FAIRFAX COUNTY, VIRGINIA

Environmental Improvement Program (EIP)
Appendix 2: Board of Supervisors' Environmental Agenda

Fiscal Year 2014

Prepared September 2012

Board of Supervisors' Environmental Agenda

Adopted by the

Fairfax County Board of Supervisors

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Board of Supervisors' Environmental Agenda

Fairfax County's environment is resilient, but not indestructible. No matter what income, age, gender, ethnicity, or address, everyone has a need and right to breathe clean air, to drink clean water, and to live and work in clean surroundings. A healthy environment enhances our quality of life and preserves the vitality that makes Fairfax a special place to live and work. As the natural places in Fairfax become surrounded and our county continues to grow, we need strong leadership to ensure that future generations can enjoy a healthy and beautiful environment. The county's population growth rate of 18 percent during the last decade resulted in a population of more than one million people. The associated development has put the natural environment at a crossroads. This growth has brought more impervious surfaces, fewer mature tree stands, more cars, and more waste generation, which in turn have degraded streams; created chronic unsafe air days; and left less open space for habitat, rainwater absorption, air filtering and, yes, visual relief.
The environmental impact of every decision the county makes must be carefully and purposefully evaluated. Environmental concerns should not be trade-offs or compromises; rather they should be one of the essential decision making criteria. The Board of Supervisors is elected to represent the citizens of the county and should be a source of creative decision-making and leadership.

Section 1
Fairfax County: A Record of Commitment

Fairfax County's environmental policies and actions have played a significant role in protecting our environment. Some important decisions:

- The Occoquan Watershed downzoning has helped keep our drinking water clean for the past 20 years.
- The Stream Protection Strategies are developed that can now be implemented to restore stream health and prevent further deterioration.
- The October 2000 Policy Plan amendment supports the application of low impact site design techniques to reduce stormwater runoff volumes and peak flows to increase groundwater recharge and preserve undisturbed areas.
- The Watershed Management Plans underway for all 30 watersheds will provide concrete steps toward better storm water management and cleaner streams
- The March 2003 staff report on "The Role of Regional Ponds in Fairfax County's Watershed Management" has recommended a number of better ways to manage storm water runoff.
- The adaptive reuse of the former Lorton prison site (Laurel Hill) will balance land conservation with housing, schools and recreation.
- A cleaner Potomac River is now swimmable and fishable.
- The County has built more than 350 parks, recreation centers, and other open space areas and has acquired 6,011 acres for new open space during the past few years, a 30 percent expansion in our parklands.
- The Board hired the first Environmental coordinator in the history of the County to insure interconnectedness of our environmental programs.

- The county's tree canopy of 41 percent compares favorably with the canopy in other urbanized areas of Virginia where it averages 35.3 percent. It also compares favorably with the canopy in urbanized areas of Maryland where it averages 40.1 percent.
- Our present level of tree canopy meets the recommendations of American Forests of 40 percent for communities east of the Mississippi River. A 40 percent canopy is needed to sustain environmental and socio-economic benefits so there is an acceptable quality of life.

Section 2
A Commitment for the Future

The Board of Supervisors supports these two environmental principles:
1. The conservation of our limited natural resources must be interwoven into all government decisions. There is a direct link between the vitality of ecological resources and the quality of life for our citizens.
2. We must be committed to provide the necessary resources to protect our environment.
Recent actions by the Board of Supervisors and other regional government bodies have affirmed Fairfax County's commitment to the environment and environmental stewardship.

- The Metropolitan Washington Council of Governments established a region-wide drought emergency plan. The plan balanced the region's need for a reliable water supply with water conservation.
- The Board strengthened the Chesapeake Bay Preservation Ordinance in 2003 to require protection and creation of vegetated buffers along perennial streams.
- The Board authorized mapping all county streams to better implement the Chesapeake Bay Preservation Act.
- The Board of Supervisors, working with the Fairfax County Park Authority, preserved large tracts of the former Lorton prison site as open space and for recreational use.
- The Board supported the establishment of the cross-county trail from Lorton to
- Great Falls. This trail will make it possible for people to enjoy their natural environment and provide an alternative to driving.
- The Board of Supervisors supported efforts to comply with the Clean Air Act by developing and initiating a plan to have 20 percent of workers telework by the year 2005.
- The Board approved regulations to limit light pollution through the County's dark skies initiative.
- The Board supported a County study to examine the spread and effects of infill development within established neighborhoods; and county staff is implementing the study recommendations to make new homes more compatible with established neighborhoods and to reduce negative environmental impacts.
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- The Board has worked in concert with the Northern Virginia Land Conservation Trust to support a public-private partnership to preserve open space and sensitive areas.
- The Board endorsed the Tree Action Plan that provides strategies and actions to conserve and manage the County's tree and forest resources for the next 20 years.

Section 3
Protecting and Enhancing our Environment

I. Growth and Land Use

Fairfax County has more than one million people, a population larger than that of seven states. Between 1990 and 2000, Fairfax grew by 18 percent. It will grow another 12 to 15 percent between 2000 and 2010, and yet another 5-7 percent between 2010 and 2020. This growth will present challenges to meet the needs of schools, transportation, air quality, water quality, recreation, and public facilities and services. Having 200,000 new neighbors living in 80,000 new households means accommodating more impervious surfaces, more vehicles, more congestion, more pollution, and more impacts on our natural resources. How we continue to accommodate growth will be one of the biggest challenges we face as a community.

There is no simple solution to this problem. We need to consider a wide range of options. Clustering of residential development allows several homes to be built close together with the remaining acreage left as open space in perpetuity. The challenge to clustering is building public trust that the open space will remain open.

Mixed-use development promotes a vibrant, town-like community by combining housing, employment, shopping, and entertainment into a master plan. A complete mixed-use development encourages non-motorized transportation and fewer trips to obtain goods and services.

Various strategies for the placement and design of buildings can save energy, prevent storm water runoff. Low impact development (LID) concepts encourage ways to keep stormwater as close to the source as possible. LID techniques include placing homes closer to the street to reduce impervious surfaces, grassed swales to collect rain water, infiltration measures such as rain gardens, filter strips, porous pavers in less-used parking areas and infiltration of parking lot runoff.

A challenge faces us as older communities are transformed by teardown construction, both for new housing and to expand existing homes. In these cases and in general, new developments may not blend well with their neighbors—in size, appearance, or architecture.

Another important effect of growth is the challenge it presents to low-income workers trying to find affordable housing opportunities in the County. We need to provide opportunities for all members of the community to live and work in the County.

The Comprehensive Plan outlines the following policy for managing new growth:

"Growth should take place in accordance with criteria and standards designed to preserve, enhance, and protect an orderly and aesthetic mix of residential, commercial/industrial facilities, and open space without compromising existing residential development."

The Infill and Residential Development Study report of late 2000 recommended a number of strategies to address site design and neighborhood compatibility, traffic and transportation, tree preservation, and storm water management and sediment control. The Board of Supervisors has approved some of these recommendations as amendments to ordinances and the Public Facilities Manual.

The County's Development Criteria for both residential and non-residential development were revised in 2002. They provide guidelines for county staff as they review applications for development and address a number of issues related to density, location, and amenities, etc.

The Board's Environmental Plan:

- Use clustering and mixed-use development when appropriate to utilize space efficiently and provide perpetual open space.
- Promote walkable communities using mixed-use development and village-style neighborhoods.
- Maximize mixed-use development near transit stops and expand public transportation to employment centers. Provide convenient transportation choices such as subway, light rail, commuter bus, connector bus, and monorail.
- Make employment centers, such as Tyson's Corner, self-contained vibrant places to live and work by ensuring mixed-use, pedestrian friendly, transit-oriented development.
- Encourage the use of low impact development concepts and techniques, especially in new residential and commercial areas, and seek opportunities for retrofitting established areas.
- Pursue state enabling legislation to ensure adequate infrastructure is in place for new developments and to provide more flexibility to ensure harmonious and compatible development. Work toward ensuring that new and renovated homes are compatible with established neighborhoods.
- Use our land and other resources wisely by
    - concentrating employment and multi-family housing near transit services (and by expanding those transit services);
    - integrating pedestrian-oriented neighborhood commerce (markets, restaurants, services) into new residential neighborhoods;
    - providing pedestrian amenities whenever possible, such as sidewalks and trails; traffic calming; street furniture in shopping areas; transit shelters; and urban building design;
    - providing parking incentives for carpoolers; encourage transit use by reducing the use of parking subsidies where appropriate.

- Increase tree conservation in land development by:
    - ensuring that all tree preservation commitments for development projects are honored;
    - optimizing tree preservation and planting efforts associated with by-right development;
    - pursuing state enabling legislation for more stringent tree conservation measures;
    - optimizing tree preservation and planting efforts in the design and construction of public facilities.

II. Air Quality and Transportation

Over the past 25 years commuting patterns have changed, as more people move about and through the county instead of commuting into the city for work. By 2020 the Dulles Airport -Tyson's Corner corridor will be the second biggest employment center in the entire metro region. Although the County's tree cover has fluctuated greatly since European settlement began (as low as 30 percent during the Civil War era), the County has lost 48 percent of its tree canopy since 1973. Along with the physical loss of trees the County lost significant levels of air quality services. The canopy lost since 1973 is estimated to have had the capacity to remove 2.4 million combined pounds of sulfur dioxide, carbon monoxide, ozone and particulate matter annually, at a value of $6.8 million per year.

Fairfax County, like the entire Washington Metropolitan area, does not meet federal air quality standards for ozone or smog. According to the American Lung Association's "State of the Air: 2003" report, the region received an "F" because of its dirty air from 1999 to 2001. In 2002, the Environmental Protection Agency (EPA) downgraded the Washington area's air quality from "serious" to "severe," which will jeopardize receipt of federal transportation funding unless the situation is improved.

Repeated exposure to ozone pollution may cause permanent damage to the lungs. Inhaling ozone triggers problems like chest pains, coughing, nausea, throat irritation, and congestion. It can also reduce lung capacity and worsen bronchitis, and heart disease, emphysema, and asthma.

Ozone damages plant life and reduces crop production each year by $500 million. It interferes with the ability of plants to produce and store food, making them more susceptible to disease, insects, other pollutants, and harsh weather. Ozone damages the foliage of trees and other plants.

The summer of 2002 was the worst ozone season for the metropolitan area, including Fairfax County, in more than a decade. When measured against EPA's new, more protective 8-hour ozone standard, Fairfax County exceeded that standard on 36 days in 2002, including two code purple days, when the air was deemed to be very unhealthy.

Motor vehicle exhausts and industrial emissions, gasoline vapors, and chemical solvents are some of the major sources of Nitrogen Oxides (NOx) and Volatile Organic Compounds (VOCs), ozone precursors. Strong sunlight and hot weather cause groundlevel ozone to form in harmful air concentrations. Many urban areas tend to have high levels of "bad" ozone, but other areas are also subject to high ozone levels as winds carry NOx emissions hundreds of miles away from their original sources.

The major causes of ozone or smog in Fairfax County are:

- People driving increasingly more miles, in part because of sprawling development patterns.
- More vehicles on the road, due to the population increases, interstate transit, increased affluence and families owning more vehicles, and limited transit options available.
- People driving more highly polluting sport utility vehicles, including pickups and minivans, instead of lower-emitting vehicles.
- Industrial emissions produced elsewhere and blown into the area.

The Board's Environmental Plan:

- Improve pedestrian mobility, encourage shorter trips, increase public transit use, and enhance the economic viability of public transit and reduced vehicle use.
- Provide station access by foot, bicycle and public transit, with adequate public parking.
- Coordinate public transit service to facilitate intermodal transfers, including convenient and safe bicycle access to public transit and secure bicycle storage in public places and stations. Where practicable, give parking preference to multiple-occupancy vehicles over single-occupancy vehicles.
- Encourage buses and trucks to avoid idling for extended periods.
- Continue to promote telecommuting in order to reach the regional goal of 20 percent of eligible commuters by 2005, transit use, and car-pooling to reduce congestion and improve air quality with high visibility public campaigns and cooperation by businesses.
- Complete the rail extension to Tyson's Corner and Dulles International Airport; pursue light rail and transit options on U. S. 1.
- Work with the Metropolitan Council of Governments to develop actions to combat pollution coming from other areas such as the Ohio Valley and the East Coast.
- Continue to encourage federal officials to increase fuel economy and emissions standards for cars and light trucks.
- Explore alternatives to diesel fuel in the County Fleet.
- Improve air quality through tree conservation policies and practices that:
    - preserve and plant trees to support air quality improvement and minimize climate change;
    - incorporate tree preservation and planting into air quality planning efforts.

III. Water Quality

Fairfax County has over 900 miles of perennial streams and many intermittent streams, ponds and lakes. The County also has many underground aquifers (groundwater). These provide drinking water, recreation and enjoyment for humans and habitat and food for a myriad of animals and organisms.

Everyone in Fairfax County lives in the Potomac watershed, which in turn is part of the larger Chesapeake Bay watershed. All of the 30 major streams and their tributaries drain into the Potomac River, which empties into the Chesapeake Bay. Both the Occoquan Reservoir and the mainstem Potomac River are the drinking water supply for most Fairfax County residents. A small percentage of the county's residents get their drinking water from wells that tap into groundwater.

Many stream banks are lined with trees and vegetation. Wetlands, beaver dams and ponds contain an abundance of wildlife and provide access to natural habitats and recreational opportunities for many Fairfax citizens. One-third of the land in the Fairfax County Park system is in stream valley parks.

Water quality depends on many factors, but none has more impact than impervious surface cover. Over 36 percent of the County was "vacant" in 1975 whereas only 11.5 percent was vacant in 2000. This means that 62 square miles of asphalt, rooftops, driveways, parking lots, and other impervious surfaces now cover the county. This is roughly the area of Washington DC. Fluids from leaking cars, fertilizers, herbicides, pesticides, sediments, trash and litter are washed off these hard surfaces and into our waterways. Also with less infiltration, our streams are being asked to carry an increased quantity of water that exacerbates stream bank erosion.

What is the status of our waters?

- Only a few streams, such as those in E. C. Lawrence Park, remain undisturbed and are excellent examples of healthy streams.
- Seventeen (17) streams in Fairfax County are "impaired" because of excess pollutants. The Chesapeake Bay itself has "impaired waters," according to the U.S. Environmental Protection Agency. It is estimated that Virginians must spend approximately $6.1 billion by 2010 to restore the health of the Bay. In addition, the Virginia Department of Environmental Quality has ordered clean-up through the Total Maximum Daily Load (TMDL) requirement of the Clean Water Act.
- Poor land use planning in previous decades, inadequate enforcement erosion and sediment control laws, and inadequate storm water management in past years have significantly exacerbated pollution and erosion.
- Most of Fairfax County's streams are polluted and degraded, largely from poorly managed storm water runoff. Storm water runoff transports excess nutrients, fertilizers, herbicides, pesticides, sedimentation, pollution, chemicals, and bacteria into streams from poorly managed construction sites, disturbed lands, roads,

parking lots, animal and human waste, leaking sewer pipes, and failing septic systems.

- The number one threat to the County's streams is the increase in impervious surfaces and accompanying tree loss. Impervious surfaces replace land and vegetative cover that absorbed water during precipitation events. With the increase in impervious surface and loss of vegetation, there is a concurrent increase in the amount and speed of water running off the land during storm events and carrying pollutants to nearby streams.
- Sediment, nutrients (fertilizers), pathogens (animal waste), toxics (oil, chemicals), and litter are the major water pollutants in Fairfax County.
- Most streams have increased storm water runoff flows that exceed the capacity of their channels. This has created an ongoing erosion cycle that includes eroding stream banks, heavy sediment loads, and sedimented stream bottoms. This erosion cycle persists for years, if not decades, until the stream channel widens to accommodate the flow. Silted stream bottoms and collapsing stream banks are all too common throughout our county.
- Streambank erosion from increased storm water runoff has put enormous sediment deposition into ponds and lakes, which can require frequent maintenance and dredging to maintain depth.
- During summer storms, heated impervious surfaces raise the temperature of storm water runoff entering streams and other waters, which can damage or destroy aquatic life and habitat.
- Excess nutrients in stormwater runoff encourage excessive algal growth. When the algae decomposes it uses oxygen, causing a lack of oxygen in the water, needed to support aquatic life. These problems reduce plant and animal life in and near the streams.

The Board Environmental Plan:

- Protect those streams whose waters are still of relatively high quality from becoming impaired with pollutants. Protection and prevention are less expensive and easier than restoration.
- Consider watershed protection when reviewing and deciding all land use actions. Implement the new Watershed Management Plans and Stream Protection
- Strategies as they are created. Pursue a dedicated source of funding for this effort. Without some ongoing budget commitment, this effort will languish.
- Grant no BMP waivers without storm water mitigation being in place or constructed.
- Allow and encourage better site design practices that protect our streams and other natural resources.
- Ensure strict enforcement of erosion and sediment control laws during construction.
- Slow down and filter pollutants from runoff by encouraging the establishment and maintenance of vegetative filters and buffers.
- Stabilize and restore streams using sound scientific principles (applied fluvial geomorphology) that work in concert with natural tendencies, mimic natural systems, and use environmentally friendly techniques such as soil bioengineering.

- Implement the recommendations in the March 2003 report on “The Role of Regional Ponds in Fairfax County’s Watershed Management.”
- Implement the recommendations of the New Millenium Occoquan Watershed Task Force (December 2002) to protect the County’s drinking water supply in the Occoquan Reservoir. Monitor the Health Department’s inspection of septic systems and their requirement for septic system pump-out and maintenance on a regular basis, for example, every five years.
- Improve water quality and stormwater management through tree conservation by:
    - identifying maximum attainable and sustainable tree canopy goals on both a countywide and individual watershed basis.
    - linking stormwater management and land use policy and regulations with conservation of trees, forests and riparian buffers.

IV. Solid Waste

In 2004, Virginia placed 18.3 million tons of solid waste in landfills. The state is second in the nation in importing waste from out-of-state. Current federal laws and court interpretations discourage recycling. This puts Fairfax County at a competitive disadvantage with cheaper, less environmentally responsible forms of disposal.

The County's Energy/Resource Recovery Facility (E/RRF) operates under contract with Covanta Fairfax Inc. Dominion Virginia Power buys the electrical power generated by the facility. The County continues to process more tons of solid waste than is guaranteed to the operator (930,750 tons/year), processing 102,000 tons above guarantee in 2005.

The County has completed a strategic planning program to develop a new Solid Waste Management Plan for the next 20 years. This plan has been approved by the VA Department of Environmental Quality.

The County is installing equipment to detect radioactive contamination that might enter the solid waste stream.

Since 1988, over 5.0 million tons of materials have been recycled in the County, with the County maintaining a recycling rate of over 30 percent, consistently exceeding the state mandated goal of 25 percent. The County continues its Keep It Green Partnership to provide recycling of electronic equipment.

The Board's Environmental Plan:

- Ensure that the E/RRF facility has up-to-date technology to remove as many harmful emissions as possible.
- Continue emphasis on recycling for residents and businesses; continue the County's current residential recycling program of curbside pickup of glass and metal food and beverage containers, cardboard, plastic bottles and jugs, and mixed paper.
- Encourage use of recycled products to expand the market.
- Increase the county's use of recycled paper and other products.

- Provide recycling bins in convenient locations for the public's use.
- Work with our Federal delegation to overturn the Supreme Court "Carbone" decision that limits our ability to control the flow of solid waste within our own boundaries.

V. Parks, Trails, Open Space

Open space, like parks and trails, provides habitat and promotes the physical and mental well being of citizens. Trails promote a healthy lifestyle. The Cross-County Trail provides a central artery for a comprehensive inter-county trails system.

The Board Environmental Plan:

- Create more pocket parks in urban areas for relaxation and respite.
- Create more community parks for active and passive recreation--open spaces with native vegetation to sustain local wildlife and to create areas for walking, meditating, or bird watching.
- Plan and develop a comprehensive interconnected trails system throughout the County.
- Continue to acquire open space before it is too late through direct purchase or conservation easements to create more trails, connect trails and provide passive and active recreation areas.
- Provide adequate resources to maintain and appropriately develop our parks for passive and active recreation.
- Encourage conservation easements for open space and trails either to private organizations, such as the Northern Virginia Conservation Trust and The Potomac Conservancy, or to government agencies like the Fairfax County Park Authority or the Northern Virginia Regional Park Authority.

VI. Environmental Stewardship

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. As ecosystems are rarely defined by jurisdictional boundaries, the county recognizes that how it carries out its responsibility for environmental stewardship will have effects on a regional and even global scale.

The County has numerous opportunities to partner with organizations, such as the National Park Service, the Virginia Cooperative Extension Service, civic groups, the Northern Virginia Soil and Water Conservation District and the Northern Virginia Conservation Trust to educate people on environmental protection and to include them in projects and programs for the betterment of our environment. Businesses can and should also be a part of this effort.

Teaching environmental stewardship to youngsters at an early age pays off in years of responsible behavior and decision-making.

The Board Environmental Plan:

- Encourages organizations, for example, those that work on stream monitoring and stream valley restoration, to involve schools and citizens of all ages in their work.
- Encourages citizen-based watershed stewardship groups and help them to work with all stakeholders to protect, enhance and improve the natural resources, and hence, the quality of life in their watersheds.
- Encourages schools to provide community service by students and involve children in projects that respect, protect and enhance the environment.
- Establishes an aggressive program of community groups to adopt natural areas such as parks, trails, and stream valleys.
- Establishes that county operations will be pursued in an environmentally-sensitive manner, supporting local, regional, and global environmental protection and improvement.
- Foster an appreciation for our urban forest and inspire County residents to protect plant and manage trees and forest stands on public and private lands.

Section 4
Conclusions

Environmental stewardship is both a key responsibility and a critical legacy of any elected public body. We have made great strides in the last eight years, but we can and must do more. 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.