seedlings.
- NVSWCD provided technical assistance to the county's Code Enforcement Division and to a landowner by preparing a plan for a property cited for County Code violations. Technical assistance included the development of a reforestation plan to correct illegal clearing of a Resource Protection Area by the previous landowners. NVSWCD secured funding through the U.S. Fish and Wildlife Service to complete the project, which resulted in the planting of over 3,000 seedlings, shrubs, and grasses. Volunteers through Fairfax ReLeaf contributed their time toward the project as well.

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 has adopted a living shorelines policy. Recent efforts by the Virginia Institute of Marine Science to develop a Comprehensive Coastal Resource Management

Portal will support the implementation of this policy. The Virginia Marine Resources Commission is working to create a general permit to encourage living shoreline approaches to shoreline stabilization projects that affect tidal wetlands.

- The Wetlands Board has received two permit requests for 2013. Those applications will be reviewed when they are complete. The Wetlands Board continues to work on several wetlands ordinance violations and was planning to hold a public outreach meeting in fall 2013 to educate shoreline property owners about permitting requirements and related issues.
- Board members have attended training workshops at the Virginia Institute of Marine Science in Gloucester, Virginia, other meetings and had a canoeing field trip in Little Hunting Creek in June. Wetlands Board Chair Glenda Booth was invited to be a member of the Virginia Institute for Marine Science Council and began service in June by attending her first meeting in Wachapreague, Virginia. The Chair continues to participate on 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 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 30th 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 2012, 340 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 2012, approximately 6,000 pounds of seeds (mostly acorns) were collected. Each year, 500-700 seedlings are given to volunteers for planting on public lands in Fairfax County.
- The conservation of the forested land base in Fairfax County is a part of the VDOF plan. The Fairfax County office works closely with the Fairfax County Department of Planning and Zoning to review Agricultural and Forestal District applications. A&F District forest management plans are prepared by VDOF; these efforts support the management of forested land for conservation purposes. One new A&F plan covering 21 acres was prepared in 2012. VDOF also wrote three Neighborhood Forest Management Plans and provided less formal advice to a number of Home Owners Associations, Civic Groups and citizens. 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 2012. 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 65 talks on the general benefits of urban forests and riparian buffers.
- The Virginia Department of Forestry website (www.dof.virginia.gov) contains many pages on forest management and urban forestry. Topics range from tree identification to proper planting under power lines. The pages contain information developed by VDOF and links to many other sources of information on urban forestry and tree care.

Virginia Department of Transportation

- 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. On the recently completed I-95/Telegraph Road interchange, VDOT recently finished creation of 1.71 acres of tidal wetlands and 0.63 acres of non-tidal wetlands near the confluence of Taylor Run and Cameron Run. Additionally, 0.36 acres of stream restoration for a relocated tributary of Cameron Run was completed.

Virginia Department of Environmental Quality

- In 2012 the Northern Regional Office of the Virginia Department of Environmental Quality received 28 applications to impact surface waters in Fairfax County. A total of 26 new Virginia Water Protection Wetland Permits were issued. Compensation for impacts to surface waters was proposed to be provided through the purchase of bank credits and on-site stream restoration or riparian buffer enhancement.

Urban Forestry

- In accordance with recommendations contained in the Tree Action Plan, during CY 2010, DPWES leadership determined that the Urban Forest Management Division's affiliation with the Stormwater Business Area would provide significant opportunities for mutual mission support and optimal alignment for implementing Tree Action Plan programs. In July 2012, the Urban Forest Management Division was officially realigned within the Department of Public Works and Environmental Services from the Land Development Services Business Area to the direct supervision of the Deputy Director with oversight over the Stormwater and

Wastewater Business Areas. UFMD will remain located within the Herrity Building in order to continue daily interaction with LDS and the Department of Planning and Zoning during the review of proposed site plans and zoning cases. However, while the conservation of trees during land development will continue to be a major focus the foreseeable future, it anticipated that UFMD will begin devoting more time and resources to implementing programs and projects identified in the Tree Action Plan and helping the community and county agencies to manage and protect their tree and forest resources.

- In fall 2012 UFMD entered a data exchange agreement with Casey Trees Foundation in order to obtain an updated remote sensing analysis that quantified countywide tree canopy levels based on 2011 high-resolution satellite imagery and LIDAR data. The 2011 satellite imagery utilized in the analysis is considered very high resolution (0.46 centimeter, or 18.1 inches per pixel spatial resolution) and includes eight spectral bands, three of which have been added to enhance vegetation analyses. The finer spatial resolution of the 2011 imagery resulted in 37.6 times the ground sampling rate of the 2003 imagery. The new analysis indicates that 53 percent of the county's landmass was covered by tree canopy in the fall of 2011 (the date of the most recent imagery acquisition). This figure is much higher than those produced by previous remote sensing analyses which indicated that the county's tree/forest canopy coverage was 43 percent in 2003 (conducted by UFMD) and 42 percent in 2011 (conducted by the National Oceanic and Atmospheric Administration). Some of the unexpected gain may in fact be attributable to various natural, cultural and socio-economic influences present over the past decade. An explosion in the number of invasive trees (such as Callery pear and Tree of Heaven) along transportation and utility corridors has contributed large areas of canopy in areas once occupied by other vegetation types. In addition, the reduction in active construction sites associated with the economic downturn of the past five years may have substantially reduced the level of canopy loss typically associated with land clearing activities. Lastly, it is estimated that nonprofit and governmental tree planting programs associated with the county's 30-year canopy goal, coupled with increased community awareness about the benefits of trees, has resulted in the planting of a substantial number of trees; possibly as many as 250,000 trees have been planted over the last decade.

- As part of the 2012 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 projects 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:
 - The "Nature House" at the Walker Nature Center, Hunter Mill District: Tree Preservation.
 - The Dolley Madison Library, Dranesville District: Tree Preservation.
 - The Valleybrook Montessori School of Northern Virginia, Inc., Mason District: Tree Preservation.

- **Gypsy Moth Caterpillar:** In calendar year 2012, 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 2013. 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 2012–2013 monitoring effort indicated that 2,000 acres of treatment were required in spring 2013. These areas were to have been treated by helicopter 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 established trapping sites for this pest during summer 2012. Results of this trapping effort proved that the beetle and fungus are found in Fairfax County. Following this discovery, the Virginia Department of Agriculture placed a quarantine around Fairfax County that prohibits the transportation of walnut wood products.
- **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.

Agricultural and Forestal Districts

- Landowners may apply to place their land in special Agricultural and Forestal Districts that are taxed at reduced rates. A&F Districts, which are created by the Commonwealth of Virginia, must have 200 or more acres. A&F Districts of local significance, governed by the Fairfax County A&F District ordinance, must have at least 20 acres and must be kept in this status for a minimum of eight years.
- There was a change in the Dranesville District, resulting in a loss of one Local District. This was due to the withdrawal of Salona, a loss of 52.3 acres. This was partially compensated by the addition of 5.08 acres to Eagle District I in Dranesville, resulting in a net loss of 47.22 acres. The total number of local districts decreased from 42 to 41, while the number of statewide districts remained constant at two.

Fairfax County Department of Planning and Zoning

- Department of Planning and Zoning staff is reviewing the open space definition that is applied in the Zoning Ordinance to determine if clarification is necessary and whether the methodology used in open space calculations should be modified. Although full open space credit is currently given for all stormwater management ponds, staff is considering not giving full credit for an unenhanced dry pond, as this type of facility is generally considered undesirable from usable open space and visual perspectives.

Fairfax Chapter of the Virginia Master Naturalists Program

- Formed in 2006, the Fairfax Chapter of the Virginia Master Naturalist Program provides local residents with naturalist training and then connects them with volunteer stewardship, citizen science and outreach opportunities in parks and natural areas. The process for becoming a certified Virginia Master Naturalist takes from six to 12 months. Two times a year, approximately twenty candidates are selected for a class. They begin with a 60-hour basic training course, which is a combination of classroom lectures and field work that grounds them in natural history and forest and aquatic ecology. Subject matter experts from the Northern Virginia Regional Park Authority, Fairfax County Park Authority, Virginia Department of Forestry, Virginia Tech, Northern Virginia Soil and Water Conservation District, EPA and National Academy of Sciences make up the faculty. Master Naturalists are expected to provide much-needed support to the many environmental organizations striving to protect natural resources in Fairfax County. To be certified, graduates must provide 40 hours of volunteer service and receive eight hours of advanced training each year.

- In 2012, 118 FMN members provided 7,270 volunteer hours to its partners and other organizations. Seventy-one members received Virginia Master Naturalist certification by providing 40 hours or more of volunteer service and completing eight hours of advanced training; 31 members have reached the cumulative 250-volunteer-hour mark, and 11 have contributed over 500 cumulative volunteer hours. Every seventh-grader at three diverse Fairfax County middle schools participated in a Meaningful Watershed Education Experience program. It reached well over 1,000 students over eight days in April-May and five days in October.
- The Fairfax Master Naturalist chapter successfully ran two basic training classes in 2012 and just finished another in May 2013, recruiting 60 new members. This brought the number of trained volunteers to 227. With 176 current members, FMN provided over 7,000 hours of volunteer service in 2012, of which 1,643 hours were in education and outreach, 1,317 in citizen science projects, and 2,307 in stewardship efforts. FMN members provided 1,923 hours of volunteer service to FCPA, of which just over 300 was with the Invasive Management Area program, in both removal and Early Detection-Rapid Response activities.

Fairfax County Restoration Project

- FCRP has continued its coordination with the Virginia Department of Transportation and homeowners on reforestation efforts in areas cleared for the Capital Beltway Express Lanes project.
- In 2011, FCRP began considering a media campaign to raise awareness of the relationship between runoff and pollution. A primary focus of the campaign was to be how replacing turf with trees and other plants could reduce runoff and improve water quality. FCRP became aware that The Chesapeake Club had already developed a similar campaign called www.plantmoreplants.com, which the organization felt was very well done and extremely effective. Working with the Club and Chairman Bulova's office, FCRP was able to bring the campaign to Fairfax County. Beginning in fall 2012, Cox Communications has placed the ads in its normal public service announcement schedule. FCRP is now streaming the video clips through its website to further promote the message. Supporting materials developed by The Chesapeake Club have been distributed at functions and are available to any of FCRP's partner organizations, and banners can be seen at retail & landscaping outlets. Ad buys are being done collectively throughout the state to further the message.
- Reforest Fairfax was launched on October 13, 2011. Reforest Fairfax is a tree-gifting program designed to help replenish the tree canopy and to help the county achieve its tree canopy goals. For each \$35 gift purchased five seedlings are planted by Fairfax ReLeaf during a spring or fall planting season. An on-line locator is available so once the trees are planted the locations of the gifts can be identified. There is also an optional on-line registry for supporters of the program. The program can be accessed at <http://www.fcrpp3.org/reforestfairfax/>. In 2012, the total reached 49 gifts purchased and 245 trees planted.

- 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.

Stewardship

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

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

- The Northern Virginia Regional Park Authority also has opportunities for volunteers. These environmental stewardship opportunities for volunteers are available at Meadowlark Botanical Gardens, Potomac Overlook Regional Park, Upton Hill Regional Park, Pohick Bay Regional Park and various other parks on occasion. More information can be found at http://www.nvrpa.org/park/main_site/content/volunteer.
- Fairfax ReLeaf offers a number of opportunities for stewardship. For further information on Fairfax ReLeaf, visit its website at <http://www.fairfaxreleaf.org>. The organization can be reached at:

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

- The Northern Virginia Conservation Trust offers many stewardship opportunities for Fairfax County residents. Additional information on NVCT can be found on its website, <http://www.nvct.org>. Landowners whose property contains environmentally

sensitive land such as wetlands, stream valleys and forests can also participate in environmental stewardship. If these landowners grant easements to NCVT, they will not only protect sensitive land, but can realize some financial benefits. A perpetual easement donation that provides public benefit by permanently protecting important natural, scenic and historic resources may qualify as a federal tax-deductible charitable donation. Under the Virginia Land Conservation Act of 1999, qualifying perpetual easements donated after January 1, 2000 may enable the owner to use a portion of the value of that gift as a state income tax credit. Fairfax County real estate taxes could also be reduced if the easement lowers the market value of the property.

- For stewardship information on the Potomac Conservancy, see <http://www.potomac.org>.

Comments

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

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

2. In past Annual Reports, EQAC recommended that the Board of Supervisors emphasize public-private partnerships that use private actions such as purchase of land and easements by existing or new land trusts to protect forests and other natural resources, including champion/historic trees. With the signing of a Memorandum of Understanding between the Board of Supervisors and the Northern Virginia Conservation Trust, such a public-private partnership came into being. Thus, EQAC's recommendation has been satisfied. EQAC continues to commend the Board of Supervisors for this action and recommends continued support for this partnership.
3. In past Annual Reports, EQAC recommended that the Board of Supervisors develop and implement a countywide Natural Resource Management Plan – an ecological resources management plan that can be implemented through the policy and administrative branches of the county government structure. Two necessary tasks should be accomplished first --

prepare and adopt a unified Natural Resource Conservation Policy, and complete a countywide Baseline Natural Resource Inventory. EQAC notes that slow progress is being made in this area by the Fairfax County Park Authority staff in its efforts to establish a natural resources baseline inventory. 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 GIS that will delineate the distribution of naturally occurring and landscaped vegetation. However, these efforts must be supplemented by an inventory of the county that accounts for flora and fauna. EQAC also notes the accomplishment of the Park Authority in preparing and publishing a 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, urging that they culminate in a countywide Resource Management Plan. EQAC's intent is that Fairfax County should have all the tools in place (the policy and the data) to create a plan that will support the active management and conservation of the county's natural resources.

4. While recurring funding to implement the Natural Resource Management Plan has not been secured, progress has been made in identifying positions within the Park Authority. Three new merit positions were created in 2011 in the Natural Resource Management and Protection 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 Invasive Area Management Volunteer Coordinator position. In addition, the Natural Resource Management and Protection Section was reclassified as a branch and the manager's position was upgraded accordingly. Finally, the Park Authority continues to be successful in obtaining project specific funding for resource management. In addition to funding for IMA, several other projects have been funded including work at Old Colchester Park and Preserve, Ossian Hall, Fitzhugh, and Wakefield Parks. In addition, NRMP staff kicked off a new natural resource restoration project at Ellanor C. Lawrence Park using bond, proffers and telecommunication fee funds in 2012. The 2012 bond included \$1 million for natural capital stewardship. In 2013 Park Authority staff has been working with a wide range of stakeholders to revise the agency Natural Resource Management Plan. The new plan will be more closely focused on adaptive management of natural capital for biodiversity. It should be adopted by December 2013 or January 2014.

EQAC commends the Park Authority in finding funding for IMA projects. EQAC also commends the Park Authority in upgrading the Natural Resource Management and Protection Section to a branch and establishing new positions. EQAC suggests that the Park Authority fill all vacant positions as soon as feasible.

Recommendation

1. The Fairfax County Park Authority approved a Natural Resource Management Plan in 2004. This partially fulfilled a long-standing EQAC recommendation to develop and implement a countywide Natural Resource Management Plan. The Park Authority is currently preparing a revised Natural Resource Management Plan, and it is anticipated that, as was the case for the

previous plan, substantial staff and monetary resources will be needed to implement the plan that will ultimately be adopted. For the 2004 plan, FCPA staff estimated that full implementation would require approximately \$8 million per year and dozens of staff positions. This included about \$3.5 million to focus on general natural resource management and \$4.5 million for a non-native invasive plant control program. A more phased approach to funding would have allowed FCPA to begin to manage 10 percent of parklands and set up the program to be phased in over time. Phase 1 with this approach would have required \$650,000 and six positions. It is anticipated that similar needs will be identified for the new plan. EQAC strongly feels that a Natural Resource Management Plan needs to be implemented. Therefore, EQAC recommends that the Board of Supervisors provide sufficient funding to implement an initial phase for natural resource management efforts and that the Fairfax County Park Authority Board apply this funding accordingly. EQAC recognizes that in today's budget climate, such increased funding may be difficult to achieve. However, EQAC recommends some increase in funding by the Board of Supervisors. And, once the county's budget problems are eased, EQAC further recommends that the Board of Supervisors increase funding as a high priority. Ultimately, this increased funding should support the full implementation of the Natural Resource Management Plan.

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 these difficulties the deer management program was able to conduct some managed hunts and sharpshooter events. The Park Authority on its separate federal permit was able to oil substantial numbers of goose eggs.

- The Wildlife Biologist and the Director of Animal Services have conducted an extensive program review in order to maximize the ongoing effectiveness of the program and the most efficient application of fiscal resources.
- An archery program has been implemented, which will make it possible to address deer control in residential areas where discharge of firearms is prohibited.

Issues of Note

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

Comments

Impacts of Deer in Fairfax County

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

Impacts of Geese in Fairfax County

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

Coyotes in Fairfax County

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

Wildlife Borne Diseases of Concern in Fairfax County

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

Recommendations

Impacts of Deer in Fairfax County

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

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

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 2012 have decreased from the 2011 levels, falling from 609,263 to 600,246.

Noise Monitoring

- The Metropolitan Washington Airports Authority, which operates both airports, replaced its aging noise monitoring system with a new monitoring system. The new system, which became operational in late 2008, monitors noise at 35 locations throughout the metropolitan Washington, D.C. area, including 14 sites in Fairfax County. Noise data from the monitors are reported in an Annual Aircraft Noise Report, which can now be accessed from the home page of the MWAAs website by searching “noise” from the box at the top right of the page.
- Previously, there were 32 monitoring locations, with 11 in Fairfax County. The four new monitoring stations in Fairfax County were located near Dulles Airport; the other four new monitoring sites were established in Loudoun County. In 2012, noise data from five of the Fairfax County monitors were missing or unreliable due to a wide range of issues including power losses and vandalism. Details on the unavailable data are listed in the Noise Report on the MWAAs website.

Washington Dulles International Airport

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

Ronald Reagan Washington National Airport

- In early 2008, the Federal Aviation Administration completed its review of the Part 150 Noise Compatibility Study for Reagan National Airport. Only four of the eight proposed noise abatement measures in the study were approved, as were all six of the mitigation measures, with the acknowledgment that these measures were beyond the authority of FAA. The four measures that were disapproved were done so because there are “no present or forecasted incompatible land uses within the DNL 65 dB” noise contour. While 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.

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, Aviation Policy Liaison Mary Hynes convened a Helicopter Noise Forum in February 2011. One proposal that emerged from the forum was a community noise portal that could manage helicopter noise complaints and pinpoint "hot spots." While such a portal could help alleviate community concerns, Liaison Hynes noted that a source of funding would need to be found before it could be adopted. During 2012, according to Liaison Hynes, there were fewer community complaints about helicopter noise, suggesting that the helicopter noise forums, combined with the two noise mitigation policies, have been effective.

Highway Noise Barriers

- The I-495 Express Lanes Project has been completed. As part of the project, nine new sound barrier systems were constructed, along with the replacement/enhancement/extension of eight previously existing sound walls. Sound walls have been constructed to protect almost all residential areas on both sides of the highway adjacent to the 14-mile stretch of the project. Barrier heights range from seven to 39 feet.
- Noise barriers have also been approved for the following projects: I-495 at the Georgetown Pike (Route 193) interchange; the Dulles Connector Road; an I-66 Spot Improvement project; and the I-95 Express Lanes.
- Noise barriers are also under consideration for the Richmond Highway (U.S. Route 1) improvement project between Telegraph Road and Mount Vernon Memorial Highway.

Metro Yard Noise

- As part of the proposed expansion of the Metro Service and Inspection Yard located near the West Falls Church Metro station, a sound box 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. The sound box is under construction and should be completed in February 2014. It will cover approximately 1,000 linear feet of track and is expected to meet all of the required conditions.

Tysons Corner Noise Study

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

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 of the detailed version of this report). Anyone interested in joining the efforts should contact the FCRP at info@fcrpp3.org.

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. 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.
6. Once one year of reliable community noise impact data from the new runway configuration at Dulles Airport, with all four runways fully operational, are available, the Metropolitan Washington Airports Authority should review and analyze the data to identify operations on the new runways as they relate to community noise impacts and whether or not such impacts would suggest the need for consideration of operational changes.

Recommendations

1. The noise monitor at Great Falls Elementary, which primarily served Reagan National Airport, has been decommissioned with no plans for a replacement as there are currently few complaints about noise at that site. EQAC recommends that MWAA's decision to decommission this monitoring station be referred to the county's Airports Advisory Committee for review and recommendation. EQAC further recommends that the Airports Advisory Committee be asked whether it may be appropriate to consider if this monitoring station should be relocated elsewhere in the county, recognizing MWAA staff's perspective as to why such an effort may not be appropriate.
2. EQAC supports efforts by the Metropolitan Washington Airports Authority to report, on its website, results from the new noise monitoring system for Washington Dulles International and Ronald Reagan Washington National Airports. EQAC recommends, however, that the Board of Supervisors request to MWAA that these results be reported on a quarterly basis and that the data be posted more promptly, ideally within three months.

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 several 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. Recent Park Authority beta tests of LED lights along paths and walkways in McLean Central Park have been extremely successful and indicate that this technology should become the Park Authority standard. EQAC has collaborated with the Park Authority in preparing an extensive report, sometimes known as a "white paper," on the problems of athletic field lighting including the limitations on solutions of the glare problem and a detailed set of technical specifications for design of field lighting that will, insofar as possible, minimize problems for surrounding neighborhoods.

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."

Addressing the Problem

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

residents and business owners to work together to improve and revitalize local appearance.

For many years, EQAC has issued recommendations regarding illegal signs. Most recently, EQAC noted its support for a proposed agreement between Fairfax County and the Virginia Department of Transportation regarding removal of illegal signs from highway rights-of-way (memorandum dated February 13, 2013—see Appendix B of the detailed Annual Report, available on CD and on the Web at www.fairfaxcounty.gov/eqac). EQAC supported the proposed legal agreement as it would have the effect of reducing the number of illegal signs that are found within the county.

Since that time, the Board of Supervisors, at its meeting on February 27, 2013, directed the county executive to enter into an agreement with the State of Virginia allowing for the removal of illegal signs in the public rights-of-way by the county. That agreement includes an initial phase and a second phase of an enforcement program. During the initial phase, county staff will educate the public and business groups about it after the sign removal agreement has been executed. On this effort, the Department of Code Compliance will work in coordination with the Sheriff's Office, Office of Public Affairs and VDOT's public affairs staff. These efforts may include outreach to homeowners and civic groups, outreach to business and trade organizations, public service announcements and outreach to the news media.

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

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

Related Information

The Fairfax County Department of Code Compliance provided the following information for 2012:

- Total number of zoning complaints received in 2012: 3,581
- Number of sign-related zoning complaints received in 2012: 288
- Number of lighting-related zoning complaints received in 2012: 37

On July 1, 2013 the Community Labor Force of the Sheriff's Office began a countywide cleanup of illegally posted signs in the rights-of-way on the major roadways in the county. Details of this program are available

at <http://www.fairfaxcounty.gov/signs/signremovalprogram.htm>.

The Alice Ferguson Foundation provided information about the 25th Annual Potomac River Watershed Cleanup in April 2013, as well as a regional litter prevention campaign. A full report for Litter Enforcement Month can be found online

at: <http://fergusonfoundation.org/trash-free-potomac-watershed-initiative/litter-enforcement/litter-enforcement-month/>.

Comment

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