



*Fairfax County*  
**VIRGINIA**

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# SUSTAINABILITY INITIATIVES

FY 2015





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# PREFACE

*Fairfax County Sustainability Initiatives (FCSI)* provides an overview of many of the projects and programs carried out by Fairfax County and its partners in support of the Energy and Environmental goals and policies of the Board of Supervisors (board).

Specifically, FCSI is intended for an audience interested in learning about what Fairfax County is doing to promote sustainability and protect the environment, consolidated into a single go-to resource, which is a first of its kind for the county. Although the FCSI is accessible to the general public and formatted with clear text and engaging images, it is not a simple brochure intended for the casual reader, but for those with a stronger, more specific interest. It is a resource for students conducting research, environmental organizations and their members, and as a reference guide for county staff, residents and businesses.

FCSI would not have been possible without the tireless efforts of the many highly dedicated professionals who contributed to the development of this document. I would like to especially thank Susan Hafeli, Noel Kaplan, Charles Smith, Brian Worthy, Jeff Hatterick, Lynn Green, Christopher McGough, Brian Schoester and Lourdes Umana of Fairfax County and Lily Whitesell of the Northern Virginia Soil and Water Conservation District.

We wish to also thank Deputy County Executive, David J. Molchany for his direction, encouragement and support, and the county's Chief Information Officer, Wanda Gibson, for its publication.

It is our hope that the release of the *Fairfax County Sustainability Initiatives* report will clearly demonstrate the board's leadership and support for promoting sustainability in the county.

This report represents only one aspect of the county's Environmental Improvement Program, which also consists of a projects funding process and an energy plan with goals and actions that is currently a work in progress. I hope that you will take up the challenge and work with us to further develop the county's sustainability initiatives.

**Kambiz Agazi, Ph.D., P.E.**  
Environmental Coordinator  
Fairfax County, Virginia



# INTRODUCTION

Environmental quality is essential for everyone living and working in Fairfax County. A healthy environment enhances quality of life and preserves the vitality that makes Fairfax County a special place to live and work.

In 2004, the Fairfax County Board of Supervisors (board) adopted its Environmental Agenda, entitled *Environmental Excellence for Fairfax County: A 20-year Vision*. The Environmental Agenda affirms that, in Fairfax County, environmental stewardship and prudent management of natural resources are not merely "add-ons," or afterthoughts, but rather are essential and fundamental responsibilities of local government that must be given fullest consideration at all times. The Environmental Agenda, which was revised in 2007, is available at [www.fairfaxcounty.gov/living/environment/eip/bos\\_environmental\\_agenda.pdf](http://www.fairfaxcounty.gov/living/environment/eip/bos_environmental_agenda.pdf).

Achieving the goals articulated in the board's Environmental Agenda requires cooperation and coordination between county residents and government leadership and agencies.

This document, *Fairfax County Sustainability Initiatives*, provides an overview of many of the projects and programs carried out by Fairfax County and its partners in support of the board's Environmental Agenda.

**Section 1** describes the county government structure, particularly as it relates to sustainability initiatives.

**Section 2** summarizes the strategic, policy and regulatory framework that guides the sustainability efforts of the Fairfax County Board of Supervisors and county staff.

**Section 3** describes sustainability activities with a community-wide impact.

**Section 4** highlights a number of innovative and successful efforts to implement environmental and energy goals for county facilities and operations.

**Section 5** identifies those projects and programs that receive funding set aside by the Board of Supervisors for the county's Environmental Improvement Program.

**Section 6** lists a number of the sustainability awards and recognitions received by the county over the last decade.

Environmental stewardship is both a key responsibility and a critical legacy of any elected public body. The county has a responsibility to help citizens respect and manage our finite natural resources. Ideally, citizens, communities, governments and private entities will learn to make informed decisions that will conserve and improve our environment and minimize impacts on our ecosystems. The county also has a responsibility to be an environmental steward through its operational practices. We have made great strides..., but we can and must do more.

*Board of Supervisors'  
Environmental Agenda (2004)*



# SECTION 1

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## FAIRFAX COUNTY GOVERNMENT: AN OVERVIEW

# FAIRFAX COUNTY GOVERNMENT: AN OVERVIEW

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# SECTION 1

## 1.1 Introduction

Fairfax County is a diverse and growing community. It is home to over 1.1 million residents, almost double its 1980 population. Over a third of the county's residents speak a language other than English at home, and nearly 60 percent are college graduates. The county has a total land area of 395 square miles, a budget larger than four states, and a 2012 median household income of \$107,096. See [www.fairfaxcounty.gov/government/about/data/](http://www.fairfaxcounty.gov/government/about/data/).

The county is governed by the elected Fairfax County Board of Supervisors (board). The board engages residents and businesses, protects investment in the county's most critical priorities, and maintains strong responsible fiscal stewardship to ensure:

- A quality educational system.
- Safe streets and neighborhoods.
- A clean, sustainable environment.
- Livable, caring and affordable communities.
- A vibrant economy.
- An efficient transportation network.
- Recreational and cultural opportunities.
- Affordable taxes.

To ensure the third priority – a clean, sustainable environment – Fairfax County has pledged to “continue to protect our drinking water, air quality, stream valleys and tree canopy through responsible environmental regulations and practices. We will continue to take a lead in initiatives to address energy efficiency and sustainability and to preserve and protect open space for our residents to enjoy.” See [www.fairfaxcounty.gov/government/board/priorities/](http://www.fairfaxcounty.gov/government/board/priorities/).

Advancing the board's priorities requires the coordinated efforts of many actors working within the governance structure provided by state law. This section describes the county's governance structure and briefly discusses the roles of key agencies and partners working on behalf of a clean, sustainable Fairfax County.

## 1.2 Fairfax County Government

### 1.2.1 County Governance

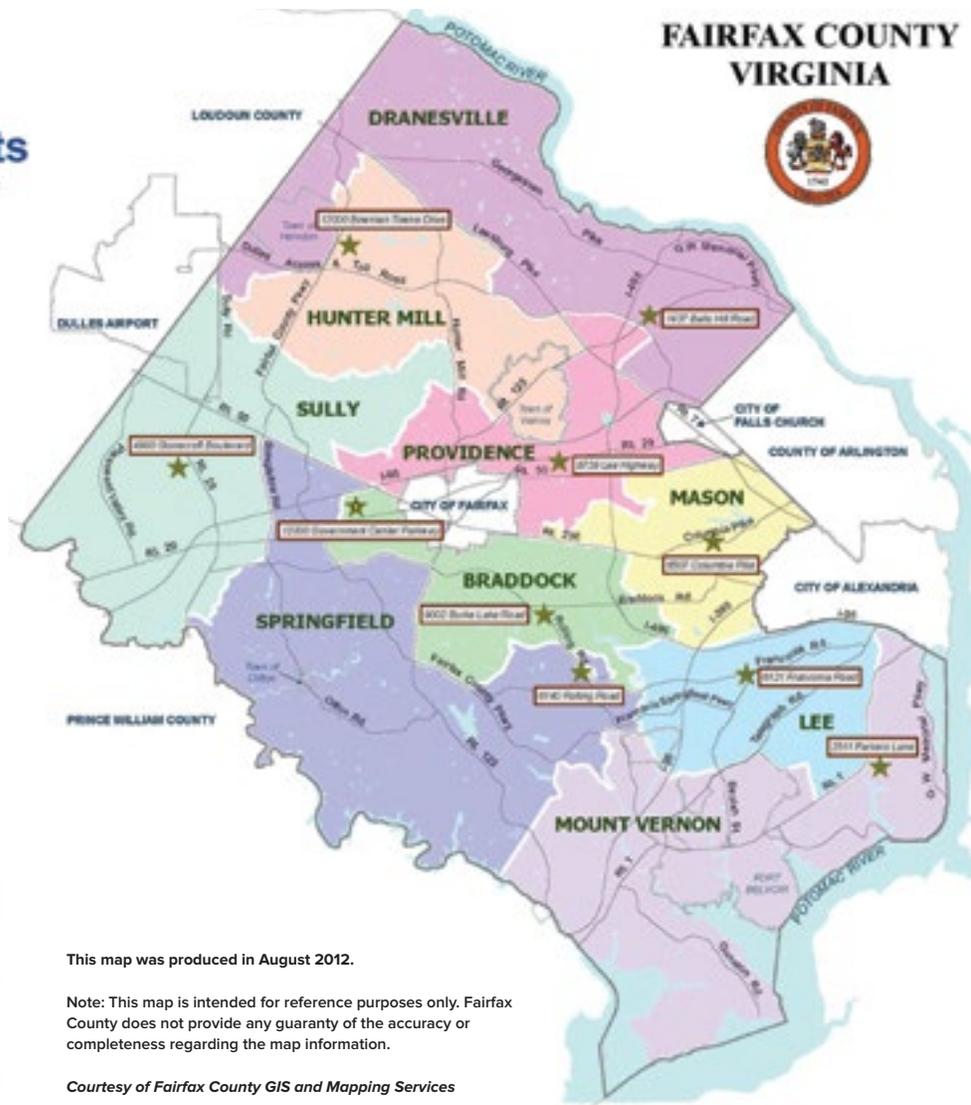
The Fairfax County government is organized under the Urban County Executive form of government as defined under the Code of Virginia. The county's governing body is the Board of Supervisors.

The Board of Supervisors consists of ten members: the Chairman, elected at large, and one member from each of nine supervisor districts. The law requires that districts be of approximately equal population and that the supervisors (other than the chairman) be residents and qualified voters of their districts and be elected only by voters living in those districts. All voters in the county may vote for the chairman. The board elects the vice chairman annually from among its members at its first meeting in January. Board members are elected for four-year terms. There is no legal limit to the number of terms a member can serve.

### Supervisor Districts in Fairfax County

#### Supervisor Offices

- ★ Office Address
- ★ Chairman's Office



This map was produced in August 2012.

Note: This map is intended for reference purposes only. Fairfax County does not provide any guaranty of the accuracy or completeness regarding the map information.

Courtesy of Fairfax County GIS and Mapping Services



*From left to right: Catherine M. Hudgins (Hunter Mill District); Michael R. Frey (Sully District); John C. Cook (Braddock District); Gerald W. Hyland (Mount Vernon District); Sharon Bulova (Chairman, At-Large); Penelope A. Gross (Mason District, Vice Chairman); John W. Foust (Dranesville District); Jeffrey C. McKay (Lee District); Pat Herrity (Springfield District); and Linda Q. Smyth (Providence District)*

**Chairman, At-Large**

**Sharon Bulova**

703-324-2321, TTY 711

[www.fairfaxcounty.gov/chairman/](http://www.fairfaxcounty.gov/chairman/)

**Braddock District Supervisor**

**John C. Cook**

703-425-9300, TTY 711

[www.fairfaxcounty.gov/braddock/](http://www.fairfaxcounty.gov/braddock/)

**Dranesville District Supervisor**

**John W. Foust**

703-356-0551, TTY 711

[www.fairfaxcounty.gov/dranesville/](http://www.fairfaxcounty.gov/dranesville/)

**Hunter Mill District Supervisor**

**Catherine M. Hudgins**

703-478-0283, TTY 711

[www.fairfaxcounty.gov/huntermill/](http://www.fairfaxcounty.gov/huntermill/)

**Lee District Supervisor**

**Jeff C. McKay**

703-971-6262, TTY 711

[www.fairfaxcounty.gov/lee/](http://www.fairfaxcounty.gov/lee/)

**Mason District Supervisor and Vice Chairman**

**Penelope A. Gross**

703-256-7717, TTY 711

[www.fairfaxcounty.gov/mason/](http://www.fairfaxcounty.gov/mason/)

**Mount Vernon District Supervisor**

**Gerald W. Hyland**

703-780-7518, TTY 711

[www.fairfaxcounty.gov/mountvernon/](http://www.fairfaxcounty.gov/mountvernon/)

**Providence District Supervisor**

**Linda Q. Smyth**

703-560-6946, TTY 711

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**Springfield District Supervisor**

**Pat Herrity**

703-451-8873, TTY 711

[www.fairfaxcounty.gov/springfield/](http://www.fairfaxcounty.gov/springfield/)

**Sully District Supervisor**

**Michael R. Frey**

703-814-7100, TTY 711

[www.fairfaxcounty.gov/sully/](http://www.fairfaxcounty.gov/sully/)

The board establishes county government policy, passes resolutions and ordinances (within the limits of its authority established by the Virginia General Assembly), approves the budget, sets local tax rates, approves land use plans and makes appointments to various positions. These actions are taken in open meetings, which the public is encouraged to attend. All discussions are held in public, with the exception of issues exempt from the Virginia Freedom of Information Act, such as legal or personnel issues.

Board members also participate in various committees, subcommittees, and regional agencies, which are listed at [www.fairfaxcounty.gov/bosclerk/board-committees/](http://www.fairfaxcounty.gov/bosclerk/board-committees/). Several board committees address aspects of sustainability, including the Environmental Committee, the Community Revitalization and Reinvestment Committee, and the Transportation Committee. Each of these committees is a “committee of the whole,” or comprised of all board members. Sustainability issues are also addressed in regional committees in which board members are active participants, including:

- Metropolitan Council of Government (COG) Region Forward Committee.
- COG Climate, Energy and Environmental Policy Committee.
- COG Metropolitan Washington Air Quality Committee.
- COG Chesapeake Bay and Water Resources Policy Committee.
- COG Task Force on Regional Water Supply Issues
- Potomac Watershed Roundtable.

The Board of Supervisors appoints a County Executive to act as the administrative head of the county. The County Executive serves at the pleasure of the Board of Supervisors, carries out the policies established by the Board of Supervisors, directs business and administrative procedures and recommends officers and personnel to be appointed by the board.

Like other Virginia local governments, Fairfax County has limited powers. Virginia courts have concluded that local governments in Virginia have only those powers that are:

- Specifically conferred on them by the Virginia General Assembly.
- Necessarily or fairly implied from a specific grant of authority.
- Essential to the purposes of government – not simply convenient, but indispensable.

More information about this doctrine of limited authority for local governments, which is commonly called the Dillon Rule, is available at [www.fairfaxcounty.gov/government/about/dillon-rule.htm](http://www.fairfaxcounty.gov/government/about/dillon-rule.htm).

The board of supervisors web page, [www.fairfaxcounty.gov/government/board](http://www.fairfaxcounty.gov/government/board), provides links to the board members' individual web pages, podcasts, RSS feeds, a "Find Your District Supervisor" application, Board of Supervisors' news, committee assignments, goals and priorities, pictures of presentations to residents and more. An organizational chart of Fairfax County government is available at [www.fairfaxcounty.gov/government/county-org-chart.pdf](http://www.fairfaxcounty.gov/government/county-org-chart.pdf).

### 1.2.2 Cities and Towns

In Virginia, cities and counties are distinct units of government and do not overlap. Fairfax County completely surrounds the City of Fairfax and is adjacent to the City of Falls Church and the City of Alexandria. Property within these cities is not subject to taxation by Fairfax County, and the county generally is not required to provide governmental services to their residents. However, pursuant to agreements with these cities, the county provides certain services to their residents.

Unlike cities, incorporated towns are overlapping units of government within the county. There are three incorporated towns in Fairfax County: Clifton, Herndon and Vienna. These towns have land use policies and regulations that are independent of the county's, although other county ordinances and regulations are generally effective in them. Property in these towns is subject to county taxation and the county provides certain services to their residents.

### 1.2.3 Boards, Authorities and Commissions

Advisory bodies and citizen participation play very important roles in Fairfax County government. The Board of Supervisors has established dozens of boards, authorities and commissions (BACs) to ensure that residents and other stakeholders are involved in all aspects of the county government's functions. Residents interested in serving on a county board, authority, commission, or committee, should contact their Supervisor.

A complete list of BACs is available at [www.fairfaxcounty.gov/bacs/](http://www.fairfaxcounty.gov/bacs/).

BACs with environmental roles include the following:

Boards, Authorities and Commissions	
Name	Purpose and Link
Agricultural and Forestal Districts Advisory Board	To advise the Board of Supervisors and Planning Commission regarding the proposed establishment, modification, renewal, continuation, and determination of agricultural and forestal districts; to render expert advice on the desirability of establishing such districts.  <a href="http://www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23335">www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23335</a>
Airports Advisory Committee	To advise the Board of Supervisors on all airports and aircraft operations affecting Fairfax County; to expand the committee's responsibilities and feasibility of establishing a countywide aircraft noise complaint center.  <a href="http://www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23354">www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23354</a>
Board of Zoning Appeals	To hear and decide: (1) appeals of administrative decisions made pursuant to the Zoning Ordinance; (2) applications for special permits and variances as authorized by the Zoning Ordinance; and (3) applications for interpretation of the Zoning Map where there is uncertainty as to the location of a zoning district boundary.  <a href="http://www.fairfaxcounty.gov/dpz/bza/">www.fairfaxcounty.gov/dpz/bza/</a>
Chesapeake Bay Preservation Ordinance Exception Review Committee	To review applications to conduct land disturbing activities within Resource Protection Areas.  <a href="http://www.fairfaxcounty.gov/dpwes/environmental/cbay/erc/">www.fairfaxcounty.gov/dpwes/environmental/cbay/erc/</a>
Engineering Standards Review Committee	To provide technical and engineering advisory services to the Board of Supervisor; to thoroughly review the input data for the annual update of the Public Facilities Manual.  <a href="http://www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23312">www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23312</a>
Environmental Quality Advisory Council	To advise the Board of Supervisors on environmental matters through ongoing review of the quality of the county's physical environment and to advocate and promote environmental preservation, protection, and enhancement.  <a href="http://www.fairfaxcounty.gov/dpz/eqac/">www.fairfaxcounty.gov/dpz/eqac/</a>
Fairfax County Park Authority	To be responsible for the acquisition, development and maintenance of the parks in the county.  <a href="http://www.fairfaxcounty.gov/parks/">www.fairfaxcounty.gov/parks/</a>

Boards, Authorities and Commissions	
Geotechnical Review Board	<p>To adopt ordinance amendments, official map and criteria regulating development in areas of Marumsco/Marine Clay soils and other problem soil areas.</p> <p><a href="http://www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23317">www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23317</a></p>
Health Care Advisory Board	<p>To be responsible for a periodic review of a comprehensive health plan for the county; to initiate an on-going health care information process in coordination with local, regional, state and federal agencies.</p> <p><a href="http://www.fairfaxcounty.gov/hd/hcab/">www.fairfaxcounty.gov/hd/hcab/</a></p>
Planning Commission	<p>To advise the Board of Supervisors on all matters related to the orderly growth and development of Fairfax County; to approve or disapprove the location, character and extent of all public facilities in the county.</p> <p><a href="http://www.fairfaxcounty.gov/planning/">www.fairfaxcounty.gov/planning/</a></p>
Redevelopment and Housing Authority	<p>To be responsible for providing rental housing for low-income families in Fairfax County.</p> <p><a href="http://www.fairfaxcounty.gov/rha/aboutfcrha.htm/">www.fairfaxcounty.gov/rha/aboutfcrha.htm/</a></p>
Trails and Sidewalks Committee	<p>To report to the Board of Supervisors for the purpose of providing citizen input and oversight to planning and developing a countywide trails system.</p> <p><a href="http://www.fairfaxcounty.gov/trails/">www.fairfaxcounty.gov/trails/</a></p>
Transportation Advisory Commission	<p>To advise the Board of Supervisors and provide information and comments on major transportation issues faced by the county.</p> <p><a href="http://www.fairfaxcounty.gov/fcdot/tac/">www.fairfaxcounty.gov/fcdot/tac/</a></p>
Tree Commission	<p>To provide advice to the Board of Supervisors based on an annual reevaluation of the administration and implementation of local law relating to vegetation preservation and planting; to provide leadership in developing an understanding of the objectives and methods of tree conservation; to assist the Urban Forest Management Division in the development and maintenance of technical specifications and guidelines.</p> <p><a href="http://www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23331">www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23331</a></p>
Wetlands Board	<p>To preserve and prevent the despoliation and destruction of wetlands within its jurisdiction while accommodating necessary economic development in a manner consistent with wetlands preservation.</p> <p><a href="http://www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23219">www.fairfaxcounty.gov/bacs/BoardDetails.aspx?BoardID=23219</a></p>

### 1.2.4 Other Authorities and Commissions

The following authorities and commissions have regional environmental responsibilities:

**Fairfax County Water Authority (FCWA)** – FCWA, known as Fairfax Water, is Virginia’s largest water utility, serving one out of every four Virginians who obtain their water from public utilities. Fairfax Water operates two water treatment plants with a combined capacity of 345 million gallons per day and produces, on average, 170 million gallons of water per day. Fairfax Water also purchases up to 30 million gallons of water per day from the Washington Aqueduct. See [www.fairfaxwater.org](http://www.fairfaxwater.org).

**Northern Virginia Regional Commission (NVRC)** – NVRC is a regional council of 14 member governments in Northern Virginia. NVRC’s environmental programs and projects include those addressing water resources and solid waste and recycling. See [www.novaregion.org](http://www.novaregion.org).

**Northern Virginia Regional Park Authority (NVRPA)** – NVRPA was established in 1959 to protect natural resources from the threat of urban sprawl and provide recreational amenities. NVRPA currently owns about 7,000 acres in Fairfax County. See [www.nvrpa.org](http://www.nvrpa.org).

**Upper Occoquan Service Authority (UOSA)** – UOSA was formed in 1971 to construct, finance, and operate a regional water reclamation facility. It is currently authorized to process 54 million gallons of wastewater a day. See [www.uosa.org](http://www.uosa.org).

## 1.3 Energy and Environment Agencies and Business Areas

### 1.3.1 Department of Public Works and Environmental Services

The mission of the Fairfax County Department of Public Works and Environmental Services (DPWES) is to build and maintain healthy, safe and environmentally responsible communities in Fairfax County. DPWES’s areas of responsibility include building and infrastructure construction, land use, solid waste management and stormwater and wastewater management. The following highlights several DPWES divisions:

- **Capital Facilities** provides Fairfax County with quality, cost-effective buildings and infrastructure in a safe, timely, and environmentally-sound manner. The Capital Facilities division implements the county’s Green Building policy, described in both Sections 2.2.8 and 4.2. See [www.fairfaxcounty.gov/dpwes/conststruction/capitalprojects.htm](http://www.fairfaxcounty.gov/dpwes/conststruction/capitalprojects.htm).

- **Land Development Services** provides oversight and enforcement of erosion and sediment control and other environmental requirements for construction projects within the county. Its efforts support the county’s Tree Action Plan and Tree Canopy Goals, both of which are discussed in Section 3.6, and the Environmental Improvement Program.  
See [www.fairfaxcounty.gov/dpwes/develop/](http://www.fairfaxcounty.gov/dpwes/develop/).
- **The Solid Waste Division** protects Fairfax County citizens from disease, pollution and other contamination associated with the improper disposal of refuse by providing efficient and economical refuse collection services to citizens. It also develops, implements and manages comprehensive waste reduction and recycling programs to ensure that Fairfax County meets or exceeds the state’s goal of recycling 25 percent of the solid waste stream. The division’s innovative waste-to-energy and landfill gas capture and re-use programs are described in Section 4.6. Other initiatives are discussed in Section 3.7.  
See [www.fairfaxcounty.gov/dpwes/trash/dispfacilities.htm](http://www.fairfaxcounty.gov/dpwes/trash/dispfacilities.htm).
- **Stormwater Management** develops and maintains a comprehensive watershed and infrastructure management program that protects property, health and safety, enhances the quality of life and preserves and improves the environment. The business area plans, designs, constructs, operates, maintains and inspects the county’s extensive stormwater infrastructure. It also performs environmental assessments through coordinated stormwater and maintenance projects. Several Stormwater Management initiatives are discussed in Section 3.4.1.  
See [www.fairfaxcounty.gov/dpwes/stormwater/](http://www.fairfaxcounty.gov/dpwes/stormwater/).
- **Wastewater Management** safely collects and treats wastewater in compliance with all regulatory requirements using state-of-the art technology. The county’s wastewater collection and conveyance system, one of the nation’s largest sanitary sewer systems, covers nearly 234 square miles. The total system capacity is 157.18 million gallons of wastewater per day for about 340,000 residential and business connections in Fairfax County.  
See [www.fairfaxcounty.gov/dpwes/wastewater/](http://www.fairfaxcounty.gov/dpwes/wastewater/).

### 1.3.2 Other County Departments

A number of other county departments and agencies play instrumental roles in promoting environmental stewardship and prudently managing natural resources.

- **Fairfax County Park Authority (FCPA)**, which was created in 1950 by the Board of Supervisors, currently owns over 23,000 acres in Fairfax County. Its mission, as expressed in its *Great Parks, Great Communities Plan*, is: To set aside public spaces for and assist citizens in the protection and enhancement of environmental values, diversity of natural habitats and cultural heritage to guarantee that these resources will be available to both present and future generations. To create and sustain quality facilities and services that offer citizens opportunities for recreation, improvement of their physical and mental well-being, and enhancement of their quality of life.
- More information about FCPA, including its resource management practices, is provided in Section 3.5. See [www.fairfaxcounty.gov/living/parks/](http://www.fairfaxcounty.gov/living/parks/).
- **Department of Planning & Zoning** provides proposals, advice and assistance on land use, development review and zoning issues to those who make decisions on such issues in Fairfax County. DPZ's mission is to promote livable communities which enhance the quality of life for the present and the future. See [www.fairfaxcounty.gov/dpz/](http://www.fairfaxcounty.gov/dpz/).
- **Facilities Management Department (FMD)** provides a full range of facility management services to the approximately 180 county-owned and leased facilities in its portfolio. Key FMD services include energy management, capital renewal, maintenance, repair and renovation. The department also provides space planning and interior design services, as well as custodial, security and moving services. Several of FMD's energy-related initiatives and accomplishments are described in Section 4.4.
- **Department of Health**, through its Division of Environmental Health (DEH), protects and improves public health by using its regulatory authority to prevent, minimize or eliminate exposure to biological, chemical or physical hazards. DEH's regulatory activities include the permitting and inspecting of businesses and public facilities and the investigation of reports of public health and safety menaces. Section 3.9 discusses four of the environmental hazards that DEH addresses: disease-carrying insects, rabies, radon, and naturally-occurring radon. See [www.fairfaxcounty.gov/hd/eh/](http://www.fairfaxcounty.gov/hd/eh/).
- **Department of Vehicle Services (DVS)** provides fleet management services support to all county customers and ensures that county vehicles and equipment are maintained in accordance with all federal, state and county safety and environmental policies, procedures and

regulations. DVS is fully committed to conservation of the county's natural environment and to initiatives that contribute to cleaner air and water. Section 4.7 discusses several of these DVS initiatives. See <http://www.fairfaxcounty.gov/dvs/>.

## 1.4 Inter-agency Collaboration and Coordination

Fairfax County has long recognized the need for coordinated and proactive policies and initiatives to address its environmental and energy related challenges. Federal and state guidelines and regulations demand diligence in the development of concrete strategies for a healthy environment, as well as inter-agency and inter-jurisdictional coordination to address environmental issues that know no organizational or political boundaries.

### 1.4.1 Internal Collaboration and Coordination

The county has established two committees to facilitate agency collaboration and coordination: the Environmental Coordinating Committee (ECC) and its companion, the Energy Efficiency Conservation and Coordinating Committee (EECCC). Both are inter-agency management committees intended to facilitate communication among agencies and to break down walls that separate individual agencies and their respective missions. Committee members act as advisors to and a “sounding board” for each other about environmental and energy issues, including programs, initiatives and strategies.

Both committees develop recommendations on policy and practice related to the environment and energy efficiency, which are then presented to the appropriate parties (i.e., the County Executive and/or the Board of Supervisors Environmental Committee). Recognizing that federal and state legislation and administrative proceedings may affect county policies, the ECC and EECCC keep abreast of the status of relevant legislation and administrative proceedings and provide guidance as to any application in Fairfax County.

Both committees also coordinate closely with the county's Environmental Quality Advisory Council (EQAC), which is an independent, board-appointed advisory committee. EQAC is tasked with reporting the state of the environment in Fairfax County and in recommending a variety of policy and programmatic actions that the board can take in support of the environment. EQAC also provides a forum for citizen input on environmental issues through its annual public hearing and e-mail address. See [www.fairfaxcounty.gov/dpz/eqac/](http://www.fairfaxcounty.gov/dpz/eqac/) for more information regarding

EQAC and its *Annual Report on the Environment*.

### 1.4.2 Regional Collaboration—Metropolitan Washington Council of Governments

As discussed in Section 1.2.1, board members are active participants in committees and initiatives within the metropolitan Washington, D.C. region, particularly those sponsored by the Metropolitan Washington Council of Governments (COG). County staff is also active on a regional basis. The COG committees and boards in which county staff participates includes:

- COG Climate, Energy and Environment Policy Committee
- COG Built Environment and Energy Advisory Committee
- COG Metropolitan Washington Air Quality Committee and the MWAQC Technical Advisory Committee
- COG Transportation Planning Board
- COG Water Resources Technical Committee

Information about these and other COG committees and boards is available at [www.mwcog.org/about/](http://www.mwcog.org/about/).

## 1.5 Partner Organizations

Fairfax County provides financial or other tangible support to a number of agencies and non-profit organizations that promote the general health and welfare of the community. The county's environmental partners include:

**Clean Fairfax Council** works to prevent litter, encourage recycling and promote sustainability. See [www.cleanfairfax.org/](http://www.cleanfairfax.org/).

**Earth Sangha** promotes conservation through its native plant nursery and ecological restoration projects. See [www.earthsangha.org/](http://www.earthsangha.org/).

**Fairfax County Restoration Project** connects, creates and promotes efforts to restore ecosystem functions through collaboration with public, private, and volunteer organizations. See [www.fcrpp3.org/](http://www.fcrpp3.org/).

**Fairfax ReLeaf** works to conserve, restore and promote sustainable urban forests by engaging volunteers in tree planting projects. See [www.fairfaxreleaf.org/FFR/about.html](http://www.fairfaxreleaf.org/FFR/about.html).

**Northern Virginia Conservation Trust** helps local governments and private landowners preserve natural areas, trails, streams and parks through voluntary conservation easements. See [www.nvct.org/](http://www.nvct.org/).

**Northern Virginia Soil and Water Conservation District works for clean streams, protected natural resources and community engagement in Fairfax County. See [www.fairfaxcounty.gov/nvswcd/](http://www.fairfaxcounty.gov/nvswcd/).**



*The Wakefield Run Stream Restoration project, facilitated by the Northern Virginia Soil and Water Conservation District, brought together county and community partners to protect water quality.*



# SECTION 2

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REGULATORY, POLICY AND  
STRATEGIC FRAMEWORK

# REGULATORY, POLICY AND STRATEGIC FRAMEWORK

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## SECTION 2

### 2.1 Introduction

The Fairfax County Board of Supervisors (board) has set the framework for the county's environmental initiatives through its vision, goals, policies and ordinances and has dedicated considerable resources to implementing these initiatives. This section of the report addresses this framework.

**The board's vision statement includes the following** (paraphrased slightly):

*Our vision is to protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County by maintaining safe and caring communities, building livable spaces, connecting people and places, maintaining healthy economies, practicing environmental stewardship, creating a culture of engagement and exercising corporate stewardship.*

*We envision that local government, industry and residents will seek ways to use all resources wisely and to protect and enhance the county's natural environment and open space. As a result, residents will feel good about their quality of life and embrace environmental stewardship as a personal and shared responsibility.*

Vision of Fairfax County Board of Supervisors, available at [www.fairfaxcounty.gov/government/vision.htm](http://www.fairfaxcounty.gov/government/vision.htm).

### 2.2 Policies Adopted by the Board of Supervisors

#### 2.2.1 Priorities and Goals

Fairfax County will continue to protect our drinking water, air quality, stream valleys and tree canopy through responsible environmental regulations and practices. We will continue to take a lead in initiatives to address energy efficiency and sustainability and to preserve and protect open space for our residents to enjoy.

Fairfax County Statement of Priorities, available at [www.fairfaxcounty.gov/government/board/priorities/](http://www.fairfaxcounty.gov/government/board/priorities/).

*Environmental initiatives are driven by goals, policies and priorities agreed upon at the highest levels of the county government. Through its Statement of Priorities, the Board of Supervisors has pledged to engage residents and business and protect investment in eight critical areas, including "a clean, sustainable environment."*

The county's goals, adopted by the Board of Supervisors in 1988 and subsequently revised, serve as the basis for the Comprehensive Plan and encompass all aspects of the county government. Of 20 adopted goals, many speak directly to environmental protection and resource conservation:

**Environmental Protection** – *The amount and distribution of population density and land uses in Fairfax County should be consistent with water quality, ambient air quality and other environmental standards. Development in Fairfax County should be sensitive to the natural setting, in order to prevent degradation of the County's natural environment.*

**Energy Conservation** – *Fairfax County should promote energy efficiency and energy conservation within the public, commercial, residential, and industrial sectors.*

**Open Space** – *Fairfax County should support the conservation of appropriate land areas in a natural state to preserve, protect and enhance stream valleys, meadows, woodlands, wetlands, farmland, and plant and animal life. Small areas of open space should also be preserved in already congested and developed areas for passive neighborhood uses, visual relief, scenic value, and screening and buffering purposes.*

Three other goals, "Quality of Life," "Land Use" and "Transportation," also have environmental components. The Fairfax County Goals reflect the belief of the community that environmental protection and preservation are overarching components of the quality of life. They demonstrate an understanding of the interdependence of decisions regarding private development, transportation and public works with the environment. How we use land affects, and is affected by, the natural environment.

See the board's statement of priorities at [www.fairfaxcounty.gov/government/board/priorities/](http://www.fairfaxcounty.gov/government/board/priorities/) and the county's goals at [www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/preface.pdf](http://www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/preface.pdf).

### **2.2.2 Environmental Agenda**

Fairfax County has long recognized the need for proactive policies and initiatives to address its environmental challenges. Indeed, environmental considerations are embedded in the county's policy and regulatory documents, and the county has pursued a myriad of environmental initiatives that continue to grow in number and complexity.

For this reason among others, at its regular meeting on Monday, June 21, 2004, the board, in continuation of its long history of environmental vigilance and dedication, endorsed and adopted the "Environmental

Excellence for Fairfax County: A 20-year Vision,” also known as the Environmental Agenda. The Environmental Agenda is organized into six themes:

- Growth and Land Use.
- Air Quality and Transportation.
- Water Quality.
- Solid Waste.
- Parks, Trails and Open Space.
- Environmental Stewardship.

The Agenda centers on two main guiding principles: First, conservation of our limited natural resources must be interwoven into all government decisions. Second, the county must be committed to providing the necessary resources to protect the environment.

In addition to the six central themes, the Environmental Agenda includes objectives relating to trees and climate change.

The Environmental Agenda provides specific guidance for board members, county staff and the community when making decisions that have environmental impacts. Environmental concerns are not seen as trade-offs or compromises but instead are foundational to the decision making process. The Environmental Agenda provides the necessary guidance for creative decision-making and leadership. It is an aggressive, multi-year plan that will require a long-term financial commitment.

The board’s Environmental Agenda is available at [www.fairfaxcounty.gov/living/environment/eip/bos\\_environmental\\_agenda.pdf](http://www.fairfaxcounty.gov/living/environment/eip/bos_environmental_agenda.pdf).

### 2.2.3 Cool Counties Climate Stabilization Initiative

The Cool Counties initiative was developed in collaboration with local, regional and national partners to reduce greenhouse gas emissions. Fairfax County’s climate change actions and initiatives are an integral part of the Environmental Agenda. They include:

- Reducing greenhouse gas emissions in county government operations through efficiency, conservation and education.
- Implementing air quality, land use planning and zoning, transportation, tree and open space preservation, solid waste management, recycling and water conservation and reuse initiatives.
- Encouraging similar efforts in the wider community by supporting transit-oriented mixed-use development, green building and energy-conserving



design, particularly in redevelopment areas such as Tysons Corner.  
See [www.fairfaxcounty.gov/living/environment/coolcounties/](http://www.fairfaxcounty.gov/living/environment/coolcounties/).

#### 2.2.4 Energy Policy

The Fairfax County Energy Policy, adopted in 2009, promotes pragmatic conservation and management of energy resources. The policy supports nine measures:

- Energy efficiency and conservation in buildings, facilities, operations, and vehicles.
- The use of alternative and sustainable energy options.
- Waste reduction and recycling.
- The use of more fuel efficient and alternate fuel vehicles in the county's fleet.
- Implementation of energy efficiency and conservation projects.
- Generation of energy on-site.
- Land use patterns and transportation systems that serve to reduce energy use.
- Intergovernmental energy efficiency efforts.
- Energy efficiency and conservation efforts by county employees, employers and residents.

The inter-agency Energy Efficiency and Conservation Coordinating Committee works to develop a comprehensive energy program. Partners include county agencies, schools, residents and employers.

The energy policy is available at [www.fairfaxcounty.gov/living/environment/county-energy-policy.htm/](http://www.fairfaxcounty.gov/living/environment/county-energy-policy.htm/).

The primary implementation mechanism to address and support environmental and energy policies and goals set forth in the board's 2004 Environmental Agenda, the 2007 Cool Counties Initiative and the 2009 Energy Policy is the county's Environmental Improvement Program. Two collaborative inter-agency committees – the Environmental Coordinating Committee and the Energy Efficiency and Conservation Coordinating Committee – are vital to implementation, as they help ensure that cross-cutting action is coordinated across county agencies, authorities, and schools. More information on the Environmental Improvement Program is presented in sections 2.4.2 and 5 of this document.



The Comprehensive Plan guides land use-related decision-making about the environment by the county's Board of Supervisors, Planning Commission and Board of Zoning Appeals. It is also a guide for county staff and the public about development and redevelopment in the county.

The Plan consists of the Policy Plan, four Area Plans, the Plan map, and the Transportation Plan map. The Policy Plan provides broad, countywide policy guidance, while the Area Plans provide more specific recommendations for smaller geographic areas, often specific to individual parcels of land. Development proposals requiring zoning approval are evaluated in regard to how they would implement or otherwise support both Policy Plan and Area Plan guidance.

The Policy Plan contains goals, objectives, and policies relating to 11 functional elements:

- Land Use.
- Transportation.
- Housing.
- Economic Development.
- The Environment.
- Heritage Resources.
- Public Facilities.
- Human Services.
- Parks and Recreation.
- Revitalization.
- Visual and Performing Arts.

The plan provides objectives, policies and guidelines for future development in Fairfax County, while protecting natural and cultural resources. The policies and objectives in the Environment section address environmental resources, conservation, pollution, hazards and coordination as well as green building practices.

More information about the county's growth and land use policies is presented in Section 3.2 of this report.

See [www.fairfaxcounty.gov/dpz/comprehensiveplan/](http://www.fairfaxcounty.gov/dpz/comprehensiveplan/).

### **2.2.6 Tree Action Plan**

The Tree Action Plan is a 20-year strategy document to preserve and restore tree cover in Fairfax County. Members of the Fairfax County Tree Commission, county staff, residents and builders worked together to develop goals and recommendations.

The goals include:

- A commitment to the preservation of current tree assets.
- Enhancement of the legacy for future generations by increasing the quantity and quality of trees and wooded areas.
- More effective integration of urban forestry with planning and policy making.

Twelve core recommendations were defined with related goals, strategies and tactics.

After completing the plan, the Board of Supervisors adopted a 30-year tree canopy goal to increase the county's tree cover to 45 percent by the year 2037, and tree-related actions were featured in the Environmental Improvement Program. In 2008, the county's Tree Conservation Ordinance (Chapter 122 of the Fairfax County Code) was adopted. For information about implementation of the Tree Action Plan, please see Section 3.6.

More information about the Tree Action Plan is available at [www.fairfaxcounty.gov/dpwes/environmental/tap.htm](http://www.fairfaxcounty.gov/dpwes/environmental/tap.htm).

### **2.2.7 Solid Waste Management Plan**

The Solid Waste Management Program is responsible for the management and long-range planning for all refuse and recycling within the county.

Operations include:

- The operation of the I-66 transfer station.
- A privately operated Energy and Resource Recovery Facility.
- Two closed municipal solid waste landfills.
- A regional ash landfill operated by the county.
- Two recycling and disposal facilities that include the collection of household hazardous waste.
- Eight drop-off sites for recyclable materials.
- Equipment and facilities for refuse collection, disposal and recycling operations.

The Solid Waste Management Program protects the public interest through solid waste management planning and regulatory oversight by providing efficient and effective collection, recycling and disposal of solid waste for customers in an environmentally responsible manner.

The Solid Waste Management Program in the Department of Public Works and Environmental Services coordinates the provided services

and oversight. More information about the Solid Waste Program policies and efforts is presented in Section 3.7.

See [www.fairfaxcounty.gov/living/recycling/](http://www.fairfaxcounty.gov/living/recycling/).

### 2.2.8 Sustainable Development Policy for Capital Projects

Fairfax County supports green building in its own capital projects as well as private sector development. The Sustainable Development Policy for Capital Projects addresses Fairfax County facilities. The Environment section of the Fairfax County Comprehensive Plan covers the private sector.

County projects greater than 10,000 square feet in size must have a goal of achieving Silver certification in the Leadership in Energy and Environmental Design, or LEED®, rating system; smaller facilities are recommended for LEED certification. More information about the county's green building policies and efforts is presented in Sections 3.2.4 and 4.2 of this report. See [www.fairfaxcounty.gov/dpwes/construction/sdpolicy.pdf](http://www.fairfaxcounty.gov/dpwes/construction/sdpolicy.pdf).

### 2.2.9 Fairfax County Park Authority Policy



*Ellanor C. Lawrence Park*

“The integrated park system serves as the primary public mechanism for accomplishing two equally important purposes:

1. To protect and preserve environmentally sensitive land, habitat connectivity, and water resources, and areas of archaeological, historical and/or cultural significance; and
2. To provide opportunities for residents, workers and visitors to pursue leisure activities in safe, accessible, and enjoyable parks and community recreational facilities.”

Fairfax County Comprehensive Plan, available at [www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/parksrec.pdf](http://www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/parksrec.pdf).

The Fairfax County Park Authority manages 23,000 acres, 418 parks, five nature centers and a horticultural center, more than 300 miles of trails, over 650 public garden plots, 220 playgrounds, 779 athletic fields and Northern Virginia's only state natural area preserve.

The Fairfax County Park Authority Board, appointed by the Board of Supervisors, works collaboratively with constituents, partners, stakeholders and government leaders to champion the preservation and management of natural and cultural resources and facilitate the development of park and recreation programs and facilities. To guide park planning and programs, numerous policies and plans have been adopted:

- **Fairfax County Comprehensive Plan – Parks and Recreation** – Provides guidance and goals for park planning and land use decisions affecting the conservation of natural and cultural resources, protection of environmental quality, provision of public facilities and human services on parkland. [www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/parksrec.pdf](http://www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/parksrec.pdf)
- **Fairfax County Park Authority Policy Manual** – This manual provides guidance in arriving at decisions in accordance with the Park Authority mission, objectives and associated laws; it allows, however, discretion and latitude to consider case-specific circumstances, situations and/or conditions. [www.fairfaxcounty.gov/parks/parkpolicy/](http://www.fairfaxcounty.gov/parks/parkpolicy/)
- **Great Parks, Great Communities 2010-2020 Comprehensive Park System Plan** – This document offers a long-range plan for the place-based, physical aspects of the park system, its land, its natural and cultural resources and its facilities. [www.fairfaxcounty.gov/parks/plandev/greatparks/](http://www.fairfaxcounty.gov/parks/plandev/greatparks/)
- **Natural Resource Management Plan** – This plan coordinates agency-wide efforts to achieve the natural resource preservation mission of the Fairfax County Park Authority and implement agency Policy 201 – Natural Resources. [www.fairfaxcounty.gov/parks/nrmp.htm](http://www.fairfaxcounty.gov/parks/nrmp.htm)
- **Cultural Resource Management Plan** – This plan provides the tools, policies and practices to best manage and protect cultural resources, both on parkland and countywide. [www.fairfaxcounty.gov/parks/gmp/crmpfinal.pdf](http://www.fairfaxcounty.gov/parks/gmp/crmpfinal.pdf)
- **Park Master Plans** – General guides for appropriate park uses and their approximate locations within a specific park site. The plans serve as long-range visions (10-20 year timeframe) for future development and programming. [www.fairfaxcounty.gov/parks/plandev/mparchives.htm](http://www.fairfaxcounty.gov/parks/plandev/mparchives.htm)

## 2.3 Ordinances Adopted By the Board of Supervisors

Fairfax County's regulations support, complement and implement the county's environmental policies and state and federal mandates. They are the "shall" requirements that accompany the "should" policies. Both are critical to the success of the county's comprehensive environmental program.

The Fairfax County Code contains all county-adopted ordinances and associated requirements. These ordinances are not static but are reviewed and updated as needed. The current set of county ordinances is available at <http://library.municode.com/index.aspx?clientId=10051>. Environmental ordinances and other ordinances with key environmental provisions include:

- Chapter 62, Fire Protection.
- Chapter 67.1, Sanitary Sewers and Sewage Disposal.
- Chapter 68.1, Individual Sewage Disposal Facilities.
- Chapter 70.1, Private Water Well Ordinance.
- Chapter 101, Subdivision Provisions (including, by reference, the Public Facilities Manual).
- Chapter 103, Air Pollution Control.
- Chapter 104, Erosion and Sedimentation Control.
- Chapter 107, Problem Soils.
- Chapter 108, Noise.
- Chapter 109.1, Solid Waste Management.
- Chapter 112, Zoning Ordinance (including Floodplain Regulations, the Airport Noise Impact Overlay District and the Water Supply Protection Overlay District).
- Chapter 113, Water Use, Emergency Regulations.
- Chapter 114, Agricultural and Forestal Districts of Statewide Significance.
- Chapter 115, Local Agricultural and Forestal Districts.
- Chapter 116, Wetlands Zoning Ordinance.
- Chapter 118, Chesapeake Bay Preservation Ordinance.
- Chapter 120, Heritage, Specimen, Memorial and Street Tree Ordinance.
- Chapter 122, Tree Conservation Ordinance.
- Chapter 123, Coastal Primary Sand Dune Ordinance.
- Chapter 124, Stormwater Management Ordinance.

Other ordinances also have environmental provisions that are secondary to other purposes.

## 2.4 Funding Mechanisms

### 2.4.1 Funds Used for Environmental Efforts

Fairfax County supports environmental initiatives through several county agencies and funds. Each year, the General Fund supports priority projects through a rigorous project selection process in support of the Environmental Agenda. Recent funding has been included for projects such as: lighting retrofits and upgrades at Fairfax County Park Authority facilities for energy efficiency and conservation; support for the Park Authority's Invasive Plant Removal Program; Energy Education and Outreach initiatives; the Green Purchasing Program; the installation of a weather station for efficient water usage at Twin Lakes Golf Course; and other strategic environmental initiatives. General Fund support is provided as available on an annual basis.

The General Fund also supports two non-profit environmental agencies through a contributory fund. For several years, Fairfax County has contributed to Earth Sangha, an environmental nonprofit organization which provides numerous volunteer opportunities involving environmental work. Fairfax ReLeaf is another nonprofit organization of volunteers that plants and preserves trees and restores forest cover on public and common lands in Northern Virginia.

Several important environmental program areas are supported through funding sources outside of the General Fund.

The Wastewater Management Program monitors the Chesapeake Bay water quality program, which requires reductions in the amounts of nutrient pollutants discharged from wastewater treatment facilities. A phased approach has been under way to renovate and upgrade current plant facilities to accommodate these more stringent nutrient discharge requirements. The Wastewater Management Program is primarily supported by sewer service charges and availability fees; these funds are used to fully recover program operation and maintenance costs, debt service payments and capital project requirements attributable to improving wastewater treatment effluent quality as mandated by state and federal agencies.

The Solid Waste Management Program is responsible for all refuse and recycling within the county. Operations include a county-owned and operated refuse transfer station, a privately-owned and operated Energy/Resource Recovery Facility, two closed municipal solid waste landfills, a regional ash fill operated by the county, two recycling and disposal

facilities, eight drop-off sites for recyclable materials and equipment and facilities for refuse collection, disposal and recycling operations. The Solid Waste Program includes the following funds: Leaf Collection; Refuse Collection and Recycling Operations; Refuse Disposal; Energy/Resource Recovery Facility; I-95 Refuse Disposal. These funds are all supported by special revenues fees and charges.

The Stormwater Services fund is also essential in supporting environmental mandates such as those aimed at protecting the Chesapeake Bay and the water quality of other local waterways. This fund is supported by a special service district fee currently based on 2.25 cents per \$100 of assessed real estate value. This fund is used to improve, operate and maintain the county's stormwater system, meet state and federal regulatory and water quality standards and meet dam safety requirements. The stormwater fee also supports contributions to both the Northern Virginia Soil and Water Conservation District (NVSWCD) and the Occoquan Watershed Monitoring Program (OWMP). The NVSWCD is an independent subdivision of the Commonwealth of Virginia that provides leadership in the conservation and protection of Fairfax County's soil and water resources. The OWMP and the Occoquan Watershed Monitoring Laboratory were established to ensure that water quality is monitored and protected in the Occoquan Watershed.

Finally, Fairfax County was awarded a federal Energy Efficiency and Conservation Block Grant as a result of the American Recovery and Reinvestment Act of 2009. This funding of \$9.6 million was used to complete several energy projects such as: heating, ventilation and air conditioning systems; energy management control systems; lighting and lighting control systems; an enterprise sewer consolidation project; outreach and education to county residents including residential energy audits; and a comprehensive greenhouse gas emissions inventory that included both county operations and community-wide emissions.

#### **2.4.2 Environmental Improvement Program**

The Environmental Improvement Program (EIP) was first developed in 2005 by the county's Environmental Coordinating Committee (ECC) in response to direction by the board following the adoption of its Environmental Agenda on June 21, 2004. Until recently, the EIP was largely a compilation of project, initiatives and actions that the county had taken, was in the process of taking or could take to support board-adopted environmental and energy policies and goals.

The EIP was updated annually through a coordinated and collaborative process. Please see [www.fairfaxcounty.gov/living/environment/eip/](http://www.fairfaxcounty.gov/living/environment/eip/) for further information regarding past EIPs.

In consultation with the Board of Supervisors and the county's Environmental Quality Advisory Council, staff revised the EIP in 2012 to include a more formal project selection and prioritization process to better support the board-adopted Environmental Agenda.

In this revised process, EIP project proposals are evaluated and prioritized annually. Projects identified through this process are forwarded to the county executive for consideration for inclusion in the advertised budget. A description of the EIP project selection process and additional information about EIP projects are provided in Section 5.3.1 of this report.



## SECTION 3

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### PROMOTING A SUSTAINABLE COMMUNITY

# PROMOTING A SUSTAINABLE COMMUNITY

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## SECTION 3

### 3.1 Introduction

Section 2 of this report identified the broad policy framework guiding the county's sustainability initiatives. This section addresses how the county furthers the policy framework through promotion of sustainability within the community.

In its Environmental Agenda, adopted in 2004 and revised in 2007, the Board of Supervisors concluded that environmental stewardship is both a key responsibility and a critical legacy of any elected public body. As such, "the Board of Supervisors will have as one of its chief goals to integrate environmental planning and smart growth into all we do and to leave our land, water and air quality, better than we found it." The board's far-sighted goal is found on page 11 of the Environmental Agenda, available at [www.fairfaxcounty.gov/living/environment/eip/bos\\_environmental\\_agenda.pdf](http://www.fairfaxcounty.gov/living/environment/eip/bos_environmental_agenda.pdf).

Achieving this goal of sustainability requires an on-going commitment to support environmental stewardship in every aspect of daily life. Fairfax County has made this commitment to sustainability, as demonstrated by an extensive range of policies, programs and efforts, including those promoting:

- Transit-oriented mixed-use development and green building practices.
- Clean air and reduced carbon emissions.
- Healthy waterways and clean drinking water
- Adaptive, holistic management of natural resources.
- Tree canopy conservation, forest management and access to open space.
- Recycling and other waste management initiatives that minimize use of landfills.
- Outreach and educational programs that support stewardship values.
- Reduction of environmental hazards to human health and quality of life (e.g., biological, chemical and physical hazards, noise, light pollution and visual pollution).

### 3.2 Growth and Land Use

Both Fairfax County and the larger metropolitan Washington, D.C. area are expected to experience substantial growth into the future.

Fairfax County' 2013 population of approximately 1.1 million is projected to increase to over 1.2 million by 2025. Over this same period, the number

of housing units will increase from about 408,000 to over 455,000. The Metropolitan Washington Council of Governments (COG) forecasts that regional population will grow by 1.5 million between 2010 and 2040, increasing from 5.58 million to over 7 million. COG forecasts that between 2010 and 2040 the region will add over 1.2 million jobs, with about 220,000 of these new jobs located in Fairfax County.

The question, then, is not if the county will grow, but how it will grow.

The county's growth and land use policies favor growth in mixed-use, transit-oriented centers. These centers provide for employment growth near both transit opportunities and residential areas. They also support vibrant communities by creating safe and attractive streets for pedestrians and reducing the need for vehicle trips and the resulting traffic congestion.

### 3.2.1 Zoning and Planning

Land use in Fairfax County is regulated by the Zoning Ordinance. Each parcel of land in the county is zoned, and the zoning establishes both rights and restrictions on the use and development of that parcel. These restrictions include *allowed uses and standards*, including setback, building height, open space and parking requirements. Additional requirements exist in "overlay" districts that have been established to address area-specific issues, such as water quality within the Occoquan Reservoir watershed.

Development that conforms to allowed uses and standards under the zoning ordinance proceeds "by right" – that is, it is approved administratively and does not require a public hearing. Legislative approval following public hearing is required for other development:

- Requests for special permit uses are subject to approval by the Board of Zoning Appeals.
- Requests for special exceptions or to change the zoning of a parcel (rezoning) are subject to approval by the Board of Supervisors.

The Fairfax County Planning Commission holds public hearings and provides recommendations to the Board of Supervisors on all special exception and rezoning proposals.

In making decisions on these matters, members of the boards and Planning Commission are guided by the Comprehensive Plan. This plan, which is discussed in Section 2.2.5, describes the county's land use vision for the future and includes county-wide and area-specific policies to help attain this vision.

More information about the Zoning Ordinance and process is available at [www.fairfaxcounty.gov/dpz/zoning/](http://www.fairfaxcounty.gov/dpz/zoning/). The Comprehensive Plan is available at [www.fairfaxcounty.gov/dpz/comprehensiveplan](http://www.fairfaxcounty.gov/dpz/comprehensiveplan).

### 3.2.2 Transit-Oriented Mixed-Use Development

The Policy Plan volume of the county's Comprehensive Plan contains the Board of Supervisors' goals, policies and objectives regarding land use, transportation, housing, the environment, human services, public facilities, parks and recreation, revitalization, economic development, heritage resources and visual and performing arts.

The land use and transportation policies of the Comprehensive Plan emphasize locating mixed uses, including employment and multifamily housing, in activity centers (e.g., the Tysons Corner Urban Center, suburban centers, community business centers and transit station areas) with transportation options, especially rail transit. Transit-oriented mixed-use development (TOD) guidelines were incorporated into the Policy Plan in March 2007.

In June 2010, the Board of Supervisors adopted an amendment to the Comprehensive Plan for the Tysons area. The Plan amendment, which was the culmination of one of the largest targeted planning efforts in county history, supports TOD concepts, including the provision of housing in employment centers. This amendment, which was designed to take advantage of the four new Metro stations to be built in the area, received the 2011 Daniel Burnham Award from the American Planning Association. This award is granted to only one urban plan in the nation each year for advancing the science and art of planning.

Other Plan amendments that support TOD concepts and/or mixed use development and connectivity include those for Annandale, Bailey's Crossroads, Seven Corners, Franconia-Springfield, Lake Anne Village Center, the Fairfax Center Area, areas near Fort Belvoir and near future rail stations in the Reston and Herndon areas. Additionally, the county is partnering with Arlington County on planning and design of the Columbia Pike Streetcar project, which would extend a new rail transit line into Baileys Crossroads. It is anticipated that efforts to incorporate TOD, mixed use and connectivity concepts into the Comprehensive Plan will continue into the future.

The Plan's guidance is implemented through the approval of zoning applications. Approved and pending rezoning applications regarding TOD and mixed use development include those affecting properties in Tysons,

Reston, the Dulles Suburban Center, Merrifield, Springfield, the Vienna Metrorail station area and the Richmond Highway corridor.

The Policy Plan is available at [www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/](http://www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/). More information about TOD is available in the Land Use section of the Comprehensive Plan, available at [www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/landuse.pdf](http://www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/landuse.pdf), particularly Objectives 2, 6 and 16 and Appendix 11.

### 3.2.3 Revitalization



In furtherance of the County's strategy to concentrate growth in activity centers, as well as to encourage investment and redevelopment in the county's older commercial areas, the Board of Supervisors established a Revitalization Program under the auspices of the Office of Community Revitalization.

Five areas – Annandale, Baileys Crossroads/Seven Corners, McLean, Richmond Highway and Springfield – have been

established as Commercial Revitalization Districts (CRDs) within the Zoning Ordinance. Two other areas – Lake Anne and Merrifield – are designated as Commercial Revitalization Areas (CRAs) within the Comprehensive Plan. These designations are intended to foster quality new development and redevelopment, thereby improving the economic viability, appearance and function of these areas. The board has also emphasized the importance of revitalization in other areas of the county, including Springfield Mall, Reston and Tysons.

Developments in CRD/CRAs are eligible for some flexibility in the application of zoning and site plan regulations, as well as expedited zoning review. As these areas are primarily the urbanizing areas of the county, most have adopted Plan guidance and urban design and streetscape guidelines that promote mixed-use, pedestrian-oriented environments. In addition, the county has an agreement with VDOT that permits more urban street sections in Tysons and is working to expand that agreement to the CRD/CRAs.

Over the last several years, these areas have been the focus of development activity in the county. For example, Merrifield has been transformed from a largely industrial area into a vibrant mixed-use area incorporating residential, retail and office uses. Merrifield is attracting new residents and bringing economic benefits to the surrounding community. The Mosaic at the Merrifield Town Center is also the county's first project to benefit from a Tax Increment Financing agreement.

In Springfield, a vision for a walkable, well-connected urban village was established in the "Springfield Connectivity Study" that was adopted by the Board of Supervisors in 2010. Since that time, a number of sites within Springfield have been redeveloped, including several for hotels. Most notably, the Springfield Town Center is currently being totally renovated, with an anticipated reopening in fall 2014. Ultimately, the mall property will become a shopping and entertainment center with a mix of retail, hotel, office and residential uses.

Significant multi-family residential development is underway along the Richmond Highway Corridor and Huntington Avenue. In McLean, a pilot project that is undergrounding utilities and providing new streetscape is in process, and a new primarily residential mixed-use development was approved in July 2014. Another primarily residential mixed-use development is anticipated to be approved in Annandale in 2014. Following the adoption of the Comprehensive Plan for Tysons in 2010, the board has approved over 45 million square feet on new development; almost three million square feet is currently under construction of which over half is residential development. The Comprehensive Plan was amended recently at the four new Metro station locations in Reston and a Plan Amendment is under study for the Seven Corners area to replan these areas into mixed-use pedestrian-oriented environments. More information about revitalization is available at [www.fcrevit.org](http://www.fcrevit.org).

### 3.2.4 Green Buildings

**Green Building Policy** — In addition to adopting a green building policy that applies to public capital projects, as discussed in Section 4.2.1, Fairfax County has adopted green building policies for private sector development. These policies for private sector development are found in the Comprehensive Plan and implemented through the zoning process.

The Policy Plan volume of the Comprehensive Plan includes broad support for green building practices. It also establishes links between green building/energy conservation practices and the attainment of certain



*Richard Byrd Library*

Comprehensive Plan options and planned uses, as well as development densities and intensities. One example of these linkages involves proposals at the high end of the planned density/intensity range in the county's growth centers. In these centers, green building certification through the Leadership in Energy and Environmental Design (LEED®) program or its equivalent is recommended for certain nonresidential and multi-family residential proposals. Another example that applies countywide is the recommendation for other residential projects to incorporate green building practices sufficient to attain certification under an established residential green building rating system that incorporates multiple green building concepts and that includes an ENERGY STAR® Qualified Homes designation or comparable level of energy performance.

The Area Plan volumes of the Comprehensive Plan include area-specific green building policy. For example, the Tysons Corner Urban Center Area Plan recommends a LEED Silver or equivalent level of certification for nonresidential development. Plan guidance recommends similar efforts for specific areas within the Richmond Highway Corridor, an area near the Town of Herndon and areas near the Huntington and Franconia-Springfield Metrorail stations. Another example of an area-specific policy is found in the Annandale Community Business Center Plan. This Plan includes an incentive development option that allows for increased building heights in certain areas where any of a number of benefits are provided, including commitments to LEED Gold or LEED Platinum certification.

During the zoning application review process, county staff receives commitments from applicants to proffers that include green building certification and other green building efforts. At the time of finalization of this report, commitments to green building certification had been

made in over 100 approved zoning applications, with over 70 linked to LEED certification (and over 35 of those to certification at the LEED Silver or higher level). As some of these projects will have multiple buildings, certification commitments apply to over 170 buildings.

More information about the county's green building policies for private sector development is available at [www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/environment.pdf](http://www.fairfaxcounty.gov/dpz/comprehensiveplan/policyplan/environment.pdf) (Objective 13).

**Green Building Priority Plan Review** — Both residential and commercial development projects that will be designed to attain certain thresholds of green building design are eligible for shorter waiting times during the building plan review process. Commercial projects designed to reach a minimum LEED rating of silver are eligible for this incentive, as are residential projects designed to, as a minimum, attain one of the following rating levels: LEED for Homes Silver; National Green Building Standards Silver; Earthcraft Select; or three “Globes” in the Green Globes rating system. Other green building rating programs are evaluated for approval on a case-by-case basis.

**County Incentives for Solar Installations** — Current solar incentives include a waiver for the permit application fee (solar hot water or solar photovoltaic projects) and a limited solar tax incentive in accordance with Va. Code Section 58.1-3661. This is covered by the county ordinance in Article 18, Chapter 4, of the Fairfax County Code. Essentially, qualifying solar equipment as approved by the Department of Public Works and Environmental Services (DPWES) can result in a tax credit (not an exemption) against the amount of normal property taxes due. The credit is determined by applying the local tax rate to the value of the certified solar equipment (the value is typically the cost of the equipment).

The tax credit is available the first tax year following the date of application. The credit is good for five years. Although the concept for this was generally aimed at homes, both commercial and residential properties qualify. The link provided is the application from DPWES at [www.fairfaxcounty.gov/dpwes/forms/solarenergy.pdf](http://www.fairfaxcounty.gov/dpwes/forms/solarenergy.pdf)

There are approximately 792 total solar permits issued by DPWES at 614 unique addresses. Some solar jobs require multiple permits. Because solar projects are sometimes embedded within other home improvement projects the actual number of solar project installations in the county is likely higher than these numbers. The vast majority of these have been residential permits.

### 3.3 Air Quality and Transportation

The federal Clean Air Act was passed in 1970 to protect public health and welfare. Congress amended the Act in 1990 to establish requirements for areas not meeting the National Ambient Air Quality Standards (NAAQS) for ground-level ozone (smog), oxides of nitrogen (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), lead and particulate matter (PM).

The Clean Air Act Amendments of 1990 (CAAA) established a legal process for evaluating air quality and identifying and classifying nonattainment areas according to the severity of its air pollution problem. Although emissions from stationary sources such as industrial power generation facilities and manufacturing are significant contributors to overall air quality, the focus of this section will be on transportation related (mobile) emissions.

Since 1970, significant progress has been made in reducing mobile source emissions in the Washington Metropolitan region, despite increases in population, employment and vehicle miles traveled. Most of the emissions reductions have resulted from cleaner vehicles and cleaner fuels.

Transportation agencies, both state and local, have also contributed to emission reductions through the implementation of transportation system management (TSM) strategies such as traffic signalization projects and high occupancy vehicle lanes, and through transportation demand management (TDM) strategies such as transit facilities and pedestrian and bicycle programs. Nevertheless, mobile sources continue to contribute to overall air quality issues and remain an area of concern to regulatory agencies and to the general public. More recently, mobile source air toxics and greenhouse gas emissions have also become concerns.

#### 3.3.1 Air Quality Planning in the Washington Metropolitan Region

Under Section 174 of the CAAA, the governors of Maryland and Virginia and the mayor of the District of Columbia certified the Metropolitan Washington Air Quality Committee (MWAQC) to develop specific recommendations for a regional air quality plan in the Washington, DC-MD-VA nonattainment area.

Members of MWAQC include: elected officials from the Cities of Bowie, College Park, Frederick, Gaithersburg, Greenbelt, Rockville and Takoma Park in Maryland and Alexandria, Fairfax and Falls Church, Manassas and Manassas Park in Virginia; representatives of the Montgomery and Prince George's

county councils; the Montgomery and Prince George's county executives; the mayor of the District of Columbia and representatives of the Council of the District of Columbia; and representatives of Calvert, Charles, and Frederick counties in Maryland, and Arlington, Fairfax, Loudoun and Prince William counties in Virginia. Representatives of the general assemblies of Maryland and Virginia, the state air management directors, the state transportation directors and the chairman of the National Capital Region Transportation Planning Board also are members of MWAQC.

The Metropolitan Washington Council of Governments (COG), in close cooperation with state air quality and transportation agencies, provides technical support to MWAQC. Staffs from the local counties and cities provide additional technical support.

MWAQC also has established an Air Quality Public Advisory Committee (AQPAC) to provide recommendations regarding public participation in the development of the air quality plans. AQPAC members represent academic, business, civic and environmental groups.

In addition, MWAQC works with the Interstate Air Quality Council (IAQC), a cabinet-level collaboration among the District of Columbia, the state of Maryland and the commonwealth of Virginia that includes the secretaries of the environment and transportation. The purpose of the IAQC is to address issues of interstate transport of air pollutants and to provide a sound process for improving regional air quality.

Once MWAQC approves the air quality attainment plan, it will be forwarded to the Interstate Air Quality Council for approval. The governors and the mayor (or their designees) are then required to submit the air quality State Implementation Plans (SIPs) to the U.S. Environmental Protection Agency (EPA) to meet the requirements of the CAAA.

### **3.3.2 Transportation Planning in the Washington Metropolitan Region**

Transportation planning in the Washington metropolitan region is heavily influenced by air quality planning. Transportation plans are tested to ensure that the projects in the plan, when considered collectively, contribute to the air quality improvement goals embodied in the CAAA. A series of tests are performed with computer models that predict how much air pollution will be generated over the next 25 years by facilities in the plan, and how much the air will be improved by cleaner gasoline standards and many other factors.

If the transportation plan is found to meet regional air quality goals, federal agencies certify that the plan is “in conformity.” In other words, the plan “conforms” to air quality improvement goals. If the plan encounters difficulty in meeting conformity, transportation agencies may be required to adopt Transportation Emission Reduction Measures, such as ridesharing and telecommuting programs, improved transit and bicycling facilities, clean fuel vehicle programs or other possible actions.

The transportation conformity rule and the Clean Air Act require that Transportation Control Measures (TCMs) in approved SIPs be implemented.

State air, environmental and health agencies are typically responsible for the development of SIPs that explain how each nonattainment area will meet the requirements of the CAAA. However, state and local transportation agencies are required to implement the transportation measures, so it is important that they take an active role in the development of the SIP.

### **3.3.3 Washington Metropolitan Air Quality Status**

EPA designated the Washington region as a “Marginal” nonattainment area for the 2008 eight-hour ozone National Ambient Air Quality Standard (NAAQS). This designation became effective on July 20, 2012. To meet the federal eight-hour standard for ozone, the Washington metropolitan region is required to develop a SIP to reduce all ozone precursor emissions to a level sufficient to attain the federal eight-hour standard by 2015.

One of the first steps in the development of a SIP is the preparation of an emissions inventory, which is based on the actual or modeled emissions from all sources of air pollution within the nonattainment area. Mobile source emissions are categorized by on-road and non-road emissions. The emissions inventory helps define the extent of the pollution problem, relative to the air quality standards in current and future years. State and local transportation agencies need to work closely with environmental agencies to develop the on-road emission inventory; this improves the SIP and helps avoid future conformity problems. Emission estimates for on-road mobile sources are a function of two measures: vehicle miles of travel (VMT) and emissions rates (the rate of pollutants emitted in the course of travel based on vehicle speed and other factors). EPA has developed tools and models to estimate on-road emissions.

Transportation planners address air quality issues in two contexts: the regional and project scales. During the transportation conformity process, these regional-scale emissions are often compared to

allowable levels, or "budgets." Project-scale analyses involve "hot spot" assessments focused on whether pollutant concentrations near roads exceed health-based standards, or whether project implementation increases or decreases emissions.

The SIP allocates emissions reduction targets to each source category. For on-road mobile sources, this target usually becomes an area's motor vehicle emissions budget. These budgets are, in effect, a cap on emissions. The SIP's motor vehicle emissions budget will be used in the transportation conformity process to cap allowable on-road emissions resulting from Transportation Improvement Program and Regional Transportation Plan implementation.

### 3.3.4 Fairfax County Transportation Initiatives



Fairfax County contributes funding for the operations of the Washington Metropolitan Area Transit Authority (WMATA). In addition, the county's Department of Transportation (DOT) has a number of initiatives supporting transit use in Fairfax County. The Employer Services Program provides outreach to employers on transportation demand management strategies, including rideshare incentives and promotions, computerized ridematching, carpool incentives such as preferred parking, subsidies and telework programs.

Other DOT efforts include: the Connector Bus system; the "RideSources" program, which provides ridesharing information and ridematching assistance to commuters (part of the regional Commuter Connections

system); the Community Residential Program, which assists residential communities with the assessment and promotion of alternatives to single occupant vehicle trips; and the provision of Park-and-Ride lots. Employees are eligible to receive a subsidy for transit use of up to \$120 per county employee. More information is available at [www.fairfaxcounty.gov/fcdot/](http://www.fairfaxcounty.gov/fcdot/).

### 3.4 Water Resources

The Federal Water Pollution Control Act of 1948 was enacted as the first law to address water pollution. Increased awareness and concern of water pollution in the following years throughout the U.S. led to amendments to the law in 1972 which became known as the Clean Water Act (CWA).

The Clean Water Act requires states and their municipalities to meet certain water quality standards for all contaminants in surface waters. The Act established: authority for EPA to implement pollution control programs (with delegation to the states); a basic structure for regulating pollutant discharges (through construction, industrial, wastewater, and municipal separate storm sewer systems or MS4 permits) water quality standards for surface waters (including impaired waters and total maximum daily loads); and the need to address critical issues in the Chesapeake Bay.

Additionally, in 1974 Congress passed the Safe Drinking Water Act, which regulates public drinking water supply through national health-based standards for drinking water from every day water systems. The law has been amended twice and requires actions to be taken to protect drinking water and its sources.

Since the passage of the Clean Water Act and the Safe Drinking Water Act, federal and state agencies have had great success in controlling pollution from point sources (industrial and wastewater discharges) and protecting public water supplies. In more recent years, continued efforts to improve the water quality of rivers, estuaries and lakes have led to an increased focus on addressing nonpoint source pollution such as agricultural and urban stormwater runoff.

#### 3.4.1 Stormwater

Fairfax County has made landmark investments in addressing stormwater management and controlling water pollutants. Stormwater is the runoff from rainfall and snowmelt that flows across the land and impervious areas such as paved streets, parking lots and building rooftops. Stormwater runoff can pick up and carry sediments, nutrients, toxic substances,

pathogens and other pollutants to lakes, streams, rivers, wetlands and coastal waters. These pollutants have the potential to harm drinking water supplies, recreation and aquatic life. In addition, impervious surfaces prevent water from infiltrating into the ground, causing high volumes of stormwater runoff to instead surge into storm drains at high speeds. When a surge of stormwater runoff empties into receiving streams, it can severely erode stream banks and damage sensitive stream valley ecosystems. The county is proactive in the mission of environmentally friendly stormwater management and control through ongoing activities. For more information on stormwater management funding to protect streams and rivers, see section 2.4, Strategic Framework: Funding Mechanisms.



*Big Rocky Run Stream Restoration  
Before and After*

**Watershed Management Planning** — Over the past several years, the Board of Supervisors adopted watershed management plans covering all 30 of the county’s watersheds. Each plan provides an assessment of stormwater conditions, recommends protection strategies, prioritizes improvement projects and encourages public involvement. The watershed management plans and recommended improvement projects can be found online at: [www.fairfaxcounty.gov/dpwes/watersheds/](http://www.fairfaxcounty.gov/dpwes/watersheds/).

**Stormwater Capital Projects** — Fairfax County and its partners continue to implement stormwater management-related capital projects, including flood mitigation projects, stormwater management facility retrofits, low impact development (LID) projects, stream restoration projects and stream stabilization projects.

**Operations** — Fairfax County maintains and operates its stormwater management facilities and stormwater drainage infrastructure consistent with the requirements of its Municipal Separate Storm Sewer System (MS4)



*Fair Woods Pond Retrofit  
Before and After*

permit, which regulates discharges of stormwater from the county's MS4. In an effort to minimize the pollutants reaching the MS4 and streams, the county also implements best management practices for: operation of county roadways; use of pesticides, herbicides and fertilizers on county properties; controlling industrial and high risk runoff; detection and elimination of sources of illegal discharges; and spill response.

**Monitoring and Assessment**  
– Fairfax County conducts

watershed water quality monitoring, dry weather screening, wet weather industrial high risk screening, physical habitat evaluations and biological assessment of fish and aquatic macroinvertebrates.

**Public Outreach and Education** — Fairfax County continues to partner with local organizations to implement programs informing residents of water quality issues and encouraging environmental stewardship.

**Strategic Initiatives** — Fairfax County and its partners work proactively to improve the county's stormwater management through the flood response program, MS4 program planning and watershed management planning.

Stormwater Management Status Reports are available at [www.fairfaxcounty.gov/dpwes/stormwater/stormwater\\_status.htm](http://www.fairfaxcounty.gov/dpwes/stormwater/stormwater_status.htm)

### 3.4.2 Wastewater

Fairfax County's Wastewater Management Program provides wholesale sewer service to the Towns of Herndon and Vienna, the Cities of Fairfax and Falls Church, and a small portion of Arlington County in addition to Fairfax County. The county's wastewater system has been featured on United States Environmental Protection Agency's website for innovative use of Capacity, Management, Operation, and Maintenance (CMOM) techniques as well as system rehabilitation and diagnostic methods for

minimizing sanitary sewer overflows, which in turn protect the quality of life in Fairfax County and water quality in its streams. See [www.epa.gov/npdes/pubs/sso\\_casestudy\\_fairfax.pdf](http://www.epa.gov/npdes/pubs/sso_casestudy_fairfax.pdf).

**Wastewater Capital Projects** — a majority of the recent capital projects have been related to upgrading the wastewater treatment plants that serve the county to meet the more stringent requirements for improving the water quality in the Potomac River and the Chesapeake Bay. The plant upgrades will result in drastic reductions in nitrogen levels in the treated wastewater that is discharged to the Potomac River (either directly or through a tributary) and ultimately the Chesapeake Bay.



*Solar mixer at Noman Cole, Jr. Pollution Control Plant.*

**Operations** — The county’s wastewater system consists of approximately 3,200 miles of sewer lines, 64 sewage pumping stations, 280 sewage grinder pumps and 53 flow metering stations. The 100 million gallons per day (MGD) of wastewater generated in the county is conveyed to five regional treatment plants, including the county-owned and operated Noman M. Cole, Jr. Pollution Control Plant, in compliance with the requirements of its Virginia Pollutant Discharge Elimination System permit. The treatment plants serving the county under service agreements are listed below, showing the county’s allocated capacity at each of the plants:

<b>Plant</b>	<b>County Capacity (MGD)</b>
Noman Cole, Jr. ....	67.00
Colchester (Private) .....	0.08
Prince William County Service Authority .....	0.10
Blue Plains (DC Water) .....	31.00
Alexandria (AlexRenew) .....	32.40
Arlington County .....	3.00
Upper Occoquan Service Authority .....	22.60
Loudoun County (Broad Run) .....	1.00
	<b>TOTAL: 157.18</b>

**Public Outreach** — Wastewater Management employees bring Sewer Science to the county’s high schools. The Sewer Science program, which meets the requirements of Virginia Standards of Learning, is a hands-on program that teaches high school students about wastewater treatment in a laboratory setting. See [www.fairfaxcounty.gov/dpwes/wastewater/sewerscience.htm](http://www.fairfaxcounty.gov/dpwes/wastewater/sewerscience.htm).

**Wastewater Re-use** — In addition to wastewater re-use at the waste-to-energy facility described in Section 3.7.2, fully treated wastewater is being delivered to the Laurel Hill Golf Course and the South County Little League Athletic Fields for irrigation purposes. In addition, the Upper Occoquan Service Authority (UOSA) discharge also supplements flows into the Occoquan Reservoir and is an internationally recognized example of successful indirect reuse.

**Virginia Environmental Excellence Program** — The Virginia Department of Environmental Quality has established the Virginia Environmental Excellence Program to encourage superior environmental performance by use of environmental management systems and pollution prevention. Wastewater Management has received the highest level of the Environmental Excellence Program, which is “Extraordinary Environmental Enterprise,” or E4.

### 3.4.3 Water Supply Planning

Virginia experienced serious droughts in 1999 and 2002. Largely as a result of these droughts, in November 2005 the State Water Control Board (SWCB), a regulatory board comprised of citizen-appointees, enacted regulations establishing a planning process and criteria that all local governments must use to develop local or regional water plans. The purposes of these regulations, codified at 9 VAC 25-780, *Local and Regional Water Supply Planning*, are to: (1) ensure that adequate and safe drinking water is available to all citizens of the Commonwealth; (2) encourage, promote and protect all other beneficial uses of the Commonwealth’s water resources; and (3) encourage, promote and develop incentives for alternative water sources, including but not limited to desalinization. Localities were required to submit their water supply plans (WSPs) by November 2011 to the Virginia Department of Environmental Quality (DEQ), which administers regulations enacted by the SWCB.

Fairfax County has participated in the development of a regional water supply plan (WSP) encompassing 21 Northern Virginia jurisdictions. In 2007, these jurisdictions designated the Northern Virginia Regional Commission (NVRC) as the lead agency responsible for developing the

Northern Virginia WSP. Fairfax Water ([www.fairfaxwater.org](http://www.fairfaxwater.org)), which provides water service to nearly two million people in the Northern Virginia counties of Fairfax, Loudoun and Prince William, the cities of Fairfax, Falls Church and Alexandria and the Town of Herndon, served as the county's designated agent in the WSP development process.

The Northern Virginia WSP includes numerous elements, including descriptions of existing water uses, sources and resource conditions, an assessment of projected water demand, water management actions that address water conservation and an evaluation of alternative water sources to address projected deficits in water supplies.

The SWCB also conducts a five-year review to assess the adequacy of a WSP to meet water demands. A revised WSP must be submitted within 5 years if the circumstances have changed significantly or new information renders a WSP inadequate. WSPs must be reviewed, revised if necessary and resubmitted to DEQ every ten years from the date of last approval.

The planning horizon for Northern Virginia's WSP extends to the year 2040. The WSP assessment indicates that new sources of supply are needed in the 2035-2040 timeframe in order to avoid emergency restrictions and potential water shortages.

The county also has adopted regulations restricting water use during drought and emergencies. These regulations, located in Chapter 113 (Water Use, Emergency Regulations) of the County Code, satisfy state requirements for drought response and contingency plans.

More information regarding the Northern Virginia WSP is available at [www.novaregion.org](http://www.novaregion.org).

## 3.5 Parks and Ecological Resource Management

### 3.5.1 Open Space in Fairfax County

Fairfax County contains approximately 48,230 acres of open space owned by local, state and federal agencies and organizations. (This number does not include unknown but substantial acreage under special tax district, rural or low-density residential areas or lands owned by civic associations within subdivisions.)

**Almost half of the open space in the county** – over 23,000 acres – is owned by the Fairfax County Park Authority (FCPA). The Board of Supervisors



*Burke Lake Park*

created FCPA in December 1950 and authorized it to make decisions concerning land acquisition, park development and operations in the county. Today, FCPA manages and operates over 400 parks. In addition to its role in providing recreational facilities and services, FCPA is the primary public mechanism for preserving environmentally-sensitive land and resources and areas of historic significance in Fairfax County. More information about FCPA is available at [www.fairfaxcounty.gov/parks/](http://www.fairfaxcounty.gov/parks/).

Listed below are other owners of substantial open space in the county, including state and federal agencies and organizations.

**Northern Virginia Regional Park Authority (NVRPA)** – NVRPA was established in 1959 to protect natural resources from the threat of urban sprawl and provide recreational amenities. NVRPA owns about 7,000 acres in Fairfax County, primarily along the Bull Run-Occoquan river corridor and reservoir, the Potomac River and on Pohick Bay on Mason Neck. See [www.nvrpa.org](http://www.nvrpa.org).

**Reston Association (RA)** – Founded as Virginia's first planned residential community in the mid-1960s, RA owns over 1,350 acres of open space. Its holdings include 55 miles of paved and natural surface trails, more than 700 acres of forest, 50 meadows and numerous water resources including four lakes and 20 miles of streams. See [www.reston.org](http://www.reston.org).

**U.S. Department of Defense** – Fort Belvoir is a strategic sustaining base for the U.S. Army that houses numerous agencies providing logistical, intelligence and administrative support. The county considers about 4,990 of Fort Belvoir's 8,500 acres to be open space. See [www.belvoir.army.mil/default.asp](http://www.belvoir.army.mil/default.asp).

**U.S. Department of Interior, Bureau of Land Management (BLM)** – In October 2001, BLM exchanged a portion of the former Lorton Prison

property to acquire the 800-acre Meadowood Special Recreation Management Area. The acquisition was intended to preserve open space on Mason Neck and provide wildlife habitat, recreation and environmental education. See [www.blm.gov/es/st/en/fo/lpfo\\_html/meadowood\\_history.html](http://www.blm.gov/es/st/en/fo/lpfo_html/meadowood_history.html).

**U.S. Department of the Interior, Fish and Wildlife Service** – The 2,277-acre Elizabeth Hartwell Mason Neck National Wildlife Refuge, located on Mason Neck, is the oldest and largest refuge within the Potomac River refuge complex. Established in 1969 under the Endangered Species Act, its focus is on forest, marsh and riverine habitat important to the bald eagle. See [www.fws.gov/refuge/mason\\_neck](http://www.fws.gov/refuge/mason_neck).

**U.S. Department of the Interior, National Park Service** – George Washington Memorial Parkway is a 7,600-acre national park protecting the landscape, historic sites and native habitat of the Potomac shoreline. See [www.nps.gov/gwmp/index.htm](http://www.nps.gov/gwmp/index.htm).

**Virginia Department of Conservation and Recreation** – Mason Neck State Park is comprised of 1,825 acres within the Elizabeth Hartwell Mason Neck National Wildlife Refuge that include wetlands, forest, open water, ponds and open fields. See [www.dcr.virginia.gov/state\\_parks/mas.html](http://www.dcr.virginia.gov/state_parks/mas.html).

Additionally, certain organizations work to preserve open space through the negotiation and acquisition of conservation easements. A conservation easement typically restricts an owner's rights to subdivide or develop his/her property, to remove trees, or to excavate or fill the property. One such organization active in Fairfax County is the Northern Virginia Conservation Trust (NVCT). NVCT, which was founded in 1994, helps local governments and private landowners voluntarily preserve natural areas, trails, streams and parks. NVCT has helped preserve 739 acres in Fairfax County. See [www.nvct.org](http://www.nvct.org).

### 3.5.2 Natural Resource Management

Until a few decades ago, land management consisted of benign neglect, with areas left alone under the assumption that they were self-sustaining. Land management professionals now understand that there are tremendous pressures on remaining natural areas, that their conditions are declining and that active management is necessary to restore their health.

Today, natural resources are considered natural capital. This capital consists of various elements: living organisms; non-living components such as air, water and soil; the ecosystems they form; and the



*Huntley Meadows Turtles*

environmental services they provide, including cleaning air and water, supporting wildlife and contributing to the quality of life. Natural capital is not self-sustaining; instead, deliberate care and investment are required to enhance, protect and preserve it.

Fairfax County has implemented an extensive and multi-faceted natural resource/capital management program based on the following principles and guidelines:

- ***Relieve or remove the stresses on natural communities so they can heal themselves.*** Human land disturbance, excessive deer browse, non-native invasive species and impacts from changing weather patterns are some of the most important stresses on natural areas.
- ***Apply holistically on a landscape scale.*** Managing for systems helps sustain the greatest biodiversity assembled in communities of organisms and retain the greatest percentage of ecosystem services.
- ***Be adaptive.*** Adaptive management is comprehensive and on-going. It involves assessment, planning, execution, monitoring to determine success and modification of plans to incorporate lessons learned.
- ***Engage and educate stakeholders.*** The most effective management must occur across landscapes, property lines and political boundaries. Because resource management issues and methods are often complex, support requires the stakeholders' understanding.

Agencies that manage resources in Fairfax County include the Park Authority, Urban Forest Management, the Stormwater Division of the Department of Public Works and Environmental Services, the Police Department and the Northern Virginia Soil and Water Conservation

District. Additionally, the county has engaged many partners, including non-profit organizations such as the Audubon Society of Northern Virginia, Earth Sangha, Fairfax RELeaf and the Fairfax Chapter of Virginia Master Naturalists.



Examples of the county's natural resource/capital management programs include:

- Fairfax County Watershed Planning and Watershed Plan Implementation ([www.fairfaxcounty.gov/dpwes/watersheds/](http://www.fairfaxcounty.gov/dpwes/watersheds/))
- Fairfax County Park Authority Invasive Management Area Program (IMA) ([www.fairfaxcounty.gov/parks/resources/IMA/](http://www.fairfaxcounty.gov/parks/resources/IMA/))
- Fairfax County Deer Management Program ([www.fairfaxcounty.gov/living/animals/wildlife/management/deer-management.htm](http://www.fairfaxcounty.gov/living/animals/wildlife/management/deer-management.htm))
- Fairfax County Goose Management ([www.fairfaxcounty.gov/living/wildlife/species/geese.htm](http://www.fairfaxcounty.gov/living/wildlife/species/geese.htm))

### 3.5.3 Policy and Regulatory Mechanisms for Protecting Natural Resources

Section 2 describes the regulatory, policy and strategic framework of the county's environmental programs, including a brief introduction to the county's Comprehensive Plan and environmental ordinances. Section 3.5.3 discusses three county regulations that play a key role in the protection of natural resources: the Chesapeake Bay Preservation Ordinance, the Floodplain Regulations of the county's Zoning Ordinance and the Wetlands Zoning Ordinance. Also discussed is the Environmental Quality Corridor policy in the Comprehensive Plan, which plays a significant role in protecting natural resources.

### **3.5.3.A Chesapeake Bay Preservation Ordinance**

All of Fairfax County drains into the Potomac River and ultimately the Chesapeake Bay. As a result, land use and development activities in the county can adversely impact the water quality of both the county streams and downstream resources.

In 1988, the Commonwealth of Virginia enacted the Chesapeake Bay Preservation Act, which required 84 localities in Virginia, including Fairfax County, to institute water quality protection measures to improve the declining health of the Chesapeake Bay and its tributaries. The county adopted the Chesapeake Bay Preservation Ordinance in 1993 to protect both local streams and the Chesapeake Bay from pollution due to land use and development in the county. The ordinance was substantially revised in 2003.

The Chesapeake Bay Preservation Ordinance imposes water quality requirements on all development and redevelopment projects in the county. Sensitive areas along streams, rivers and other waterways throughout the county are designated as *Resource Protection Areas* (RPAs). With some exemptions and exceptions, land disturbance in RPAs is prohibited. Other areas of the county that are not in RPAs have been designated as *Resource Management Areas* (RMAs). RMAs are comprised of land that, if improperly used or developed, have the potential to significantly harm water quality or diminish the functional value of the RPA. Collectively, RPAs and RMAs are known as Chesapeake Bay Preservation Areas.

More information about the Chesapeake Bay Preservation Ordinance, including maps and FAQs, is available at [www.fairfaxcounty.gov/dpwes/environmental/cbay/](http://www.fairfaxcounty.gov/dpwes/environmental/cbay/).

### **3.5.3.B Floodplain Regulation**

A floodplain is the flat area located adjacent to a stream channel that is prone to flooding. When stream banks overflow during or after a storm, the floodplain provides natural storage for the excess water. In Fairfax County, the 100-year frequency storm is used to determine the limits of the floodplain.

The Floodplain Regulations of the Zoning Ordinance establish two types of regulated floodplain areas:

- The “Minor Floodplain,” associated with streams with drainage areas between 70 and 360 acres.
- The “Major Floodplain,” associated with streams with drainage areas greater than 360 acres.

The Floodplain Regulations serve a number of purposes. They are intended to protect against loss of life, health or property from flood or other dangers. They are also intended to preserve and protect floodplains in as natural a state as possible, thereby (1) preserving wildlife habitats; (2) maintaining the natural integrity and function of the streams; (3) protecting water quality; and (4) promoting a zone for ground water recharge.

A limited number of uses are permitted in floodplains, although additional uses can be approved by the Board of Supervisors through a special exception. All floodplain uses are subject to a series of limitations that serve to protect public safety and minimize adverse environmental impacts associated with these uses.

Floodplain Regulations are addressed in Part 9 of Article 2 of the Zoning Ordinance, available at [www.fairfaxcounty.gov/dpz/zoningordinance/articles/art02.pdf](http://www.fairfaxcounty.gov/dpz/zoningordinance/articles/art02.pdf).

### **3.5.3.C Wetlands Zoning Ordinance**

Fairfax County has approximately 112 linear miles of tidal shoreline, according to the Center for Coastal Resources Management of the Virginia Institute of Marine Science. This shoreline traverses south along the Potomac River from Cameron Run to the Occoquan Reservoir, where the tidal influence terminates at the dam.

Tidal wetlands are valuable natural resources that help prevent flooding, improve water quality and provide habitat. The Wetlands Zoning Ordinance was adopted in recognition of the environmental functions provided by tidal wetlands in the county and the need to ensure that development activities in tidal areas occur in a manner that minimizes adverse impacts to these wetlands.

The Fairfax County Wetlands Board has adopted a “Living Shoreline” Stabilization Policy that encourages vegetative shoreline stabilization. The policy is available at [www.fairfaxcounty.gov/dpz/environment/finallivingshoreline.pdf](http://www.fairfaxcounty.gov/dpz/environment/finallivingshoreline.pdf).

Before making changes to waterfront property or undertaking land-disturbing activities, a property owner may need to obtain a permit from the Wetlands Board (and other agencies). Examples of such activities include:

- A construction project on or adjacent to a tidal body of water.
- A construction project in which fill material is placed in or near tidal wetlands.
- A project designed to protect property adjacent to the shoreline.

The Wetlands Board requires mitigation or compensation for unavoidable tidal wetlands loss, as explained in its policy, available at [www.fairfaxcounty.dpz/environment/wetlands/mitigation\\_compensation\\_policy\\_adopted.pdf](http://www.fairfaxcounty.dpz/environment/wetlands/mitigation_compensation_policy_adopted.pdf). Additional information for waterfront property owners is available at [www.fairfaxcounty.gov/dpz/environment/wetlands](http://www.fairfaxcounty.gov/dpz/environment/wetlands).

#### **3.5.3.D Comprehensive Plan Policy**

The *Environment* section of the Policy Plan volume of the Comprehensive Plan provides broad environmental policy guidance that is applied during the zoning process. The Environment section includes numerous policies, including those recommending the identification, protection and restoration of Environmental Quality Corridors (EQCs) and streams and buffer areas upstream of EQCs.

The EQC system is an open space system in Fairfax County designed to preserve, restore and link natural resource areas. The core of this system is the county's streams. The EQC policy recommends protection and restoration of environmentally-sensitive lands, including a number of features near streams (steep slopes in stream valleys, wetlands connected to stream valleys, and 100-year floodplains). The policy also recommends protection and restoration of upland habitats that augment the habitats and buffers provided by stream valleys. The EQC policy has been refined since its initial adoption in 1975 but continues to be a centerpiece of Fairfax County's environmental policy.

The Department of Planning and Zoning, which negotiates zoning commitments made by developers, estimates that EQC commitments have protected thousands of acres of land that would not otherwise have been protected through regulation. Flexible zoning provisions often allow developers to concentrate densities/intensities on the less-sensitive portions of their sites, thereby achieving both desired levels of development and the protection of EQCs and other desirable open space.

The EQC policy is found in Objective 9 of the Environment section of the Policy Plan, available at [www.fairfaxcounty.gov/dpz/comprehensiveplan/environment.pdf](http://www.fairfaxcounty.gov/dpz/comprehensiveplan/environment.pdf).

## **3.6 Trees and Tree Conservation**

An August 2010 study commissioned by the county using i-Tree Ecosystem Analysis assessed the vegetation structure, function and value of the Fairfax County urban forest as of 2009. According to the assessment,



Fairfax County's urban forest has over 20,900,000 trees that provide significant environmental, economic and social benefits. Each year, this urban forest removes 4,670 tons of pollution, sequesters 218,000 tons of carbon and stores 3,879,000 tons of carbon, providing an economic value of approximately \$106 million. Other economic benefits include residential energy savings of approximately \$11.9 million (based on 2002 prices) due to shading and evaporative cooling. The i-Tree Ecosystem Analysis is available at [www.fairfaxcounty.gov/dpwes/environmental/trees.htm](http://www.fairfaxcounty.gov/dpwes/environmental/trees.htm).

Awareness of rapid canopy loss in the early 1970s prompted Fairfax County to adopt its first tree preservation and planting ordinance in 1973. Since then, Fairfax County has been proactive in raising awareness about the importance of trees and forests to the community. Working with numerous agencies, organizations including the Fairfax County Tree Commission, and individuals, the county continues to refine how it cares for and protect trees.

### 3.6.1 Urban Forest Management

The Urban Forest Management Division (UFMD) of the county's Department of Public Works and Environmental Services is the primary county agency responsible for managing trees and forests in Fairfax County. The UFMD draws on science, education and strong partnerships to help achieve a healthy urban forest. Its key responsibilities and activities include:

- Implementing the Tree Action Plan. See [www.fairfaxcounty.gov/dpwes/environmental/tap.htm/](http://www.fairfaxcounty.gov/dpwes/environmental/tap.htm/).
- Conducting vegetation mapping and surveys.
- Developing ordinances and policy for tree preservation, including the Tree Conservation provisions of the county's Public Facilities Manual. See [www.fairfaxcounty.gov/dpwes/publications/pfm/chapter12.pdf](http://www.fairfaxcounty.gov/dpwes/publications/pfm/chapter12.pdf).

- Providing public education and outreach at a range of venues, including community tree planting events, school programs and local fairs.
- Partnering with non-profit environmental and tree planting groups in support of the Fairfax County 30-year tree canopy goal. See [www.fairfaxcounty.gov/dpwes/environmental/30year.htm](http://www.fairfaxcounty.gov/dpwes/environmental/30year.htm).
- Promoting the use of natural landscaping techniques on public and private property.
- Advocating for proffers and development conditions promoting tree conservation during land development. See [www.fairfaxcounty.gov/dpwes/environmental/proffers.htm](http://www.fairfaxcounty.gov/dpwes/environmental/proffers.htm).
- Reviewing tree conservation and landscaping activities on site plans.
- Monitoring construction sites and conducts post-construction tree preservation and landscaping inspections.
- Identifying and monitoring forest insect pest infestations throughout the county and controlling serious infestations of gypsy moth and fall cankerworm. See [www.fairfaxcounty.gov/dpwes/environmental/forest\\_pest.htm](http://www.fairfaxcounty.gov/dpwes/environmental/forest_pest.htm).

In addition, the Urban Forest Management Division provides staff support to the Tree Commission. The Tree Commission is comprised of 15 citizens appointed by the Board of Supervisors to advise the board on tree-related matters. These matters include tree conservation as well as vegetation preservation and planting. The commission also assists the UFMD in developing and maintaining technical specifications and guidelines. More information about the UFMD, including a link to the Tree Commission, is available at [www.fairfaxcounty.gov/dpwes/environmental/ufmdmain.htm](http://www.fairfaxcounty.gov/dpwes/environmental/ufmdmain.htm).

### 3.6.2 Tree Action Plan

The Tree Action Plan is a 20-year strategy for conserving and managing the county's tree resources. The Tree Action Plan, which was adopted in December 2006, was developed through a collaborative process that involved the Tree Commission, county staff, residents and builders. The Plan reflects three key goals: to commit to conserve current tree assets; to enhance the legacy for future generations; and to increase the effectiveness of urban forestry with planning and policymaking.

To achieve these goals, the Tree Action Plan includes 12 core recommendations that are premised on the urban forestry model. Under this model, trees are accorded a high priority and integrated into urban planning. Trees are not considered ornamental or decorative but, instead, are recognized as infrastructure providing environmental, economic and social benefits.

### Tree Action Plan Core Recommendations

- Engage and educate.
- Build strong partnerships and alliances.
- Optimize tree conservation in county policies.
- Improve air quality and address climate change through tree conservation.
- Improve water quality and stormwater management through tree conservation.
- Use ecosystem management to improve and sustain the health and diversity of our urban forest.
- Strengthen state-enabling authority for tree conservation.
- Encourage sustainable design practices.
- Plant and protect trees by streams, streets and trails.
- Optimize tree conservation in land development.
- Optimize tree conservation in utility and public facilities projects.
- Support and refine the county's urban forestry programs.

Each of the plan's 12 core recommendations includes goals, strategies and tactics to help achieve the recommendation.

The Board of Supervisors has taken a number of actions based on recommendations in the Tree Action Plan. For example, in June 2007, the board formally adopted a 30-year tree canopy goal. The board also has initiated a countywide tree planting program to improve air and water quality and to achieve other objectives of the board's Environmental Agenda. To support the tree planting program, the board established the Tree Preservation and Planting Fund (TPPF). The TPPF collects and disburses funding for tree-related projects to non-profit organizations, county agencies and regional government agencies.

More information, including links to the Tree Action Plan and the TPPF brochure, is available at [www.fairfaxcounty.gov/dpwes/environmental/tap.htm/](http://www.fairfaxcounty.gov/dpwes/environmental/tap.htm/).

## 3.7 Solid Waste Management

The Fairfax County Solid Waste Management Program (SWMP) is responsible for providing solid waste management services in an efficient and cost-effective manner while complying with federal and state environmental regulations. The SWMP has provided Fairfax County residents and businesses with waste disposal and recycling services since 1950.

### 3.7.1 Recycling

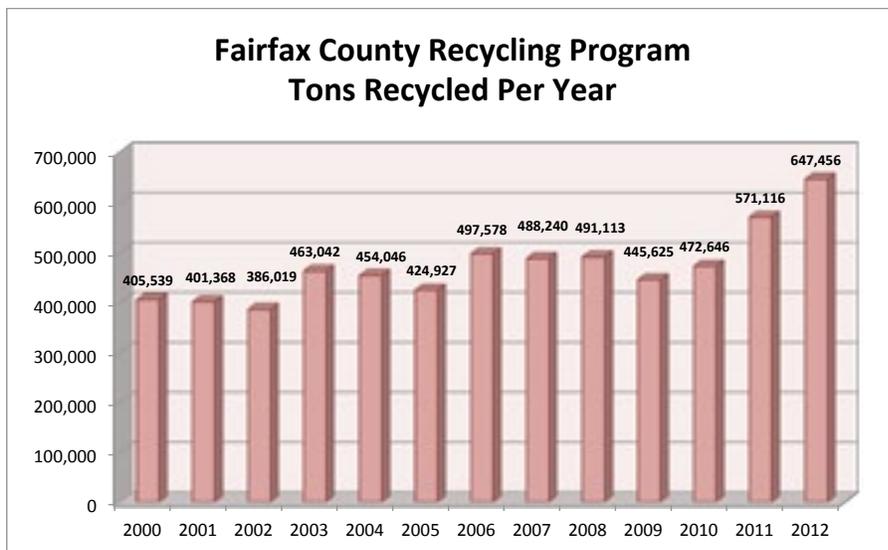


In 1990, the SWMP established a residential curbside recycling collection program. By 2012, Fairfax County recycled 51 percent of all municipal solid waste generated within the county.

In addition to curbside recycling, the SWMP has established a number of related recycling and waste disposal programs for county residents.

- Since the early 1990s, SWMP has operated two permanent collection sites where it accepts residents' household hazardous waste at no charge for disposal according to all local, state and federal regulations. SWMP also periodically holds remote collection events so that residents need not drive to the two sites. See [www.fairfaxcounty.gov/dpwes/trash/disphhw.htm](http://www.fairfaxcounty.gov/dpwes/trash/disphhw.htm).
- At monthly Electric Sundays events, county residents can recycle televisions, computers and peripheral devices – including keyboards, speakers, printers, external drives and other such materials – and unbroken fluorescent light bulbs and tubes, all at no charge. Since 2009, the county has collected over 1,000,000 pounds of obsolete electronics each year. See [www.fairfaxcounty.gov/dpwes/recycling/electric-sunday.htm](http://www.fairfaxcounty.gov/dpwes/recycling/electric-sunday.htm).
- Seven recycling drop-off centers are located throughout the county. Items accepted vary by location, but all sites accept newspaper, mixed paper, glass jars and bottles, and plastic bottles and jugs. See [www.fairfaxcounty.gov/dpwes/recycling/doclst.htm](http://www.fairfaxcounty.gov/dpwes/recycling/doclst.htm).

- Each year, SWMP hosts secure document shredding events in the county's nine supervisor districts. County residents can drop off up to five medium-sized boxes of sensitive documents for secure on-site shredding. See [www.fairfaxcounty.gov/dpwes/recycling/shredding.htm](http://www.fairfaxcounty.gov/dpwes/recycling/shredding.htm).



More information about the SWMP recycling programs is available at [www.fairfaxcounty.gov/living/recycling/](http://www.fairfaxcounty.gov/living/recycling/).

### 3.7.2 SWMP Green Initiatives

In addition to offering environmentally-responsible waste recycling and disposal options to residents, the SWMP strives to be environmentally responsible in its own operations. These operations include:

**Waste-to-Energy** — Solid waste disposal capacity in Fairfax County is provided by the county's waste-to energy facility, located in Lorton, Virginia. This facility burns about 3,000 tons per day of solid waste. Incineration avoids the need to landfill garbage and the resulting production of potent greenhouse gases. It also powers generators that produce about 80,000 megawatts of electricity; the sale of this electricity to the local electric utility offsets the operation of the county's solid waste management program. The facility has not exceeded



the limits in its air pollution control permit during its operational history. See [www.fairfaxcounty.gov/dpwes/trash/dispomsf.htm/](http://www.fairfaxcounty.gov/dpwes/trash/dispomsf.htm/).

**Landfill Gas** — The SWMP is responsible for managing two closed landfills in the county: the I-95 Landfill Complex and the I-66 Transfer Station. It has installed landfill gas (LFG) collection systems at both sites. At the I-95 Landfill Complex, LFG is used to generate about six megawatts of electricity, which is sold to the local electric utility. LFG from the I-95 site is also used in the combustion process at the county's nearby wastewater treatment plant, saving the county about \$500,000 per year in natural gas costs. At both the I-95 and I-66 sites, LFG is used to power gas heaters installed in maintenance facilities and truck washes, saving about \$90,000 in annual fuel costs. The county's LFG projects prevent the release of an estimated 300,000 tons of carbon dioxide emissions each year. See [www.fairfaxcounty.gov/dpwes/trash/dispmethrvc.htm](http://www.fairfaxcounty.gov/dpwes/trash/dispmethrvc.htm).

**Wastewater Re-use** — The SWMP partnered with the county's wastewater treatment program to develop a wastewater re-use project. Under this project, about 1.3 million gallons of treated but non-potable water is pumped from the wastewater treatment plant to the waste-to-energy facility, where it is used as cooling water. Substituting non-potable for potable (drinking) water conserves water resources and reduces water purchase costs. See [www.fairfaxcounty.gov/dpwes/wastewater/water\\_reuse/](http://www.fairfaxcounty.gov/dpwes/wastewater/water_reuse/).



Each of these operations is discussed in more detail in Section 4.6, *Waste Management*.

The SWMP continues to pursue green initiatives. It recently managed the design and construction of a new workers' facility at

the I-66 Transfer Station, which has been certified as a LEED Silver facility. At the I-95 Landfill Complex, the SWMP is exploring the development of additional power generating capacity. This project, part of the Lorton Green Energy Triangle, involves the possible installation of solar panel arrays on the cap of the closed landfill.

## 3.8 Community Outreach, Education and Stewardship

### 3.8.1 Community Stewardship Opportunities

A wide variety of Fairfax County programs engage adults and youth in volunteer opportunities and other hands-on environmental stewardship activities.

County residents interested in watershed stewardship have a number of volunteer opportunities, including:

- **Stream Monitoring** – Volunteers monitor local stream health four times each year. Training, equipment and certification are provided by the Northern Virginia Soil and Water Conservation District.
- **Storm Drain Marking** – The county’s network of storm drains directs stormwater to streams, not the wastewater treatment plant. As a result, substances dumped in the storm drains – from pet waste to trash – flow into county streams. To remind residents to protect the streams, program volunteers label storm drains with watershed-specific “no dumping” markers.
- **Stream Clean-ups** – Free supplies for litter cleanups in parks, streams and neighborhoods are provided through partnerships with community organizations including Clean Fairfax and the Alice Ferguson Foundation.
- **Tree Planting** – Fairfax County and partner organization Fairfax ReLeaf support volunteer tree planting in the spring and fall on community property, schoolyards and other sites.

More information about these and other watershed volunteer opportunities is available at [www.fairfaxcounty.gov/dpwes/stormwater/volunteer.htm#cleanups](http://www.fairfaxcounty.gov/dpwes/stormwater/volunteer.htm#cleanups).

Other volunteer opportunities focus on county parkland, including:

- **Invasive Management Area Program** – This Fairfax County Park Authority (FCPA) program recruits and trains volunteers to lead and participate in invasive plant removal in county parklands. See [www.fairfaxcounty.gov/parks/resources/ima/](http://www.fairfaxcounty.gov/parks/resources/ima/).
- **Trail Improvements** – FCPA has seven trail partner groups that have adopted sections of the Cross County Trail. Each group is responsible for oversight and routine maintenance of its individual section. Re-routings and other trail improvements are also coordinated through these groups. See [www.fairfaxcounty.gov/parks/cct/cctfaq.htm](http://www.fairfaxcounty.gov/parks/cct/cctfaq.htm).
- **Adopt-A-Field/Adopt-A-Park** – This program is a cooperative venture between FCPA and interested community organizations and citizens. Groups or individuals assume maintenance responsibility for designated

park areas or facilities. Areas within parks may include flower beds, playgrounds, stream valleys, trees and other points of interest. See [www.fairfaxcounty.gov/parks/volunteer/wp-adopt.htm](http://www.fairfaxcounty.gov/parks/volunteer/wp-adopt.htm).

More information about volunteer opportunities in the parks is available at [www.fairfaxcounty.gov/parks/volunteer/rmdvol-main.htm](http://www.fairfaxcounty.gov/parks/volunteer/rmdvol-main.htm).

County residents can also pursue service on one of the county's many boards, authorities and commissions that address environmental issues (see section 1.2.3 of this report). Residents interested in serving on these committees should contact their Supervisors.

In addition to volunteer opportunities, the county and its partner organizations offer activities that promote environmental stewardship. A number of such activities are offered by the Northern Virginia Soil and Water Conservation District, including:

- *Watershed -Friendly Garden Tour* – Rain gardens, green roofs, porous pavers and other features are highlighted in this annual tour of innovative home, school and community gardens. See [www.fairfaxcounty.gov/nvswcd/gardentour.htm](http://www.fairfaxcounty.gov/nvswcd/gardentour.htm).
- *Rain Barrel Program* – Participants build and take home low-cost rain barrels, reducing runoff and harvesting rainwater for re-use. Since 2007, more than 3,000 barrels have been distributed. See [www.fairfaxcounty.gov/nvswcd/rainbarrels.htm](http://www.fairfaxcounty.gov/nvswcd/rainbarrels.htm).
- *Build-Your-Own Composter* – Each workshop participant builds and takes home a low-cost tumbler-style composters built from a recycled pickle barrel, gas pipe and pre-cut 2x4s. See [www.fairfaxcounty.gov/nvswcd/announcements.htm](http://www.fairfaxcounty.gov/nvswcd/announcements.htm).
- *Seedling Sale* – NVSWCD distributes low-cost native shrubs and trees to residents each spring for planting on private property. See [www.fairfaxcounty.gov/nvswcd/seedlingsale.htm](http://www.fairfaxcounty.gov/nvswcd/seedlingsale.htm).

### 3.8.2 Presentations and Publications

One way the county promotes environmental awareness and stewardship is through its Facebook *Environment* page. Other ways include public education campaigns, presentations, awards and its website.

Young children can learn about a healthy environment with the “Stormy the Raindrop” program. This public education campaign encourages children to appreciate and take better care of their environment, and to pass on this desire to their peers and parents. The campaign includes two Stormy-themed activity books, puppet shows and numerous appearances at county events and venues.

The program earned Best of Category in the National Association of Counties 2012 Achievement Awards. More information is available at [www.fairfaxcounty.gov/dpwes/stormwater/stormy/](http://www.fairfaxcounty.gov/dpwes/stormwater/stormy/).

For older children and teens, educational programs sponsored by the Fairfax County Park Authority (FCPA) supplement the hands-on activities described in Section 3.8.1. For example, the county's Hidden Pond Nature Center and Park offers school-age children programs on wetlands ecosystems – its most requested program topic – as well as those on reptiles and amphibians and rocks, mineral and soil. More information about the Hidden Pond Nature Center school programs is available at [www.fairfaxcounty.gov/parks/hidden-pond/schoolmenu.htm](http://www.fairfaxcounty.gov/parks/hidden-pond/schoolmenu.htm)

Residents of all ages can watch television programs with environmental themes produced by the county and broadcast on its Channel 16 station. Programs include *Can the Grease*, *Stop Bagging our Streams*, *Green Buildings*, and *Live Energy Efficient Now*. These and other programs are available on a video-on-demand (VOD) basis at [www.fairfaxcounty.gov/cable/channel16/vod.htm](http://www.fairfaxcounty.gov/cable/channel16/vod.htm).

Meetings, seminars, festivals and townhall meetings provide additional options to enhance energy and environmental awareness. Speakers from county agencies and partner groups give presentations to neighborhoods and other community groups on a range of topics. Master Gardener, Master Naturalist and Tree Steward courses educate and establish a volunteer base for environmental projects and programs. Green Breakfast presentations sponsored by the Northern Virginia Soil and Water Conservation District engage county residents six times a year on emerging and innovative green topics. Meetings of the Fairfax County Environmental Quality Advisory Council (EQAC) ([www.fairfaxcounty.gov/dpz/eqac/](http://www.fairfaxcounty.gov/dpz/eqac/)) and other boards and commissions are open to the public and offer more opportunities to hear from speakers about environmental issues in the county.

Award ceremonies also create opportunities to further environmental awareness. For example, each year the Board of Supervisors recognizes those who dedicate their time and energy to benefit the environment and support county environmental initiatives. Since 2000, 49 Environmental Excellence Award winners have been selected. These awardees, who have been honored by the Board of Supervisors during its public meetings, include 16 county residents, 14 organizations, nine businesses and 10 county employees. Information about the 2014 award recipients is available at [www.fairfaxcounty.gov/dpz/eqac/awards.htm](http://www.fairfaxcounty.gov/dpz/eqac/awards.htm)

In addition to the VOD programs, the county's website offers a wealth of resources related to environmental awareness and stewardship.

For example:

- The county's *Energy Action Fairfax* webpages include energy-saving tips and innovative video presentations to help homeowners reduce their energy consumption. See [www.fairfaxcounty.gov/energyactionfairfax/](http://www.fairfaxcounty.gov/energyactionfairfax/).
- *Stewardship Brochures* published by the Park Authority address topics ranging from beavers to wildlife conflicts, while its *Nature Pages* help visitors explore the county's environmental and cultural resources. See [www.fairfaxcounty.gov/parks/resources/stewardshipbrochures.htm](http://www.fairfaxcounty.gov/parks/resources/stewardshipbrochures.htm).
- A *Water Overview* provided by the Department of Public Works and Environmental Services explains how the county manages various water uses – drinking water, stormwater and wastewater – and how residents can help keep water clean for future generations. See [www.fairfaxcounty.gov/dpwes/environmental/water.htm](http://www.fairfaxcounty.gov/dpwes/environmental/water.htm).
- The county's *Sustainability* web-page lists some of the most common sustainability topics with links to relevant county Web pages. See [www.fairfaxcounty.gov/living/environment/sustainability.htm](http://www.fairfaxcounty.gov/living/environment/sustainability.htm).

### 3.9 Environmental Health

The Health Department's Division of Environmental Health (DEH) protects and improves public health by preventing, minimizing, or eliminating exposure to biological, chemical and physical hazards. Its areas of responsibility are broad, including food safety; licensed businesses such as hotels, motels and day-care centers; disease vectors and pests; pools; and on-site well and septic systems.

The DEH safeguards public health through a variety of regulatory activities, including permitting and inspections. Environmental Health Specialists also investigate reports of public health and safety menaces in the community, conduct mosquito and tick surveillance, and engage in a range of educational activities.

Some of the environmental hazards that the DEH addresses include:

**Disease-Carrying Insects** – The bite of an infected mosquito, tick or other disease-carrying insect may result in a life-changing illness, such as West Nile virus or Lyme disease. The DEH's Disease Carrying Insect Program (DCIP), established in 2003, works to minimize the threat of insect-borne diseases through active surveillance, vector management and community

education activities to help protect county residents.

See [www.fairfaxcounty.gov/hd/westnile/](http://www.fairfaxcounty.gov/hd/westnile/).

**Rabies** – Rabies is a preventable viral disease of mammals most often transmitted through the bite of a rabid animal. The vast majority of rabies cases reported to the Centers for Disease Control and Prevention each year occur in wild animals like raccoons, skunks, bats and foxes. Domestic animals account for less than 10 percent of the reported rabies cases. State law and county ordinance require dogs and cats four months of age and older to be inoculated against rabies.

See [www.fairfaxcounty.gov/hd/rabies/](http://www.fairfaxcounty.gov/hd/rabies/).

**Radon** – Radon is a naturally-occurring radioactive gas produced by the breakdown of uranium in soil, rock and water. It cannot be seen, smelled or tasted. Long-term exposure to elevated radon levels is estimated to cause thousands of lung cancer deaths nationally each year. The Fairfax County Radon Potential Map provides a general description of radon within Fairfax County. The county Radon Web page also provides links for more information from the Virginia Department of Health and US Environmental Protection Agency. See [www.fairfaxcounty.gov/hd/air/radon.htm](http://www.fairfaxcounty.gov/hd/air/radon.htm).

**Naturally-Occurring Asbestos** – Naturally-occurring asbestos has been mapped in approximately 11 square miles of Fairfax County and Fairfax City. Asbestos-bearing rock is interspersed in the greenstone rock formations that underlie the surface soils in the orange soils group. Surface exposures of these rock formations are not usually seen.

See [www.fairfaxcounty.gov/hd/chs/natural-asb.htm](http://www.fairfaxcounty.gov/hd/chs/natural-asb.htm).

## 3.10 Noise, Light Pollution and Visual Pollution

While not traditionally considered to be sustainability issues, noise, light pollution and visual pollution can adversely affect the county's environment and quality of life.

### 3.10.1 Noise

The county has long had a Noise Ordinance that limits the noise that can be generated from stationary and other sources. Noise generated from airport and highway operations is not within the county's regulatory purview, however.

Although noise from airport operations is not addressed in the Noise Ordinance, the county has taken steps to ensure that land uses near

Washington Dulles International Airport will remain compatible with airport operations into the future. The Zoning Ordinance includes an Airport Noise Impact Overlay District in the area of the county near the airport. This district establishes interior noise standards and associated acoustical mitigation requirements that apply to development that is pursued within the district. Additionally, Comprehensive Plan policy recommends against new residential development within specific areas near the airport.

The Comprehensive Plan also provides guidance regarding land use compatibility near highways. Applying this guidance during the zoning process, the county has obtained commitments from developers to noise mitigation measures, including highway noise barriers and acoustical mitigation for noise-sensitive indoor areas.

A comprehensive set of links addressing various transportation and other noise-related concerns is available at [www.fairfaxcounty.gov/dpz/environment/noise](http://www.fairfaxcounty.gov/dpz/environment/noise).

### 3.10.2 Light Pollution

“Light pollution” is used to describe light output, primarily from exterior (outdoor) sources, that is excessive in amount and/or that causes harmful glare directed into: (1) the path of travel; (2) light-sensitive areas such as residential neighborhoods; or (3) the sky in general. Light pollution can occur in commercial, residential and roadway settings.

Light pollution can interfere with enjoyment of the night sky. Improper lighting can also waste energy. In recognition of these impacts, the county has established an Outdoor Lighting Ordinance. To reduce glare, the ordinance requires full cut-off lighting fixtures in most cases. Such fixtures prevent light from being emitted at or above a horizontal plane drawn through the bottoms of the fixtures.

The requirements of the Outdoor Lighting Ordinance do not affect the outdoor lights used by most homeowners. Requirements apply to roof and canopy lighting, architectural and landscape lighting, recreation/sports facility lighting and internally-illuminated signs. In addition, the ordinance establishes after-hours parking lot lighting reduction requirements for developed nonresidential lots that contain four or more parking light poles.

More information about the county’s outdoor lighting rules is available at [www.fairfaxcounty.gov/code/lighting/](http://www.fairfaxcounty.gov/code/lighting/).

### 3.10.3 Visual Pollution

Litter, unkempt properties and poorly-placed signs are typically considered examples of visual pollution that degrades the environment. Fairfax County has taken steps to address visual pollution, including:

- Public outreach on litter-related issues. See [www.fairfaxcounty.gov/dpwes/trash/litter.htm](http://www.fairfaxcounty.gov/dpwes/trash/litter.htm).
- A blight abatement program that provides for the reporting and remediation of vacated, dilapidated structures. See [www.fairfaxcounty.gov/code/property/blight/](http://www.fairfaxcounty.gov/code/property/blight/).
- Zoning Ordinance limitations on signs. See [www.fairfaxcounty.gov/dpz/zoningordinance/articles/art12.pdf](http://www.fairfaxcounty.gov/dpz/zoningordinance/articles/art12.pdf).
- A review process for proposed telecommunications towers. See [www.fairfaxcounty.gov/dpz/2232/submit\\_application.htm](http://www.fairfaxcounty.gov/dpz/2232/submit_application.htm).

In addition, in early 2013, Fairfax County and the Virginia Department of Transportation (VDOT) finalized an agreement regarding signs placed in VDOT public rights-of-way. State law makes all such signs, including political advertising, illegal. The agreement authorizes the county, acting on behalf of VDOT, to remove the illegal signs and fine the offenders in accordance with state code.



# SECTION 4

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PROMOTING SUSTAINABLE  
COUNTY OPERATIONS

# PROMOTING SUSTAINABLE COUNTY OPERATIONS

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## SECTION 4

### 4.1 Introduction

Fairfax County government has long been proactive in supporting sustainability, as described in the preceding sections. This section describes several of the county's innovative and successful efforts to implement environmental and energy goals for county facilities and operations. It concludes with a discussion of the county's greenhouse gas emissions inventory and results.

Significant efforts have been made over time to reduce the county's operational demand for energy through efficiency, conservation and education. The basis for these efforts is Fairfax County's strategic direction and commitment to achieve environmental and energy goals, including those set forth in the board's 2004 Environmental Agenda, the 2007 Cool Counties Initiative, the 2009 Energy Policy and the county's Comprehensive Plan.

Two collaborative inter-agency committees – the Environmental Coordinating Committee and the Energy Efficiency and Conservation Coordinating Committee – are vital to achieving these goals. These committees help ensure coordinated action across county agencies, authorities, and schools. Their meetings provide a forum for participants to share project updates, discuss emerging trends and technologies, candidly review their experiences with equipment and systems, and raise issues of mutual interest.

### 4.2 Building Design and Construction

#### 4.2.1 Green Building Policy for County Facilities

In 2008, the county Board of Supervisors adopted the Sustainable Development Policy for Capital Projects applicable to the construction of new county buildings and renovations or additions to existing buildings. The policy requires buildings with more than 10,000 square feet to be constructed to meet or exceed minimum green building standards.

Buildings are certified under established green building rating systems that recognize outstanding performance in several key areas:

- *Sustainable Sites* – discourages development on undeveloped land and seeks to minimize a building's environmental impacts.
- *Water Efficiency* – encourages the smarter use of water inside and out.

- *Energy & Atmosphere* – encourages the implementation of energy-wise strategies.
- *Materials & Resources* – encourages the use of sustainably produced materials and waste reduction, reuse and recycling strategies.
- *Indoor Environmental Quality* – promotes strategies that improve indoor air quality, acoustics and access to natural daylight.
- *Innovation in Design* – encourages the use of technologies and strategies that improve a building’s performance.
- *Regional Priority* – encourages builders to consider and address local high-priority environmental concerns.

Currently, 13 county buildings have satisfied the certification criteria established by the Leadership in Energy and Environmental Design (LEED®) program of the U.S. Green Building Council; of these, seven have been certified as LEED Gold buildings. Two buildings have received Green Globe certifications from the Green Building Initiative's environmental assessment and rating system for commercial buildings.



The Richard Byrd Library is one of the county’s LEED Gold buildings. The library, which achieved LEED Gold certification in November 2010, incorporates green building techniques and features that save an estimated \$15,000 in energy costs each year.

Features at the Richard Byrd Library include natural lighting and occupancy sensors, which reduce the need for artificial lights

that consume energy and generate heat. The library’s roof is designed to reflect sunlight in the summer to reduce the need for expensive cooling; in the winter, the roof directs more sunlight into the building to reduce the need to heat the building. Dual-flush toilets and other efficient plumbing fixtures in the building cut water consumption by more than 50 percent compared to a conventionally-designed library of the same size. More than 25 percent of construction materials were made with recycled content, including bathroom countertops made of recycled detergent bottles and other plastic products.

Information about the county's green building policy for its capital facilities, including a list of green buildings and their key features, is available at [www.fairfaxcounty.gov/living/environment/coolcounties/county\\_green\\_buildings.htm](http://www.fairfaxcounty.gov/living/environment/coolcounties/county_green_buildings.htm).

The county's green building policies for private sector development are discussed in Section 3.2.4. These policies are found in the Environment section of the Comprehensive Plan and implemented through the zoning process.

#### 4.2.2 Green Roofs

A 5,000 square foot green roof is located on the upper level of the five-story Herrity Building parking garage in the Government Center complex. The green roof is a demonstration project that should assist in the design of future green roofs. Its ability to absorb stormwater volume and related pollutants is monitored and compared to an unplanted area on the opposite side of the garage.

The project – which can be seen from county offices that issue permits to developers and builders – also showcases the three varieties of green roofs.

Within the vegetated roof area, three different planting levels illustrate the three types of green roofs: extensive, semi-intensive and intensive. The largest area, which is planted predominantly with tiny, drought-tolerant plants called sedums, is of the **extensive** type. Extensive green roofs have shallow soil layers of three to four inches and are the most common, lightest, and most low-maintenance type of green roof. **Semi-intensive** green roofs, like the shallow planters on the Herrity garage, have deeper soils – about four to eight inches – and support a greater variety of drought-tolerant plants, including shallow rooted perennials. **Intensive** green roofs are true roof-top gardens intended for public enjoyment, and can include water features, gardens, and even trees and shrubs.

### 4.3 Purchasing and Supply Management

#### 4.3.1 Green Purchasing Program

Fairfax County spends over \$700 million each year on goods and services. In July 2009, the county adopted an Environmentally Preferable Purchasing Policy (EPP Policy) directing county departments to consider the environmental impacts of the goods and services they purchase.

The EPP Policy is managed by the Department of Purchasing and Supply Management (DPSM) through its Green Purchasing Program. Through the

competitive procurement process, the county departments partner with innovative contractors to help improve the county's operational impact on the environment while saving money. The program also includes a focus on responsible equipment disposal, which has resulted in further cost savings to the county.

DPSM has developed a catalog of over 40 contracts for goods and services with demonstrated environmental benefits. The catalog is used by county agencies and grows each fiscal year (FY) (in Fairfax County, that period between July 1st and June 30th of the following year). Additions in FY 2013 included LEED-compatible furniture, energy- and paper-saving copiers, water recycling car wash services, and carpet recycling. Recycling used carpet is expected to deliver significant reductions in greenhouse gas emissions for no additional cost.

The Green Purchasing Program encourages the use of recycled products. More than 65 percent of the office supplies purchased by the county in FY 2012, including all copy paper, had recycled content or green attributes; this number is significantly higher than the average of 30 percent to 40 percent among peer governments. Recycled options provide both environmental and financial benefits. For example, a FY 2013 initiative to purchase lower-cost remanufactured printer cartridges will save an estimated \$100,000 annually with no deterioration in printing performance.

Other highlights of the Green Purchasing Program include:

- Purchase and use of green cleaning products in county facilities, where possible.
- Vendor contract clauses requesting use of green products.
- A partnership with the Fairfax Employees for Environmental Excellence, an advisory group of county employees who support the county's efforts to promote environmentally sensitive county operations.

In addition to promoting and facilitating green purchasing within the county, DPSM works to expand the national market for green solutions. DPSM participates in a national working group to assist other local governments as they construct their own green purchasing programs. DPSM also has worked with U.S. Communities, which hosts cooperative contracts used by 55,000 public agencies, to strengthen green language in national solicitations. The National Association of Counties has cited DPSM as a success story for its green purchasing efforts.

More information about the county's Environmentally Preferable Purchasing Policy is available at [www.fairfaxcounty.gov/news/2009/environmentally-preferable-purchasing-policy.htm](http://www.fairfaxcounty.gov/news/2009/environmentally-preferable-purchasing-policy.htm).

### 4.3.2 Surplus Equipment

DPSM uses a number of different approaches to ensure responsible reuse and disposal of surplus equipment:

- DPSM enhances recycling options by including trade-in, “producer responsibility” and take-back clauses in vendor contracts.
- DPSM sells surplus equipment on consignment and by on-line and sealed-bid auctions.
- DPSM makes strategic donations of surplus equipment to charities that further the county's mission.

Recent successes include record revenue from on-line auctions and the significant diversion of waste through the implementation of an on-line re-use program. DPSM conducts on-line auctions to maximize revenue from surplus sporting goods, office furniture, office equipment, industrial machinery, tools, household and industrial appliances, fleet vehicles and specialized vehicles such as fire trucks and trash trucks. With DPSM's on-line re-use program, employees can shop for surplus equipment from their desks and have items delivered, all at no cost to the requesting department. The program has increased the re-use rate, decreased disposal costs, and saved thousands on the purchase of new equipment. In FY 2013, the county reused and sold 93 percent of all surplus, generating \$3.1 million in revenue.

In 2011, Fairfax County established an internal electronics recycling program. By using the state's contract, the county expanded the list of electronics recyclable to encompass any item with a circuit board; this expanded program realized a \$60,000 improvement over a prior computer recycling program. Over 150,000 pounds of electronics were recycled in FY 2011 and FY 2012. Other recycling initiatives address cell phones, toner cartridges, scrap metal, used tires and spent oil.

With its toolbox of options, DPSM is able to reduce waste and improve the county's bottom line by cutting disposal costs and increasing revenue. More information about DPSM's environmentally-responsible surplus equipment programs is available at [www.fairfaxcounty.gov/dpsm/surplus.htm](http://www.fairfaxcounty.gov/dpsm/surplus.htm).

## 4.4 Facilities and Site Management

Fairfax County's Facilities Management Department (FMD) portfolio is comprised of over 180 properties, totaling over 8 million square feet of space. This space includes offices, libraries, residential treatment facilities and 24/7 facilities such as adult detention facilities, fire stations and police stations. FMD's portfolio does not include facilities operated by the Department of Public Works and Environmental Services, the Park Authority, the Housing Authority, or the Fairfax County Public Schools.

### 4.4.1 Energy Efficiency Upgrades

Energy management is an important focus area for FMD. Over a decade ago, FMD established the goal of reducing energy use by one percent per year, as measured in one thousand British thermal units (kBtu) per square foot. Because annual savings are cumulative, a one percent annual reduction translates to a 10 percent reduction over a 10-year period. Recent numbers show FMD meeting or exceeding its goal, despite a substantial increase in the square footage of its portfolio. During the period FY 2001 – FY 2010, FMD's energy reduction efforts resulted in an estimated cost avoidance of more than \$7 million.

FMD has taken a wide range of actions to achieve these energy savings. It has installed energy management control systems, right-sized heating, ventilating, and air conditioning (HVAC) equipment and installed lighting controls and efficient lighting, including LEDs. These actions yield quantifiable reductions in energy consumption, greenhouse gas emissions and energy costs, as shown by the results of three recent projects:

- Lighting controls were installed in the Herrity, Pennino and South County Government Center buildings, which have a combined floor space area of over 685,000 square feet. Since the project's mid-2012 completion, monthly electricity use across the three buildings has declined 34 percent.
- Aging and inefficient rooftop HVAC units at the Gum Springs Community Center were replaced with energy efficient models and an energy management control system. This upgrade reduced the facility's average monthly electricity consumption by 22 percent while also enhancing occupant comfort.
- FMD replaced a failed chiller at the county's Juvenile Detention Center with an energy-efficient model. This replacement, in conjunction with the installation of energy-efficient pumps, reduced the facility's electricity consumption by 18 percent per quarter.

FMD completed HVAC improvement projects at 4 sites in 2013, resulting in energy-efficiency savings for the life of the improvement. At the Burkholder Annex site, FMD has installed the county's first application of variable refrigerant flow (VRF) technology. VRF-HVAC systems are known to be up to 55 percent more efficient than their conventional counterparts. At the Government Center site, the installation of a variable air volume (VAV) system has reduced energy demands at this facility, improved humidity control and allowed for system adjustments based on occupancy sensing and controls.

In addition to facility retrofits, FMD has installed electrical demand meters at selected facilities to track electric usage and reduce peak demand. FMD also employs various energy management tools to help ensure that facilities operate as efficiently as intended.

#### **4.4.2 Energy Monitoring**

With over 700 utility accounts, computerized energy monitoring and evaluation are essential elements of FMD's energy management practice. Monitoring and evaluation are facilitated by automated energy management control systems that have been installed in 90 county buildings. FMD also uses data available from its energy management software to measure and track energy and water consumption.

Monitoring allows the county to make adjustments based on real-time information, rather than relying on the historical records of past bills. These adjustments yield immediate and continuing savings. Monitoring also allows FMD to identify cost-saving opportunities due to leaks, equipment inefficiencies or problems with building controls. Further, using the data available from its systems, FMD can more precisely determine the costs of operating the facilities in its portfolio and can determine the greenhouse gas emissions associated with that portfolio's energy consumption. This information provides key inputs to the county's annual calculation of its greenhouse gas emissions.

## 4.5 Information Technology

### 4.5.1 IT Energy Efficiency Initiatives

Fairfax County's information technology (IT) infrastructure is designed to ensure the continuous delivery of quality services in a cost-effective and resource-efficient manner. Energy efficiency IT initiatives reduce the power consumption of IT equipment, decrease the emission of greenhouse gases and reduce the county's carbon footprint.

Virtualization and cloud-computing technologies are the foundation of the county's agile enterprise infrastructure architecture. Elements of this strategic approach include consolidating and standardizing IT resources while still ensuring visibility, security and accountability. The county's server virtualization and consolidation initiative, which was established in FY 2007-2008, was funded in part by an FY 2010 federal stimulus award for energy efficiency projects. This initiative reduced the need of physical servers from 870 to fewer than 300, saving about \$380,000 annually in electricity.

The FY 2010 federal stimulus award also helped accelerate the deployment of a personal computer (PC) power management program. The "NightWatchman" program automatically shuts down more than 14,000 end-user PCs across 55 offices when not in operation, saving the county an estimated \$255,000 in PC-related electricity costs in 2012 alone.

The NightWatchman program also supports the county's virtualization initiative. Because it measures server workloads, the program helps determine which servers are underutilized and thus good candidates for virtualization and consolidation.

Both the virtualization initiative and PC power management programs have been nationally recognized for achieving carbon reductions and operational efficiencies. More information about Fairfax County's IT program and initiatives is available at [www.fairfaxcounty.gov/dit/itplan/](http://www.fairfaxcounty.gov/dit/itplan/).

## 4.6 Waste Management

### 4.6.1 Landfill Gas Recovery and Reuse

Landfill gas (LFG) is essentially an equal mixture of methane and carbon dioxide that is a by-product of the decomposition of organic matter buried in sanitary landfills. Fairfax County recovers LFG from several hundred gas wells at the county's two landfills and, after conditioning, uses the LFG to produce electricity, incinerate bio-solids and heat maintenance facilities.

The county's LFG use prevents the release of an estimated 600,000 tons of greenhouse gases annually.

*Electricity Generation* – The county's LFG operations began in 1990 at the I-95 Landfill Complex. This landfill complex is the site of the largest LFG wellfield and electrical generation network in the State of Virginia. Approximately 2,300 cubic feet/minute (cfm) of LFG is captured from the I-95 landfill and used to fuel generators that produce 6 megawatts of electricity – enough to power about 6,000 homes in Fairfax County. This electricity is sold directly to the county's local electric utility, helping keep the Solid Waste Management Program a self-funded agency.

*Incineration* – A three-mile pipeline transmits LFG from the I-95 landfill to the nearby Noman M. Cole Jr. Pollution Control Plant at a rate of up to 700 cfm. The LFG is used in the plant's incineration process to destroy bio-solids and to fuel afterburners that reduce hydrocarbon emissions. The plant's use of LFG from the I-95 landfill saves Fairfax County about \$500,000 per year that it would otherwise spend on natural gas.

*Heating* – In 2005, the county retrofitted five natural gas infrared heaters to use LFG and installed those heaters at the maintenance building and truck wash located at the I-95 Landfill Complex. Demonstrated savings at the I-95 site led the county to install LFG heaters at the I-66 Transfer Station site in 2009. At the I-66 site, LFG is used to provide heating at an on-site maintenance shop, at the truck wash, and at 10-bay vehicle garage nearby. Savings from these heating projects at the I-95 and I-66 facilities is estimated at approximately \$90,000 annually.

In 2005, the U.S. Environmental Protection Agency designated Fairfax County as *Landfill Methane Outreach Program Community Partner of the Year*. More information about Fairfax County's LFG projects is available at [www.fairfaxcounty.gov/dpwes/trash/dispmethrvc.htm](http://www.fairfaxcounty.gov/dpwes/trash/dispmethrvc.htm).

#### **4.6.2 Waste-to-Energy**

The county's Energy Resource Recovery Facility (ERRF) uses municipal solid waste to generate enough electricity to power about 75,000 homes plus the facility itself.

In a multi-step process, the heat from burning waste produces steam that turns turbines capable of generating over 80 megawatts of electricity. With four industrial boilers that can burn over 3,000 tons per day of solid waste – or about 1.1 million tons per year – the ERRF is one of the largest waste-to-energy facilities in the country. The ERRF, which is located adjacent to the I-95 Landfill Complex, has been in operation since 1990.



Using solid waste to generate electricity avoids both the cost and emissions of using a fossil fuel to produce the electricity. Since 1990, energy production by the ERRF has replaced the equivalent of approximately two million barrels of crude oil per year. Incineration of municipal solid waste at the ERRF has other environmental benefits.

- As a result of pre-incineration sorting, enough metal is recycled each year to build over 20,000 automobiles.
- Incineration reduces waste by up to 90 percent in volume, leaving an ash product that is landfilled.
- Incineration prevents half a ton of greenhouse gas emissions from entering the atmosphere for every ton of garbage incinerated, making the county's waste-to-energy operation carbon-neutral to negative.

The ERRF is heavily regulated, subject to continuous emissions monitoring, and required to report to regulators if it exceeds emission limits.

The Energy Resource Recovery Facility is privately owned and operated by Covanta Fairfax, Inc., a subsidiary of Covanta Energy, under contract to Fairfax County. More information about the facility is available at [www.fairfaxcounty.gov/dpwes/trash/disposmsf.htm](http://www.fairfaxcounty.gov/dpwes/trash/disposmsf.htm).

#### **4.6.3 Water Re-Use**

Fairfax County's Water Reuse Project delivers clean but non-potable water from the Noman M. Cole Jr. Pollution Control Plant to non-residential customers for irrigation and industrial purposes. Reusing water conserves valuable treated drinking water and reduces the amounts of nitrogen and phosphorus that reach the Chesapeake Bay. Water reuse also generates revenue for the county.

The project sells water that is not safe for drinking but is safe for other uses, such as watering lawns. Prior to delivery, the water is extensively filtered and disinfected and thoroughly treated to remove harmful organisms and substances, including bacteria, viruses and heavy metals. The Pollution Control Plant continuously monitors and tests the quality of this reclaimed water to ensure it exceeds strict state and federal requirements.



To avoid confusion, every pipe that carries the reclaimed water will be painted purple, and purple signs will be posted at any public location where reclaimed water is being used.

A purple water-reuse pipeline installed along Lorton Road connects the Pollution Control Plant to the county's waste-to-energy plant, the Energy Resource Recovery Facility. This pipeline is expected to deliver approximately 560 million gallons of treated reclaimed non-potable water to the waste-to-energy plant each year for its use in generating electricity. The pipeline also will deliver reclaimed water to both the Laurel Hill Golf Course and the Lower Potomac Ball Fields for irrigation purposes.

The county's use of reclaimed water has both economic and environmental benefits. It requires an estimated 2,300 kilowatt hours of electricity to pump, treat, transmit and distribute one million gallons of potable water. The electricity use associated with reclaimed water is substantially reduced because the water is not treated to the levels required for potable water. Lower electricity costs translate to lower purchase costs. Reductions in electricity use also translate to reductions in greenhouse gas emissions. County staff estimates that using reclaimed water saves approximately 1.1 pounds of equivalent carbon dioxide (CO<sub>2</sub>e) per kilowatt hour, based on the mix of generation sources that supply electricity to the Northern Virginia region. By using 560 million gallons of reclaimed water instead of potable water, the Energy Resource Recovery Facility avoids approximately 1,416,800 pounds of CO<sub>2</sub>e each year. More information about Fairfax County's water reuse is available at [www.fairfaxcounty.gov/dpwes/wastewater/water\\_reuse/](http://www.fairfaxcounty.gov/dpwes/wastewater/water_reuse/).

## 4.7 Vehicle Services

The Department of Vehicle Services (DVS) provides management and maintenance services to the county's vehicle fleet and maintenance support to the Fairfax County Public Schools. The Department of Transportation (DOT) provides, among many other services, the Fairfax Connector transit bus system for public transportation throughout the county. Both agencies strive for economically responsible environmental stewardship by working increased fuel efficiency and reduced emissions and petroleum consumption characteristics into vehicle specifications.

### 4.7.1 Hybrid and Electric Fleet

DVS's responsibilities include management of the county's Vehicle Replacement fund. In response to the county's desire for cleaner and more energy-efficient vehicles, DVS has included hybrid-electric vehicles in its Vehicle Replacement program, where appropriate. As a result, a conventional gasoline- fueled county fleet vehicle at the end of its service life may be replaced with a hybrid vehicle, if acceptable to the using agency and conditions warrant. The county's fleet includes 123 hybrid-electric and plug-in hybrid-electric vehicles. The county saves over 12,600 gallons of gas on average each year from its use of hybrid vehicles.



Using federal stimulus funding, in the 2011-2012 period DVS added 16 Ford Fusion Hybrids, five Chevrolet Volts and one plug-in hybrid-electric school bus to the county fleet. DVS anticipates installing charging stations necessary to support the electric vehicles. In 2011, the Fairfax County Environmental Quality Advisory Council (EQAC), an appointed citizen advisory board, selected DVS as one of two recipients of the BOS-established county award program. The award recognized DVS's strong

environmental stewardship as demonstrated by initiatives including the development and continuing expansion of a hybrid-electric vehicle fleet.

#### 4.7.2 Other Vehicle Services Initiatives

DVS and DOT have established a number of initiatives to improve the energy and environmental performance of the vehicles they manage and maintain. For example:

- To reduce fuel consumption and vehicular emissions, DVS and DOT programmed automatic idle shutdown into all county solid waste truck and Fairfax Connector buses.
- DOT de-rated the engines on 25 Connector buses by 25 horsepower to reduce these vehicles' fuel consumption and corresponding emissions by five percent.
- DOT has transitioned to nitrogen filled tires to provide longer life and increased fuel mileage.
- DVS retrofitted 1,012 school buses and 113 heavy duty trucks with exhaust after-treatments that reduce particulate emissions. DOT retrofitted 167 Fairfax Connector buses with similar after-treatments.

Information about the county's green fleet initiatives is available at [www.fairfaxcounty.gov/living/environment/coolcounties/countyefforts\\_greenvehicles.htm](http://www.fairfaxcounty.gov/living/environment/coolcounties/countyefforts_greenvehicles.htm).

### 4.8 Fairfax Employees for Environmental Excellence

The Fairfax Employees for Environmental Excellence (FEEE) serves as Fairfax County's employee green team. FEEE's goal is simple: to foster a greener workplace culture. FEEE encourages employees to take advantage of existing environmental programs, including recycling and green purchasing options. FEEE also encourages employees to use their diverse perspectives to develop creative solutions that can minimize the environmental impact of county operations.

Cumulatively, the simple, habitual behaviors of Fairfax County's 12,000 employees can have significant environmental impact. Examples include deciding which office supplies to buy, whether to use the recycling bins, or, in those offices without occupancy sensors, whether to turn the lights off after the work-day. FEEE believes that routine and forgetfulness are the most common impediments to environmentally-responsible action in the work-place. As a result, FEEE focuses on employee behavior.

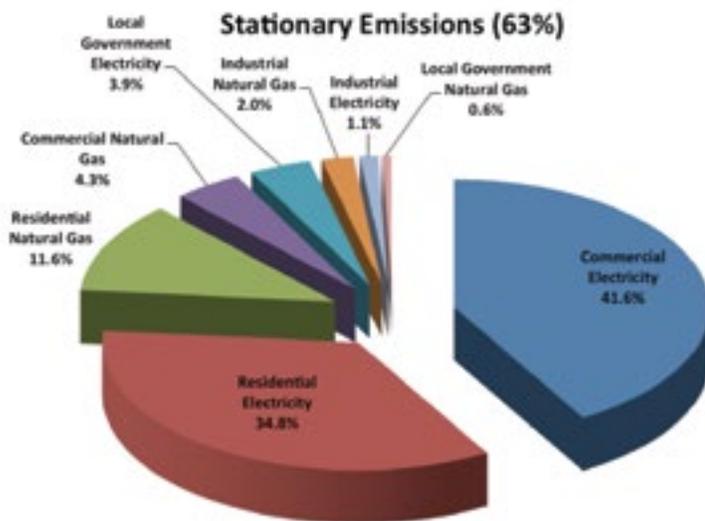
FEEE is especially known for its action campaigns. Many of these campaigns, like FEEE's 2011 "Junk the Junk Mail," are friendly competitions intended to raise awareness about simple but environmentally-responsible activities. FEEE's junk mail competition reduced junk mail overall by 70 percent among participants. The winning agency, the Office of Public and Private Partnerships, achieved a 93 percent reduction. After the conclusion of FEEE's 2012 friendly competition, "Take the Stairs Week," county staff reported opting for the stairs over the elevator nearly 3,000 times.

Other FEEE initiatives and accomplishments include:

- Using its internal website and blog to disseminate information and tips. Because it offers two-way communication, the blog has the added advantage of allowing employees across the organization to join the conversation.
- Highlighting innovative green ideas on the FEEE website and through FEEE's award program, "Fairfax Sustainability Champions."
- Hosting lunch-and-learn events. Recent events include a stream restoration tour, a green roof tour and the display of a replica green office.
- Distributing over 700 of its branded green lanyards to county employees to help spread the word about FEEE.

In less than three years, FEEE has grown from an initial group of 15 to nearly 400 employees interested in a greener workplace culture. By empowering employees to exercise environmental responsibility, FEEE has helped the county realize a range of benefits, including cost savings and increased recycling revenue.

## 4.9 Community Greenhouse Gas Emissions Inventory



Fairfax County has created a community greenhouse gas (GHG) emissions inventory to provide a baseline measurement, as well as to guide future efforts to reduce emissions.

The inventory establishes 2006 as its baseline year. It then tracks annual stationary and mobile emissions for the five-year period from 2006 through 2010.

Stationary sources are defined as buildings or other fixed, energy-consuming property not attributable to federal or state governments. Mobile emissions are defined as those associated with on-road traffic originating in and passing through the county, as well as light rail, off-road vehicles and mobile machinery. The GHG inventory includes both direct (Scope 1) emissions generated within the county and energy-related indirect (Scope 2) emissions. Scope 2 emissions result from purchased electricity that is consumed inside the county, regardless of where it was generated.

During the review period, stationary sources accounted for 63 percent of the county's total GHG emissions, primarily from electricity use. The majority of stationary emissions – 76.4 percent – were attributable to electricity and natural gas consumed by the residential and commercial sectors: 46.4 percent and 45.9 percent, respectively, of total emissions from stationary sources. Electricity and natural gas consumption by Fairfax County government and schools accounted for 4.5 percent of total stationary emissions.

Mobile sources accounted for the remaining 37 percent of total emissions during the review period. On-road vehicles accounted for 89 percent of total mobile emissions. Of this 89 percent, 46 percent was attributable to vehicles passing through the county (transient vehicles) and 43 percent to vehicles registered in the county (local vehicles).

From 2006 to 2010, total emissions per resident declined by one percent.

Fairfax County's baseline 2006 GHG emissions by source and sector are shown in the table below.

Emissions Category	Baseline (2006) GHG Inventory	
	MMTCO <sub>2</sub> e	% Total Emissions
<i>Stationary Sources</i>		
Residential	3.459	29%
Commercial	3.420	29%
Local government	0.339	3%
Industrial	0.233	2%
<i>Mobile Sources</i>		
Passenger vehicles	2.822	24%
Heavy trucks	0.596	5%
Light trucks	0.486	4%
Other	0.484	4%
<b>TOTAL</b>	<b>11.838</b>	<b>100%</b>

The inventory is available at [www.fairfaxcounty.gov/living/environment/greenhousegas/greenhouse-gas-inventory.htm](http://www.fairfaxcounty.gov/living/environment/greenhousegas/greenhouse-gas-inventory.htm).

# **SECTION 5**

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**ENVIRONMENTAL IMPROVEMENT  
PROGRAM: OBJECTIVES AND  
FUNDED PROJECTS**

# ENVIRONMENTAL IMPROVEMENT PROGRAM: OBJECTIVES AND FUNDED PROJECTS

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## SECTION 5

### 5.1 Introduction

The Environmental Improvement Program (EIP) was first developed in 2005 by the county's Environmental Coordinating Committee (ECC) in response to direction by the Board of Supervisors following the adoption of its Environmental Agenda on June 21, 2004. The ECC is a collaborative interagency management committee established to ensure an appropriate level of coordination and review of the county's environmental policies and initiatives.

The EIP provides the county executive and board with environmental and energy action-oriented opportunities to support board-adopted environmental and energy policies and goals. The EIP is updated annually through a coordinated and collaborative process. See [www.fairfaxcounty.gov/living/environment/eip](http://www.fairfaxcounty.gov/living/environment/eip) for further information regarding the EIP.

The Department of Management and Budget, with input from the county executive and his/her deputies, determines the appropriate level of funding that will be proposed for EIP projects in any given budget year. Since the EIP project funding is supported by the county's General Fund, the amount of funding available varies from year to year. See Section 2.4.2 in this report for more information regarding the EIP. This section describes the EIP projects solicitation, selection and funding process and provides details on current projects and a listing of past projects.

### 5.2 Objectives

Good environmental quality is essential for everyone living and working in Fairfax County. A healthy environment enhances our quality of life and preserves the vitality that makes Fairfax County a special place to live and work. However, rapid growth and development that have characterized Fairfax County over the past half century and that continue today have challenged the county's ability to maintain good environmental quality. Federal and state guidelines and regulations have demanded not only extra diligence in the development of concrete strategies for a healthy environment, but also inter-jurisdictional coordination to address pollution that knows no boundaries.

Stewardship and prudent management of our natural environment and resources are not merely "add-ons," or afterthoughts, but rather are essential and fundamental responsibilities that must be given

fullest consideration at all times. Good stewardship doesn't involve "rescuing" nature from environmental disasters; it involves long-term strategic planning that minimizes any possibilities of such emergencies occurring. Clearly, cooperation between county residents and government leadership and agencies will be required to effect lasting solutions to the environmental challenges we face. The EIP serves as a primary mechanism through which such planning occurs.

Fairfax County has long recognized the need for proactive policies and initiatives to address its environmental challenges. Indeed, environmental considerations are embedded in the county's policy and regulatory documents, and the county has pursued a myriad of environmental initiatives that continue to grow in number and complexity. The county's dedication to meeting its environmental challenges is reflected in the numerous awards and recognitions it has earned, including designation by the Chesapeake Bay Program as a Gold Chesapeake Bay Partner Community. Other awards and recognitions are listed in Section 6. Nevertheless, both the board and county staff recognize the need for enhanced environmental efforts, in that environmental challenges are continuing and in many cases becoming more daunting.

### 5.3 FY2014 EIP Projects

Fairfax County supports environmental initiatives in the board-adopted Environmental Excellence 20-year Vision Plan (Environmental Agenda) through several county agencies and funds. There are also many environmental initiatives and projects carried out by individuals and groups each year. Section 2.4 provides a broad discussion of funds used for environmental efforts.

This section focuses on environmental initiatives and projects that are supported through the EIP, which funds projects identified through a collaborative and coordinated process and based on a rigorous project selection process.

#### 5.3.1 The EIP Projects Selection Process

In its 2012 Annual Report on the Environment, the Environmental Quality Advisory Council (EQAC) recommended that the EIP project selection process be formalized. In response to this recommendation, an interagency staff committee developed a rigorous project selection process to support the board-adopted Environmental Agenda. This process, which was reviewed and supported by EQAC, resulted in funding

for several high-quality environmental projects in FY 2014, as discussed in Section 5.3.2.

Under this process, each fiscal year, county agencies have the opportunity to submit proposed projects for review, scoring and consideration. An agency must include technical analysis, including cost/benefit information, as part of its submission. After the submission period closes, a staff committee conducts agency interviews for each project, then evaluates and prioritizes all proposals. A final matrix of prioritized projects is submitted to the Department of Management and Deputy County Executive for consideration in the County Executive's advertised budget.

Staff-developed submission criteria provide guidance to the agencies as they identify and develop their project proposals. Selection criteria guide committee members as they evaluate and prioritize the projects. Both the submission and selection criteria are derived from the board's Environmental Agenda and the six topic areas it addresses: Growth and Land Use; Air Quality and Transportation; Water Quality; Solid Waste; Parks, Trails and Open Space; and Environmental Stewardship.

The EIP selection process occurs over a period of months, as shown by this timeline:

- July: Memo sent to agencies soliciting submission of EIP proposal(s) for funding consideration.
- August: EIP Project Selection Committee (PSC) screens proposals to confirm compliance with submission criteria. Additional information may be requested from agencies, if necessary.
- September: PSC conducts preliminary scoring of proposals and schedules interviews.
- October: Agencies present proposal(s) to PSC and address questions. PSC concludes final scoring based on preliminary score and presentations, and presents its final list of prioritized EIP projects to the Deputy County Executive.
- November: Deputy County Executive presents final prioritized list of EIP projects to the County Executive.

### 5.3.2 FY 2014 Funding and Projects

As a result of this process, the FY 2014 adopted budget included funding of \$500,000 for environmental initiatives. The specific projects are detailed below:

*Lighting Retrofits* – An amount of \$110,000 was included for lighting retrofits and upgrades at Fairfax County Park Authority facilities for energy

efficiency and conservation. Lighting will be upgraded to LED fixtures and controls will be installed to more efficiently manage lighting during operating hours. These energy-saving retrofits will reduce energy use by approximately 80 percent, improve lighting, reduce light pollution and reduce greenhouse gas emissions.

*Invasive Management Area Program* – An amount of \$100,000 was included to continue the Invasive Management Area program. The Fairfax County Park Authority manages this volunteer program as well as other invasive plant removal initiatives. These programs restore hundreds of acres of important natural areas, protect tree canopy and reach thousands of volunteers. Currently, 6,000 trained volunteer leaders have contributed 20,000 hours of service since the program's inception in 2005, improving over 1,000 acres of parkland.

*Energy Education and Outreach* – An amount of \$250,000 is included for energy education and outreach initiatives. This program was intended to increase the awareness of Fairfax County residents and businesses regarding energy consumption and to encourage them to reduce consumption. Program objectives include educating citizens and businesses about energy consumption, explaining the energy assessment (audit) process and encouraging residents and businesses to undertake energy-saving measures.

*Green Purchasing Program* – An amount of \$10,000 was included for the green purchasing program. This program is designed to support two interns to assist in clearly specifying environmental attributes during the county's procurement process. Fairfax County has a current inventory of over 2,400 contracts; emphasizing environmental attributes such as recycling, energy efficiency, durability and reduced toxicity during the procurement process can contribute to the purchase of green products, creating fiscal and environmental savings.

*Weather Station* – An amount of \$6,500 was included to install a weather station for efficient water usage at Twin Lakes Golf Course. This system will help to measure air temperature, relative humidity, barometric pressure, rainfall and other weather indicators in order to modify watering requirements. It is estimated that installing this weather station could save 20 million gallons of water per year.

*Strategic Initiatives* – An amount of \$23,500 was provided for other strategic environmental initiatives. This funding may also be used to offset any unanticipated project shortfalls in existing or proposed projects.

## 5.4 EIP Delivered Projects History

EIP projects were first funded as part of the FY 2004 Carryover Review (September 2004). To date, the total EIP project funding including the current FY 2014 Adopted Budget Plan is roughly \$6.3 million. These initiatives generally support the Board of Supervisors Environmental Agenda.

The projects listed below have been supported by the county's General Fund; however other environmental projects have been supported by the Energy Efficiency and Conservation Block Grant (as part of the American Recovery and Reinvestment Act of 2009) and by the county's Contributory Fund (the latter of which funded tree planting partnerships with three non-profit organizations). In addition, as discussed in Section 2.4, several important environmental program areas and initiatives are supported through funding sources outside of the EIP and General Fund.

Projects funded through the EIP to date include:

- Purchase of wind energy.
- Air quality education and Clean Air Partners (media sponsorship to continue public outreach to improve air quality).
- Conversion of 163 Fairfax Connector buses to ultra-low sulfur fuel and addition of particulate traps to reduce emissions.
- Community cleanup/revitalization/blight abatement projects.
- Toxicity reduction public outreach program.
- Expansion of the business recycling program.
- Pedestrian improvements in the Richmond Highway corridor.
- Riparian buffer restoration.
- Cleanup of unauthorized dumpsites.
- Park Authority stewardship education.
- GIS-data green infrastructure for park natural resource management.
- Low impact development demonstration projects.
- Park trails mapping (comprehensive mapping program to allow the Park Authority to better manage and plan the trail system).
- Invasive Management Area program.
- Landfill gas utilization project at the I-95 Landfill.
- Remote household hazardous waste collection events.
- Tree canopy campaign at county facilities.
- Energy efficiency/renewable energy at county facilities.
- Litter campaign.
- Lighting retrofits and upgrades at Fairfax County Park Authority facilities.



# SECTION 6

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## AWARDS AND RECOGNITIONS

# AWARDS AND RECOGNITIONS

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## SECTION 6

### 6.1 Selected Awards and Recognitions

- 2013 – National Association of Counties (NACO) Best in Category Achievement Award in the category of Environmental Protection and Energy.* The NACO award honored the county's Government Center stream restoration project, an innovative water quality project that included a stream restoration and pond retrofits on county property. NACO Achievement Awards recognize innovative county government programs in one of 21 different categories.
- 2013 – National Association of Clean Water Agencies (NACWA) Platinum Peak Performance Award.* Platinum Awards recognize outstanding compliance with National Pollutant Discharge Elimination System (NPDES) permit limits for five or more consecutive years. At the time of this award, Fairfax County's Noman M. Cole Jr. Pollution Control Plant had achieved 100 percent NPDES compliance for 15 consecutive years – one of only nine municipal water treatment plants across the nation to do so.
- 2013 – The Coalition for Smarter Growth Sanders-Henn Community Hero Award.* The non-profit group honored county staff in the areas of planning, revitalization, transportation, housing, parks and public services for their on-going efforts to make Tysons a green, walkable urban center.
- 2013 – National Association of Government Communicators (NAGC) Best in Show Award.* The Best in Show Award, selected by the NAGC Board of Directors from all first-place Blue Pencil & Gold Screen winners, was presented to the Fairfax County Park Authority for its invasive plant control program, "Take Back the Forest." This program, which involves a partnership between county government, county schools, and REI, Inc., brings more than 500 volunteers into parks over a 30-day period to remove non-native invasive plants and replace them with native plants.
- 2012 – NACO Best in Category Achievement Award* for the "Stormy the Raindrop" public education campaign. The campaign, which was developed by the Stormwater Division of the county's Department of Public Works and Environmental Services, centered on a child-friendly character named Stormy the Raindrop.



**2011 – American Planning Association Daniel Burnham Award.** This award, which recognizes advancement of the science and art of planning, is granted to only one urban plan in the nation each year. The APA honored the Comprehensive Plan for the Tysons Corner Urban Center. Plan elements include a tiered approach to density that is focused around four transit stations, a long-term goal of reducing the jobs-to-household ratio from 13:1 to a more balanced 4:1, incentives to reserve 20 percent of new housing units for moderate-income households, and innovative stormwater management facilities designed to retain at least the first inch of rainfall on site.

**2011 – The Governor’s COVITS (Commonwealth of Virginia IT Symposium) Award for Innovation in Local Government.** The county was honored for its introduction of mobile applications that provide 24/7 access to government information and services for users of iPhone/iPad, Android and BlackBerry devices.

**2011 – Governor’s Environmental Excellence Bronze Award, Government Category,** for stormwater outreach. The Governor’s Environmental Excellence Awards recognize the significant contributions of environmental and conservation leaders in the areas of sustainability and land conservation.

**2010 – National Recreation and Park Association (NRPA) Gold Medal Award, Class 1 Category** (population 250,000 and over). The Fairfax County Park Authority was awarded the NRPA Gold Medal for demonstrating excellence in long-range planning, resource management, and agency recognition.

**2010 – Virginia Mosquito Control Association (VMCA) Outstanding Service Award.** The VMCA recognized the Health Department’s Disease Carrying Insects Program for its consistent contributions to mosquito control awareness and education throughout Virginia, for its on-going commitment to serving county residents, and to its provision of educational opportunities to partner organizations.

**2009 – NACO Achievement Award** for the Herry Building Garage Vegetative Roof.

**2008 – MarCom Platinum Winner and Communicator Award of Excellence.**

The award was presented to the Fairfax County Park Authority for its Non-Native Invasive Plant Identification and Control Handbook. The MarCom awards, sponsored by the Association of Marketing and Communication Professionals, honor excellence in marketing and communication.

**2008 – Public Technology Institute Solutions Award, Sustainability**

**Category,** for the county's plug-in electric hybrid vehicle fleet trial program. Solutions Awards recognize the members' use of technology to solve specific problems, improve community services and internal operations and reduce costs.

**2007 – U.S. Environmental Protection Agency Green Power Partner.**

Fairfax County was recognized for its efforts to reduce the risk of climate change through green power purchasing.

**2007 – U.S. Environmental Protection Agency EnergyStar partner.**

Partners team with EnergyStar to save energy through energy-efficient products and practices.

**2007 – Solid Waste Association of North America (SWANA) Bronze**

**Excellence Award, Integrated Solid Waste Management Program category.** The Excellence Awards recognize outstanding solid waste programs and facilities that are environmentally and fiscally responsible, advance worker and community health and safety, and implement successful public education and outreach programs.

**2006 – Businesses for the Bay Environmental Excellence Award for Outstanding Achievement for Nutrient Reduction by a Local Government.**

The award recognized the county's achievement in reducing phosphorous and nitrogen discharges from its wastewater treatment plant significantly below legally-allowable levels. The discharge reductions benefit more than 3,600 species of plants, fish and shellfish in the Chesapeake Bay, one of the nation's most biologically diverse estuaries.

**2006 – NACO Achievement Award for Environmental Excellence.**

The award recognized the county's 2005-2006 Environmental Improvement Program, which is designed to integrate and link environmental goals and objectives into all levels of county decision-making and to provide a strategic approach to prioritizing environmental actions for implementation.

*2006 – U.S. Environmental Protection Agency Landfill Methane Outreach Program (LMOP) Community Partner of the Year.* The LMOP helps to reduce methane emissions from landfills by encouraging the recovery and beneficial use of landfill gas (LFG) as an energy resource. The LMOP honored Fairfax County as a Community Partner of the Year for its use of LFG to produce electricity, dry sludge at its wastewater treatment plant, and heat the county's facilities using infrared heaters.

*2005 – NACO Achievement Award, Environmental Protection and Energy Category,* for Fairfax County's air quality protection strategy, "Improving Air Quality in the Washington Metropolitan Area: A Commitment to Air Quality Excellence."

*2004 – Chesapeake Bay Program, Gold Chesapeake Bay Partner Community.* Launched in 1997, the Bay Partner Community Program recognizes local governments in the Chesapeake Bay watershed for their commitment to protecting and restoring the Bay and its tributaries. Fairfax County was first designated as a Gold Chesapeake Bay Partner Community in 1997 and recertified in 2004.

*2004 – NACO Achievement Award* for watershed management planning.

*2004 – National Association of Clean Water Agencies Excellence in Management Award.* The award honors member agencies who have implemented successful programs that address the range of management challenges faced by public wastewater utilities, including environmental quality, system capacity and reliability, operations and maintenance, asset management, use of technology, finances, rate management, and customer relations.

# APPENDIX

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# APPENDIX I

## Featured in this Section

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TTY 711 for all phone numbers	
Type of Incident	Phone Number
<p><b>RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT</b>                      To report the dumping of any materials into a stream, manhole, storm sewer or onto the ground, call 9-1-1. When calling, be prepared to provide specific information about the location of the incident. County inspectors will investigate complaints within the county; Cities of Fairfax and Falls Church; and the Towns of Clifton, Herndon and Vienna.</p>	911
<p><b>LAND CLEARING; TREE REMOVAL; DUMPING OF FILL</b>                      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 <a href="http://www.fairfaxcounty.gov/code">www.fairfaxcounty.gov/code</a>.</p>	703-324-1300
<p><b>SOIL EROSION</b> To report soil erosion from private properties or construction sites, contact the Department of Code Compliance, or visit <a href="http://www.fairfaxcounty.gov/code">www.fairfaxcounty.gov/code</a>.</p>	703-324-1300
<p><b>GENERATION OF DUST FROM CONSTRUCTION, GRADING OR LAND CLEARING</b>                      Contact the Department of Code Compliance, or visit <a href="http://www.fairfaxcounty.gov/code">www.fairfaxcounty.gov/code</a>.</p>	703-324-1300
<p><b>CONSTRUCTION NOISE</b>                      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 <a href="http://www.fairfaxcounty.gov/code">www.fairfaxcounty.gov/code</a>.</p>	703-324-1300
<p><b>TRASH COLLECTION BETWEEN 9:00 P.M. AND 6:00 A.M.</b>                      Call the Department of Public Works and Environmental Services. If possible, provide descriptive information about the truck, such as color, truck number, and license plate number.</p>	703-324-5230
<p><b>SIGNS ON ROADS AND MEDIANS</b>                      If a sign on a road or median poses a safety hazard, call the Virginia Department of Transportation to have it removed. Fairfax County performs monthly collections of illegal roadway signs on certain designated roads. More information at <a href="http://www.fairfaxcounty.gov/code/signs">www.fairfaxcounty.gov/code/signs</a>.</p>	1-800-367-7623
<p><b>OUTDOOR LIGHTING CONCERNS</b>                      To report problems with glare, overlighting or other issues, contact the Department of Code Compliance, or visit <a href="http://www.fairfaxcounty.gov/code">www.fairfaxcounty.gov/code</a>.</p>	703-324-1300

TTY 711 for all phone numbers	
Type of Incident	Phone Number
<p><b>AIR POLLUTANTS</b>                      Air pollutants are emitted by stationary sources, such as power plants, gasoline service stations, and dry cleaners, as well as by mobile and area sources, such as from automobiles, trucks and other highway activities. This phone number is for the Virginia Department of Environmental Quality Northern Regional Office.</p>	<p>703-583-3800                       After hours, call 1-800-468-8892</p>
<p><b>NO RECYCLING IN SCHOOLS</b>                      Section IX of the Fairfax County School Board’s Policy 8542 states that “Schools and centers will have mandatory recycling programs for paper products, cans, and bottles. Construction waste materials will be separated and recycled.” To report schools that are not recycling in accordance with this policy, contact the Fairfax County Public Schools Office of Facilities Management, Plant Operations Section. More information is available at: <a href="http://www.fcps.edu/fts/facmanagement/recycle.shtml">http://www.fcps.edu/fts/facmanagement/recycle.shtml</a>.</p>	<p>703-764-2459</p>
<p><b>HEALTH HAZARDS</b>                      For information and guidance on a suspected environmental hazard that may pose a public health risk, call the Health Department’s Division of Environmental Health. These hazards include unsanitary storage or disposal of waste; unburied dead animals; medical waste; insect infestations; and mosquito breeding sites.</p>	<p>703-246-2444</p>









*Fairfax County*  
**VIRGINIA**



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