FAIRFAX COUNTY, VIRGINIA

Environmental Improvement Program (EIP)
Appendix 7: Action Fact Sheets

Fiscal Year 2013

Prepared September 2011

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EIP13-GL07-02(A). PRM Zoning District

Description of Action

On January 9, 2001, the Board of Supervisors (BOS) established the new Planned Residential Mixed Use (PRM) District which allows high density residential uses or a mix of high density residential uses and commercial uses in areas designated for such uses in the Comprehensive Plan. This action was pursued in order to facilitate high density residential and mixed use development in transit station areas, consistent with Comprehensive Plan policy.

Environmental Agenda Objectives Supported:

Growth & Land Use 1, 2, 3, 4, and 7

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

DPZ

Status/Plans/Outcomes

The PRM District was established in 2001; as of June 2011, 20 PRM Districts have been established.

In order to ensure a broader mix of uses in high density residential areas near transit station areas and in areas designated in the Comprehensive Plan as being Urban or Suburban Centers, there has been the recognition of a desire to consider amending the PRM District to allow vehicle sale and rental establishments in the PRM District with special exception approval. This amendment is on the 2011 Priority 2 Work Program which means that the amendment is being maintained on a list for future prioritization.

Resources

The cost of staff time to review and process the amendment through the public hearing process will be absorbed within the current Fairfax County Department of Planning and Zoning (DPZ) budget; no new staff needs are anticipated.

EIP13-GL07-03(B). Area Plan Amendments and Subsequent Rezonings Supporting Transit-Oriented Development and the Provision of Housing in Employment Centers

Description of Action

The Policy Plan includes land use, transportation, and transit-oriented development (TOD) policies emphasizing the need to use land resources wisely. The Comprehensive Plan's Concept for Future Development emphasizes that employment and multifamily housing should be concentrated in centers, especially in areas served by rail transit. Since 1990, when the Board of Supervisors (BOS) adopted the Policy Plan as part of the Comprehensive Plan and the Concept for Future Development began guiding implementation of Area Plan recommendations, numerous amendments to the Area Plans have been made to focus future growth in centers and numerous properties have been rezoned in conformance with this Plan guidance. Further, the BOS adopted an amendment to the Plan in March 2007 that incorporated TOD guidelines into the Policy Plan. Continued amendment of the Area Plans and subsequent rezoning actions to further implement transit-oriented development and housing in employment centers can be anticipated into the future.

The Area Plans Review (APR) process has generated, and continues to generate, a number of Comprehensive Plan amendments supporting the provision of housing in employment centers and transit-oriented development. The 2005-2006 South County APR cycle resulted in the adoption of several nominations that increased housing potential within the employment centers of Annandale, Bailey's Crossroads, Fairfax Center and Seven Corners, particularly through mixed use developments. The 2008-2009 Base Realignment and Closure (BRAC) APR cycle, which resulted from the 2005 BRAC actions, examined planned land use in activity centers near Fort Belvoir Main Post and Fort Belvoir North, formally the Engineer Proving Ground. This special APR cycle produced several amendments in portions of the south county, such as Huntington and Springfield, which the BOS adopted in January and August 2009.

Fewer amendments related to this topic were nominated in the 2008-2009 North County APR and 2009-2010 South County APR cycles as the current Plan supports a significant amount of unrealized development potential in these areas. Several of the nominations in the Reston Herndon Suburban Center and the Dulles Transition Area near the planned Route 28 Metrorail station were deferred during the North County cycle into either special studies or inter-jurisdictional coordination meetings to evaluate the current planned land uses and intensities adjacent to the planned Metrorail transit stations. In July 2010, the BOS adopted a Plan amendment for the Route 28 Transit Station Area (north side) and a working group has been formed to review others areas surrounding the transit station, with recommendations expected by early 2012.

The BOS held public hearings for the 2009-2010 South County APR nominations in July, September, and October 2010 and January 2011. Several of the nominations that were approved

supported transit-oriented development and the provision of housing in activity centers such as the Fair Oaks Mall in the Fairfax Center Area and the Penn Daw Community Business Center along Richmond Highway.

Additional out-of-turn Plan amendments and revitalization area studies have been adopted or are currently pending, which address housing in employment centers and TOD as well. As for current planning efforts, the Tysons Corner Area-wide Comprehensive Plan amendment adopted by the BOS in June 2010 provides an example of efforts to support both TOD and housing within employment centers. The revitalization areas of Lake Anne Village Center, Springfield, Annandale and Bailey's Crossroads also address the topic and were involved in recent Plan amendments. The BOS adopted amendments in Lake Anne Village Center and Springfield in March 2003 and January 2010, respectively, and amendments for Annandale and Bailey's Crossroads were adopted in July 2010. The studies evaluate improvements to the pedestrian environment in these areas, linkages to the surrounding neighborhoods, and land use integration near transit facilities, such as the existing Joe Alexander Transportation Center in Springfield and the proposed Columbia Pike Streetcar project.

Several approved rezoning applications also support the objective of focusing growth in TOD and employment centers. In the Merrifield Suburban Center, the BOS approved several rezoning applications related to this objective. The first application, RZ 2005-PR-039, approved in December 2004, rezoned the property within the Dunn Loring Metro Center and added 550-720 units of residential development potential. The second application, RZ 2007-PR-001, approved in October 2007, requested redevelopment of industrial property for mixed use to include both residential and non-residential uses. The BOS approved in October 2007 rezoning application RZ 2005-PR-041 in the Merrifield Town Center; the proposed development would add 500-900 dwelling units. More recently, RZ 2009-PR-002 Square 1400, which the BOS approved in October 2010, consists of an approximately 330,000 square foot, 11-story multi-family residential building near the Dunn Loring- Merrifield Metro Station.

Elsewhere in the county, other examples of transit-related rezoning are pending or have been adopted as well. A mixed use rezoning proposal approved in Tysons Corner Center in January 2007 added the potential for 950-1,385 dwelling units. In October 2008, the BOS also approved in the Tysons area RZ 2008-PR-011, which includes an additional office building of approximately 160,000 square feet, near one of the four proposed Metrorail stations. In the Route 28 and Dulles Corridors, Plan amendment and rezoning applications for mixed use and housing were approved for Dulles Discovery and the EDS/Lincoln site. The BOS also approved a rezoning application RZ 2007-MA-017 in Annandale, along Little River Turnpike, that would allow for a maximum of 305,000 square feet to include a mix of residential, office, retail and other commercial uses, with an intensity up to 2.04 floor area ratio (FAR). Finally, the BOS approved the Springfield Town Center rezoning application RZ 2007-LE-007 in July 2009, which allows for approximately 2,200 multi-family units, approximately 2 million square feet of office use, expansion of the existing mall, and additional ground-floor retail use, near the Joe Alexander Transportation Center.

Two applications, located in Reston, also support this goal. In June 2009, the BOS held a public hearing on the Wiehle Avenue Joint Development project for an area near the Reston Metro Station at Wiehle Avenue and approved a ground lease and development agreement for the project. The related rezoning application RZ/FDP 2009-HM-019, adopted in May 2010, rezoned 12.47 acres to permit transit-oriented mixed use development at an intensity up to 2.5 FAR. The approved TOD development consists of approximately 1.3 million square feet of residential, office, hotel, and retail uses integrated with Metrorail facilities, including: a public plaza; a 2,300-space, below-grade county owned parking garage for the Metrorail station; and other transit and commuter facilities. The BOS approved RZ 2009-HM-019 Comstock Reston Station in May 2010, also located at Wiehle Avenue. The rezoning application included 1.3 million square feet of development with bonus density associated with workforce housing. The development consists of 513 multi-family dwelling units, and office, hotel, and retail uses integrated with the Metrorail facilities. Further information on planning-related and supporting actions can be found in item EIP13-GL07-06(B), Pedestrian-Oriented Neighborhood Commerce: Plan Implementation.

Environmental Agenda Objectives Supported:

Growth & Land Use 1, 2, 3, 4, and 7

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Change Initiative

Lead Agency:

DPZ

Status/Plans/Outcomes

Since the implementation of planning policy is an ongoing process, efforts to implement and refine the Comprehensive Plan related to housing in employment centers and TOD will continue. As described above, several Plan amendments have been adopted through the regular APR process, out-of-turn Plan amendments and special studies. The implementation and anticipated implementation of these Plan recommendations will continue to occur through the zoning process.

Resources

The annual cost for implementation of this action represents a considerable amount of Fairfax County Department of Planning and Zoning (DPZ)'s annual budget. These funds are the primary source for Comprehensive Plan activities and do not include the cost associated with development review and cost of other agencies involved in completing this objective. In addition, some work, described below, is being funded through a federal grant.

Examples of projects for which DPZ allocated funding include the Urban Land Institute studies of Springfield, Baileys Crossroads and Annandale, for a total of approximately $330,000, and follow-up studies. The study of the BRAC impact on land use in Fairfax County, including consultant services of the Springfield Connectivity Study and the BRAC APR, were funded by the Department of Defense Office of Economic Adjustment. The original grant, received in 2008, included approximately $1,550,000. The 2009 reauthorization included approximately $3,600,000, and the 2010 reauthorization included an additional $143,979 with a total approved grant (federal and non federal share) of approximately $3.8 million. The time frame of the grant is anticipated to extend through August 2011to support BRAC-related efforts. The Bailey's and Annandale studies, completed in 2009, cost approximately $380,000 and $280,000, respectively. Various planning and transportation consultant studies to support the adoption of the Tysons Corner Comprehensive Plan amendment were funded in the amount of around $2.5 million over a multi-year period. These cost estimates do not include the significant level of staff resources from DPZ and other agencies needed for study preparation and support.

EIP13-GL07-04(B). Planned Development District Zoning Ordinance Amendment

Description of Action

This action is a review of, and possible revision to, the Planned Development District standards to, among other things, place a greater emphasis on tree preservation and the efficient use of open space.

Staff has been requested to pursue this Zoning Ordinance amendment in order to implement a recommendation of the Infill and Residential Development Study, which was endorsed by the Board of Supervisors (BOS) in 2001.

Environmental Agenda Objectives Supported:

Growth & Land Use 1
Parks, Trails & Open Space 1

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Stabilization Initiative
Infill and Residential Development Study
Fairfax County Tree Action Plan

Lead Agency:

DPZ

Status/Plans/Outcomes

Staff has been working on a Zoning Ordinance amendment addressing Planned Development Districts and has coordinated draft amendment proposals both internally and with the Planning Commission's Policy and Procedures Committee, the Fairfax Committee of the Engineers and Surveyors Institute (ESI), the Northern Virginia Building Industry Association (NVBIA) and various citizen groups. The consideration of a Zoning Ordinance amendment is on the Priority 1 list of the 2011 Zoning Ordinance Amendment Work Program, although there is not yet an anticipated date for authorization of public hearings.

Resources

The cost of staff time to process the amendment through the public hearing process and to provide the necessary follow up training and educational opportunities for both staff and citizens will be absorbed within the current budget; no new staff needs are anticipated. However, these actions require Fairfax County Department of Planning and Zoning (DPZ) staff resources, thereby reducing resource availability for other tasks.

EIP13-GL07-06(B). Pedestrian-Oriented Neighborhood Commerce: Plan Implementation

Description of Action

In the past few years, there has been an increase in proposed high density developments that integrate pedestrian oriented neighborhood commerce. Examples include, but are not limited to:

- The approved redevelopment of the Fairlee neighborhood (RZ 2003-PR-022) adjacent to the Vienna Metro station, which includes residential, office, and hotel mixed use with pedestrian-oriented retail use, rezoning approved in March 2006;
- The approval of the Ridgewood development (RZ 2005-SP-019) for residential, office, and hotel mixed use with limited pedestrian-oriented retail use in the Fairfax Center Area, rezoning approval in June 2006;
- The Tysons Corner Center rezoning application (RZ 2004-PR-044), located near one of the four planned Metrorail stations in Tysons Corner at the intersection of Chain Bridge Road and Interstate 495, which consists of approximately six million square feet of development, including the existing mall and other pedestrian-oriented retail integrated into new residential and commercial uses, approved in January 2007;
- The concurrent Plan amendment and rezoning application for the Springfield Mall area (PA S06-IV-01; RZ 2007-LE-007), which integrates office, hotel, residential mixed-use with ground-floor retail uses, surrounding an expanded mall, and emphasizes the need for pedestrian-oriented design; the rezoning was approved in July 2009;
- The concurrent Plan amendment and rezoning application (PA S08-IV-RH1/ RZ 2009-MD-003) of the Hilltop Sand and Gravel site on Telegraph Road, rezoning approved in March 2009, which includes some office use over ground-floor retail; and,
- The approval of the Comstock Reston Station rezoning application (RZ 2009-HM-019) for residential, office, hotel, and ground-floor retail uses near the Reston Transit Station at Wiehle Avenue, rezoning approval in May 2010.

Comprehensive Plan policy supports the integration of neighborhood-serving commercial uses within residential areas, and both a Zoning Ordinance amendment (see EIP13-GL07-02) and Area Plan amendments (see EIP13-GL07-03(B)) have been adopted in recent years to support such integration of uses. This action recognizes that implementation of this Plan policy will be a continuing process.

Environmental Agenda Objectives Supported:

Growth & Land Use 2 and 7

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Change Initiative

EIP13-GL07-06 (B). Pedestrian-Oriented Neighborhood Commerce: Plan Implementation Continued

Lead Agency:

DPZ

Status/Plans/Outcomes

Since the implementation of planning policy is an ongoing process, efforts to implement and refine this aspect of the Comprehensive Plan will continue.

Resources

Costs can be considered to be part of broader comprehensive planning activities that have been identified as resources needed to implement item EIP13-GL07-03. No additional resources are needed.

EIP13-GL07-07(B). Adequate Infrastructure Legislation

Description of Action
Recommend to the Board of Supervisors (BOS) continuation of the position included in past Legislative Programs supporting legislation to give localities authority to adopt an adequate public facilities (APF) ordinance. Such legislation: 1) should permit localities to adopt provisions in their subdivision and site plan ordinances for deferring the approval of subdivision plats or site plans when it is determined that existing schools, roads, public safety, sewer or water facilities are inadequate to support the proposed development; and 2) should not require localities to construct the necessary infrastructure within a timeframe established by the General Assembly.

Environmental Agenda Objectives Supported:

Growth & Land Use 6

Other Plans or Documents where this action appears or that it supports:

Lead Agency:

Government Relations, Office of the County Executive

Status/Plans/Outcomes
The Code of Virginia (Section 15.2-2200) encourages localities "to improve the public health, safety, convenience and welfare of its citizens and to plan for the future development of communities …" In addition, the Code mandates localities to adopt ordinances regulating subdivision and development of land. Yet the Commonwealth does not provide localities the authority to defer approval of a site plan or subdivision plat pending installation of certain public facilities even when it has been determined that existing facilities are inadequate to support the development proposal. As a result, developments proceed, with the inevitable result of increased shortages in infrastructure and the need to play catch up after the fact. The public health, safety, convenience and welfare of citizens are not well-served by this situation.

Historically, Fairfax County has acknowledged a need for additional local government authority to ensure the timely provision of adequate public facilities (APF) to accommodate new development. In past years, the county has participated with other jurisdictions in crafting such legislation and in monitoring proposals before the General Assembly. Most recently, the county has joined and worked with the Virginia Coalition of High Growth Communities, whose priorities include pursuit of APF authority, and, for the last several years, the county has included in its Legislative Programs a position statement supporting APF legislation.

As in past years, the 2011 General Assembly declined to grant any authority to local governments to adopt adequate public facilities ordinances. Although the prospects of success

for comprehensive APF authority in the near term are not anticipated to be high, the county should continue to pursue this legislative position.

Resources

There would be no additional costs associated with this action. The cost of staff time to research and draft an APF legislative position, coordinate with legal staff and affected agencies, vet the position with the BOS and its Legislative Committee, and advocate APF legislation during the General Assembly would be included in current operating budgets.

In the event that such legislation was to be adopted by the General Assembly, there would be costs associated with the creation and administration of a program to address the new legislative authority. These costs cannot be calculated at this time because specifics of the enabling legislation do not exist.

EIP13-GL07-08(B) – Review of Federal NEPA Reports and State Environmental Impact Reports

Description of Action

Review of federal Environmental Assessments and Environmental Impact Statements (prepared pursuant to the National Environmental Policy Act [NEPA]), and review of state Environmental Impact Reports (EIRs), for a broad scope of environmental considerations.

Environmental Agenda Objectives Supported:

Growth and Land Use (General)
Water Quality 2, 5, and 7

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Fairfax County Tree Action Plan

Lead Agency:

DPZ

Status/Plans/Outcomes

NEPA documents cover a broad range of actions pursued through federal funding, of which most, if not all, fall outside of the county's zoning authority. EIRs address significant land use and development proposals by state agencies. Recent NEPA and EIR documents for projects in (or affecting) Fairfax County have included the Base Realignment and Closure (BRAC) activities associated with Fort Belvoir, other development projects at Fort Belvoir, development projects at Washington Dulles International Airport (including new runways), development projects at George Mason University (GMU), changes to airspace design in the Washington, D.C. metropolitan area, the proposed Metrorail extension to and beyond Dulles Airport, and major highway projects such as the Manassas Battlefield Bypass and the Tri-County Connector. County staff reviews and comments on most NEPA and EIR documents that it receives and conducts follow-up actions as appropriate.

Through the provision of comments on NEPA and EIR documents, the county is able to suggest actions consistent with Comprehensive Plan goals, objectives, and policies for projects that fall outside of the county's zoning authority. In the case of EISs, the NEPA review process requires project sponsors to address all comments (even if they are not required to agree with all comments). While the county's comments are not uniformly considered and accepted by federal and state project sponsors, there have been a number of such reviews that have resulted in direct negotiations between project sponsors and county staff, and responsiveness from project sponsors, on issues of concern to the county.

Resources

NEPA and EIR reviews are conducted with existing staff, although considerable staff time is often needed for the review of complex state and federal projects. The often-substantial staff resources that are dedicated to these reviews are unavailable for other projects and priorities.

EIP13-GL07-09(B). Future Planned Development District Zoning Ordinance Amendment

Description of Action

Amend the Zoning Ordinance to expand the number of uses allowed in Planned Development Districts and to revise allowed densities/intensities of uses in these districts, as appropriate, to better support Comprehensive Plan recommendations regarding mixes of uses in growth centers. This action would go beyond what is currently being considered per EIP13-GL07-04, which focuses on tree preservation and open space considerations associated with the Infill and Residential Development Study, and EIP13-GL07-02, which focuses on the addition of a specific use in the PRM District.

Environmental Agenda Objectives Supported:

Growth & Land Use 1, 2, 3, 4, and 7

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

DPZ

Status/Plans/Outcomes

The 2011 Zoning Ordinance Amendment Work Program identifies, as a Priority 1 item, the consideration of increases to maximum allowable floor area ratios as well as other provisions in the PDC and PRM Districts to facilitate the implementation of the Comprehensive Plan recommendations for Revitalization Districts and Areas, Community Business Centers and Transit Station Areas. It is anticipated that this amendment will be brought forward for consideration by the Board in the fall of 2011. In addition, the Planned Tysons Corner Urban District Zoning Ordinance Amendment was adopted by the Board on June 22, 2010 which allowed for higher intensities/densities in Tysons Corner and the ability to implement the Tysons Comprehensive Plan recommendations.

Resources

The cost of staff time to review and process this amendment would be absorbed within the DPZ budget.

EIP13-GL07-10(B). Maintaining Neighborhood Character Zoning Ordinance Amendment

Description of Actions
Consider amending the Zoning Ordinance to incorporate methods, such as maximum lot coverage or floor area ratio requirements, that address compatibility issues associated with new residential development in existing residential districts.

Environmental Agenda Objectives Supported:

Growth & Land Use 6

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Infill and Residential Development Study

Lead Agency:
DPZ

Status/Plans/Outcomes
The consideration of a Zoning Ordinance amendment to address the maintenance of neighborhood character is on the Priority 1 list of the 2011 Zoning Ordinance Amendment Work Program. On September 14, 2009, the Board of Supervisors (Board) adopted a Zoning Ordinance amendment that requires that, for purposes of determining single family detached building height, grade be taken from the pre-development grade or post-development grade, whichever is lower. This amendment precludes a fairly common practice whereby a lot is artificially elevated with fill resulting in the construction of taller houses that technically comply with the maximum 35 foot height limit, since building height was previously measured from finished grade. However, in such circumstances the effective height of the dwelling was one that included the combined height of the structure plus the height of the fill material. In a January 11, 2011 update to the Board on the effectiveness of the grade amendment, staff recommended no further action on this issue at this time.

Resources
The cost of staff time to process the amendment(s) through the public hearing process and to provide the necessary follow up training and educational opportunities for both staff and citizens will be absorbed within the current budget; no new staff needs are anticipated.

EIP13-GL08-01(B). Review Zoning Ordinance Parking Requirements in Transit-Oriented Developments

Description of Action

Article 11 of the Zoning Ordinance establishes minimum off-street parking requirements for residential, commercial, industrial, and other uses. The minimum parking requirements are use-specific and do not differentiate among the various settings within which these uses can be established. There is some flexibility in the application of the minimum parking requirements as follows:

1. Paragraph 26 of Section 11-102 of the Zoning Ordinance establishes that the Board of Supervisors (BOS) can reduce the required parking in conjunction with a proffer for the establishment of a transportation demand management program.
2. Paragraph 5 of Section 11-102 of the Zoning Ordinance allows the Board to reduce parking requirements (a) within the area in proximity to a mass transit station (assuming that the station exists or is programmed for completion within the time frame of the development project), and (b) along a corridor served by a mass transit facility (when the facility is conveniently accessible to the proposed use and offers a regular scheduled service).
3. In Commercial Revitalization Districts the Board may reduce the minimum parking requirements for non-residential uses.

The Board can impose conditions on such parking reductions.

However, in an effort to provide further flexibility to modify parking requirements where appropriate to further land use, transportation, and/or environmental objectives, an evaluation of the off-street parking requirements would allow for the consideration of:

- Whether parking requirements should differ within specific uses depending on the setting of the use (e.g., should standards be different in transit-oriented development areas);
- Whether maximum parking requirements may be appropriate for certain uses or in certain circumstances; and
- Whether additional flexibility in allowing for modifications of parking requirements may be appropriate, and, if so, under what circumstances such flexibility should be provided.

Fairfax County has adopted a number of policies and established numerous programs that encourage and support Transportation Demand Management (TDM). These efforts include the objectives identified in the County's Policy Plan, the implementation of these objectives through the existing development process and the provision of direct TDM services. The overall purpose of TDMs in the development process is to reduce vehicle trips by using TDM techniques.

In order to better integrate the use of TDMs into the land use and development processes, the county is nearing completion of a consultant study with national experts on the application and

effects of TDM policies. The study will make recommendations to better integrate TDM into the land use and approval process, including estimating TDM reductions and reviewing parking requirements in transit-oriented development. A Project Steering Committee, consisting of county staff, Planning Commissioners and Board of Supervisors (BOS) members, is providing oversight, review and comment on the study. The study should be competed in the near future and any necessary amendments to the Plan and/or Zoning Ordinance will subsequently follow.

Preliminary findings from the TDM study were used to determine vehicle reduction goals, reduce parking requirements, and limit parking in the Comprehensive Plan and Zoning Ordinance amendments approved by the Board for Tysons Corner on June 22, 2010. In the new zoning district for Tysons, the PTC District, off-street parking maximums have been established based on the distance from a Metro Station entrance. The more stringent parking maximums apply to areas within 1/4 mile of a Metro Station. To further encourage the reduction in the number of off-street parking spaces, the Zoning Ordinance now allows developments located within the 1,700 acre Tysons Corner Urban District to voluntarily reduce the number of required off-street parking spaces to the rates specified in the PTC District, subject to approval of a parking redesignation plan. Experiences from the Tysons Corner effort may inform discussions associated with other transit-oriented areas.

Environmental Agenda Objectives Supported:

Growth & Land Use 1, 2, 3, 4, 5, and 7
Air Quality and Transportation 1
Water Quality 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Stabilization Initiative

Lead Agencies:

DOT and DPZ

Status/Plans/Outcomes

The 2011 Zoning Ordinance Amendment Work Program identifies, as a Priority 1 item, the consideration of applying parking maximums and a reduction of the minimum parking requirements due to transit oriented areas and/or transportation demand provisions. It is anticipated that this item will be addressed in conjunction the PDC and PRM Districts Zoning Ordinance Amendment which is tentatively scheduled for public hearing in late 2011/early 2012.

Resources

The cost of staff time to process one or more Zoning Ordinance amendment(s) through the public hearing process and to provide the necessary follow up training and educational opportunities for both staff and citizens would be absorbed within the current budget; no new staff needs are anticipated.

EIP13-GL08-02(A). Development of the Integrated Parcel Lifecycle System (IPLS)

Description of Action

Development of an integrated parcel lifecycle system (IPLS) that will allow parcel level data to be captured in a GIS-based data warehouse. The goal of the new system is to create a cross-functional data store to better harness the value of land parcel information that various county departments maintain and to make that information widely available through GIS technology.

Environmental Agenda Objectives Supported:

This action broadly supports the Environmental Agenda. It provides a better land use data system that supports analyses necessary to implement many of the Environmental Agenda Objectives.

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan

Lead Agency:

Department of Neighborhood and Community Services (which includes the functions formerly provided by the Department of Systems Management for Human Services) (initially only). Now that the initial system has been established, individual agencies will take the lead in the development of additional modules. The data warehouse concept will allow other county agencies to build upon the foundation that the Department of Systems Management for Human Services developed.

Status/Plans/Outcomes

The IPLS data warehouse and reporting applications are available to all county staff using GIS tools or Oracle tools. An initial training and introductory session was conducted in May 2008 and additional training session will be conducted periodically. The IPLS data warehouse contains parcel-level information from the real estate assessment database (IAS); the zoning database (ZAPS); the development plan database (PAWS); the building permit and inspections database (FIDO); the Department of Planning and Zoning base planned land use layer and plan option database, the master address file; various geography layers, assumption tables and layers used for creating demographic estimates and forecasts; and housing unit estimates and forecasts, housing value estimates, household estimates and forecasts, population estimates and forecasts, commercial and industrial gross floor area estimates, and existing land use. In addition, IPLS contains menu driven tools that allow users to develop reports and maps for summarizing IPLS data.

The Department of Planning and Zoning is currently building a module to summarize the nonresidential development pipeline activity. Technical resources are in place to build this module and DPZ staff is reviewing and evaluating the data. The Public Access Technologies (PAT) branch of the Department of Information Technology has been tasked with identifying an enterprise solution for meeting additional analysis and reporting needs of IPLS.

Resources

The Integrated Parcel Lifecycle System data warehouse structure and demographic analyses modules have been funded and the planned database development is complete. The PAT branch has been provided initial funding and has been charged with identifying an enterprise solution for the additional reporting and analysis needs of IPLS. Ancillary actions, such as the updating of the county's planimetric data layer (see EIP13-GL08-05), are not part of this project and will require additional resources.

EIP13-GL08-05(B). Update the County's Planimetric Data Layer

Description of Action

The action is providing for the updating and continued maintenance of the planimetric data layer of the county's geographic information system (GIS). "Planimetric data" are features of the built and natural environment visible in aerial photography, including impervious surfaces. Examples include: buildings; hydrographic features such as lakes, streams, paved ditches, and wetlands; transportation facilities such as roads, trails, parking areas, and driveways; street centerlines and sidewalks; railroads; recreation facilities; airports; and utility features such as transmission lines and towers. While significant updates of some of the planimetric data in the county's GIS have been pursued since initial data acquisition from 1997 aerial photography, there has been no systematic maintenance/updating of these data, until now despite the fact that planimetric features are one of the most frequently used categories of GIS data.

Prior to initiating the project, an informal survey of the county's GIS users identified a wide range of needs for updated planimetric data, including public safety, planning, transportation, public facility, and park purposes. Therefore, while this action has been identified in the EIP, it is far greater than an "environmental" initiative. The implications and benefits of this action are manifold and cut across numerous agency and disciplinary lines.

Environmental Agenda Objectives Supported:

This broadly supports the Environmental Agenda. It provides better, more up-to-date data that will support analyses necessary to implement many of the Environmental Agenda Objectives.

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Fairfax County Park Authority Strategic Plan

Lead Agency:

DIT

Status/Plans/Outcomes

The state of Virginia captured aerial photography at one- and two-foot resolutions for the entire state in March 2007 and again in March 2009. Fairfax County cost-shared with the state to increase the imagery resolution to one-half foot. The higher resolution increases the positional accuracy of features captured from the aerial imagery as well as makes more detail available to users of the imagery (for instance, in many cases, manholes can be identified). The base set of planimetric features that would need to be updated includes all of the planimetric features originally compiled in 1997. New features that have been added to assist in environmental and transportation needs include:

- Driveways
- Sidewalks
- Pools
- Patios
- Decks
- Sheds
- Tennis & basketball courts
- 2-foot Contours (currently have 5-foot Contours)
- Bus-stop pads
- Building heights
- Multi-level parking garages

These features were identified in the user survey as assisting county operations.

Two approaches had been identified to keep the planimetric data layer reasonably up to date. The first approach would focus on a single update process through which the entire county would be updated at once. This would update all of the data at one time, but the next update would not be programmed and therefore there would be considerable uncertainty regarding the timing of this update. The second approach would establish a continuing four year cycle through which one quarter of the county would be updated each year (but using the same imagery set for all 4 quarters). While this approach would provide the best guarantee for updating since it does not require a massive one time funding (it would instead be an ongoing project), it would mean that some of the planimetric data could be 8 years old by the time it was updated.

The second approach was decided upon in FY 2007. Through combined funding from stormwater management and DIT special projects, sufficient funds were allocated (based on some contractor estimates) to update 25% of the county annually for two years. The first quadrant (SE) update has been completed and delivered and is now available in the GIS. Aerial imagery flown in March 2007 was the source of that data. The second quadrant commenced in November 2010; work should be completed inSeptember 2011. Because the project schedule slipped, 2009 aerial imagery will be used as the base of the remaining three quadrants. Stormwater provided its share of funds for the third quadrant, which is scheduled to start in September 2011. Funding for the fourth quadrant will be dependent on the availability of funds in future budgets.

To keep costs down, project vendors have relied in large part on offshore work, including work performed by companies in China. This has resulted in cost savings from what was initially estimated to be required for this effort. With respect to the SE quadrant, however, the offshore work raised security issues with the Department of Defense relating to Ft. Belvoir data being prepared in China; as a result, a more costly on-shore approach was pursued for Fort Belvoir, and cost savings are therefore not as great as they otherwise would have been. A quality control contractor was also selected and assisted in reviewing the data deliveries.

The prime contractors cost proposal to do the planimetric work of the second quadrant was more than double the cost expected, based on their first quadrant bid. The subcontractor doing the majority of the work was replaced, and a revised bid submitted. Further negotiation reduced the revised bid to $280,615. While this is 25% higher than expected based on the first bid, it is 13% less than the cost of the first quadrant. The conclusion is that the original first quadrant bid did not accurately capture

all of the labor involved and that the revised bid was acceptable. Interaction with another vendor confirmed the revised bid was competitively priced. The prime contractor has been retained with the new subcontractor doing the majority of the work. Their work is being done in India. This approach will retain the prime contractors knowledge and experience on this complicated work. The same quality control vendor has been retained. Based on the experience with the first quadrant, changes were made to the Quality Control Statement of Work and some of the quality control work is now being done by the county's GIS staff. Where the contractor had been checking 8% of the features, staff are now checking 100% of features. This has provided cost savings.

An estimated $210,000 will be needed from DPWES to cover the cost of the fourth quadrant.

Now that the first quadrant (SE area) is complete, it is interesting to look at some project statistics on features added or updated:

- 80,094 top and ground elevation values are available for all of the buildings - (new feature)
- 27,291 buildings
    - 61 are multi-story garages (new feature)
- 64,834 paved driveways (new feature)
- 1,829 unpaved driveways (new feature)
- 63,086 building additions (deck, patio, pool, other) (new feature)
- 691 recreational features (tennis,basketball courts, other) (new feature)
- 70,408 new spot elevations
- 28,088 miles of 2' contours (new feature. Previously had 5' contours)
- 1,025 linear miles of hydrography
- 142 storage tanks were added (new feature)

Overall, 1,074,486 new/updated features were added to the GIS database. Considering that the entire GIS database before the start of this project had 1,512,432 features, we project that the total features in the database when all four quadrants are complete will exceed 3,500,000. The estimated cost per feature is about $0.30.

Resources

The first data capture option – the one-time updating of the planimetric data layer would have had an estimated cost to obtain the photography of $1.15 million ($1.44 million with the additional data layers identified above). This estimate includes the flying of the county and processing the imagery along with funds for independent quality control. Additional funding would have been needed to maintain the planimetric layer over time.

The second option, to pursue a recurring, cyclical process through which planimetric data for one-fourth of the county would be updated each year, was funded. Under this four-year revolving cycle approach, an average of $350,000 would be needed each year to update the planimetric data for 1/4 of the county. $281,000 is for data compilation, of which 17% is for the new features being captured and 25% is to collect the 2' contours (that has been 5' contours in the past). $60,000 of the total is quality control. The quality control costs for the second quadrant have been reduced by having county staff do more of that work. However some of those savings will be consumed by the

increased cost of the planimetric compilation. The total cost for the first quadrant was $429,000. The higher cost was due to the onshore data requirements for the Ft. Belvoir area. The cost of the second quadrant is $280,616.

EIP13-GL08-06(B). Mapping of Fairfax County's Vegetation Resources

Note: This action was formerly entitled "*Mapping of Fairfax County's Vegetation Ecosystems"*

Description of Action

This project entails the mapping of the county's vegetation by ecosystem-based communities, using the United States National Vegetation Classification System (USNVCS) as a standard. The final product will be a polygon-based GIS dataset that is fully compatible with other planimetric data and will delineate the extent and distribution of over 40 indigenous plant communities down to the parcel level.

USNVCS mapping will allow approximate measurements of the total area and distribution of specific vegetation communities on a countywide basis and should be valuable in the identification and conservation of unique and/or threatened plant communities and species on a parcel level.

Environmental Agenda Objectives Supported:

This action would broadly support the Environmental Agenda. It would provide valuable information regarding the county's vegetation communities and would assist in natural resource management planning efforts.

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Park Authority Natural Resource Management Plan
Park Authority Policy Manual
Park Authority Strategic Plan
Fairfax County Tree Action Plan
Tree Conservation Ordinance

Lead Agency:

DPWES, Urban Forest Management Division

Status/Plans/Outcomes

The Urban Forest Management Division (UFMD) has been unsuccessful in mapping vegetation into USNVC communities as proposed in this action. During 2011, after several attempts to conduct supervised classifications, UFMD determined that the amount of spectral data provided in 4-band, multi-spectral satellite imagery is not adequate to consistently produce vegetation community maps with acceptable confidence levels. Hyper-spectral or enhanced spectral

imagery will be needed to delineate reflective values at the level needed to delineate the range of vegetation communities present in the County.

The County acquired updated satellite imagery in the spring of 2011. Although, the cost of hyper-spectral imagery remains prohibitively expensive (an estimated $200K to $300K) to acquire for entire County, the satellite imagery acquired in 2011(enhanced imagery) will contain 8 spectral bands which are anticipated to enhance ability to detect different types of vegetation. However, it remains to be seen if the additional data contained in the 8-band product will be useful in delineating the range of species that present in the County's tree cover, which would be prerequisite to community-level mapping.

Instead of attempting community level mapping, staff will first evaluate the use of the new 8-band imagery in the delineation of a reduced set of tree species, such as ash, that are currently threatened by pests or may be threatened by pests in the near future. Staff also intends to delineate the locations of several invasive tree species such as escaped Callery pear (includes Bradford Pear) and Ailanthus (Tree of Heaven). If the reduced set of tree species can be successfully delineated, then staff may continue efforts to map the upper canopy down to the Alliance level of the USNVCS.

Although present analysis software and affordable satellite imagery may not ultimately prove useful, the inventory and classification of vegetation communities is needed to manage the county's forest resources and support other natural resource management initiatives (see EIP13-PT08-03(B), Park Information Systems will continue to seek solutions for this need.

Resources

The County acquired updated satellite imagery in the spring of 2011. Upon evaluation of success in delineating individual species using the 8-band imagery, resource needs associated with community-level mapping may become more apparent.

EIP13-GL08-11(A). Urban Forestry Roundtable

Description of Action

This action relates to efforts by the Urban Forest Management Division, DPWES, (UFMD) to support and participate in the newly formed Northern Virginia Urban Forestry Roundtable (NVUFR). NVUFR has been formed to provide a forum for inter-jurisdictional communication and policy development for use by local governments, tree commissions, citizen-based environmental groups, and the public.

Environmental Agenda Objectives Supported:

Growth & Land Use (General)
Environmental Stewardship (General)

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Stabilization Initiative
Fairfax County Tree Action Plan
Tree Conservation Ordinance

Lead Agency:

DPWES, Urban Forest Management Division

Status/Plans/Outcomes

This effort has been completed, and the Roundtable continues to meet . The lack of regional communication over urban forestry issues is thought to have limited past efforts to obtain tree conservation legislation and to develop other effective programs and practices related to the management of trees and forest resources. NVUFR was formed in late 2005 to bring local environmental groups, tree commissioners and urban forestry officials together to examine ways to cooperate over regional issues such as efforts to obtain tree conservation legislation and to develop urban forestry practices and measures for ozone mitigation. UFMD provided leadership during the formation of NVUFR and has been instrumental in organizing a regional conference on trees and air quality plans in November of 2005. In addition, UFMD organized and hosted a NVUFR tree conservation strategy workshop at the Fairfax County Government Center in May 2006. The May 2006 work shop was attended by over 50 people including officials from Virginia Forestry Board and speakers from the Virginia State Senate and House of Delegates. Participation in the NVUFR is critical for the success of the county's tree conservation legislative efforts and regional efforts to embed a credited urban forestry ozone mitigation measure in the 2009 Metropolitan Washington Air Quality Plan.

In late 2007, NVUFR held a conference that lead to the formation of an ad-hoc group that included Virginia State Senator Patricia Ticer and Virginia State Delegate David Bulova plus representatives of the Northern Virginia Building Industry Association, the Fairfax County Tree Commission, the Virginia Department of Forestry Board, and the Fairfax County Urban Forest Management Division. The work of that NVUFR sponsored committee lead to the writing of House Bill 1437 and Senate Bill 710 which were tree conservation bills. Both bills were passed by the 2008 Virginia Legislative Assembly and signed into law (§ 15.2-961.1) by the Governor of Virginia on March 4, 2008. This new authority represents the first broad-based authority for localities to require tree conservation during land development.

NVUFR continues to host regional conferences, with the last quarterly regional Roundtable held at time of publication in May, 2011, entitled "Managing Natural Areas in Urban/Urbanizing Areas." Staff will continue to participate in NVUFR on forest and tree related issues of regional concerns.

As of 2011, NVUFR is established as a valuable resource for the exploration of regional forestry topics. Since the passing of Virginia State Code § 15.2-961.1 in 2008, NVUFR has shifted its attention from tree conservation legislative (the original focus of this action) to other urban forest management issues. Although, County staff and Tree Commissioners will continue to participate in NVUFR activities, we consider this action as completed.

Resources

No additional resources are needed to support this action.

EIP13-GL08-12(B). Consider Amending Article 13 of the Zoning Ordinance (Landscaping and Screening)

Description of Action

Consider Amending Article 13 of the Zoning Ordinance (Landscaping and Screening) to:

- Strengthen parking lot landscaping requirements in order to increase shading, thereby reducing evaporative air pollutant emissions from motor vehicles;
- Strengthen screening and buffering requirements adjacent to major trails such as the Washington and Old Dominion Trail;
- Clarify the use of existing trees and alternative plant materials for landscaping requirements;
- Consider whether additional incentives may be available for tree preservation and other recommendations in the Tree Action Plan; and
- Add more guidance regarding requirements for maintenance of landscaped areas.

A first step in this process would be to identify quantitative goals for incorporation into this amendment pertaining to appropriate levels of tree cover in parking lots, appropriate screening and buffering requirements adjacent to trails, and appropriate maintenance practices. Outreach to stakeholders should be a component of staff's process for formulating such quantitative goals.

Environmental Agenda Objectives Supported:

Growth & Land Use 8
Air Quality & Transportation 7/10
Water Quality 11/12

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Fairfax County Tree Action Plan
Tree Conservation Ordinance
Cool Counties Climate Stabilization Initiative

Lead Agencies:

DPWES, Urban Forest Management Division; DPZ

Status/Plans/Outcomes

As part of a broader set of amendments associated with the new Tree Conservation Ordinance (Chapter 122 of the Fairfax County Code) that were adopted in October 2008 and that became effective in January 2009, the Zoning Ordinance transitional screening requirements were

revised to ensure a better chance of survival of the landscaping materials and the landscaping maintenance requirement for landscaping was also clarified.

A Priority 2 item on the 2011 Zoning Ordinance Amendment Work Program recommends a comprehensive review of landscaping and screening provisions to include the following:

- Appropriateness of modification provisions.
- Address issue of requirements where property abuts open space, parkland, including major trails such as the W&OD trail) and public schools.
- Increase the parking lot landscaping requirements.
- Include tree preservation and planting requirements.
- Consider requiring the use of native trees and shrubs to meet the landscaping requirements for developments along Richmond Highway.

Priority 2 items will not be worked on this year, but will be maintained on the list for future prioritization.

Resources

N/A.

EIP13-GL08-13(B). Support for Regional Land Use and Related Transportation Planning Initiatives

Description of Action

County staff provides ongoing support to a number of regional land use planning initiatives. These efforts have included and/or will include:

- Participation on and support to the Cooperative Forecasting and Data Subcommittee (CFDS) of the Metropolitan Washington Council of Governments (COG). This is a technical subcommittee that is responsible for preparing 30-year population, household and employment forecasts at the traffic analysis zone level for the entire metropolitan Washington region. These forecasts are used for a variety of planning and funding purposes. County staff provides population, household and employment forecasts for Fairfax County. These data are updated regularly. In 2009, a new set of forecasts was provided for COG Round 8.0, from year 2005 to 2040. These forecasts were established based on new COG traffic analysis zone (TAZ). The Department of Planning and Zoning worked with COG staff, in cooperation with other county agencies including the Department of Transportation, the Department of Neighborhood and Community Services and the Department of Information Technology/Geographic Information Systems to establish new zones for better data collection and analysis. This effort increased the number of TAZs from 344 to 526 in Fairfax County. Currently, DPZ staff is reviewing the data to provide an updated set of forecasts for next COG Round 8.1.
- Participation on the Planning Directors Technical Advisory Committee of COG. This technical subcommittee makes recommendations to the COG Board on regional population growth, economic growth and land use issues. Projects undertaken by the Planning Directors Technical Advisory Committee focus on enhancing coordination between regional land use and transportation planning. One product of the committee's work was the publication of "Metropolitan Washington Regional Activity Centers: A Tool for Linking Land Use and Transportation Planning." In 2010, this committee updated the Activity Center boundaries due to significant changes in TAZ boundaries in the entire region. DPZ staff provided assistance to the COG staff in adjusting and refining these boundaries in Fairfax County.
- Participation in the Greater Washington 2050 Coalition group of public, private and civic leaders created by COG to help the region meet future challenges through comprehensive planning and greater cooperation. This group developed the Region Forward vision for a more accessible, sustainable, prosperous and livable National Capital Region.

Participation on the Metropolitan Washington Air Quality Committee is addressed by EIP13-AQ07-14(B). County staff also participates actively in a variety of other regional committees addressing a variety of environmental and transportation issues.

Environmental Agenda Objectives Supported:

Growth & Land Use 1, 2, 3, 4, and 7

Air Quality & Transportation 1 and 2

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Change Initiative

Lead Agencies:

DPZ; DOT

Status/Plans/Outcomes

Staff support of these regional efforts will be ongoing. The Director of the Department of Planning and Zoning is a key presence on the Planning Director's Technical Advisory Committee to the Metropolitan Development Policy Committee (MDPC). Staff from the Department of Planning and Zoning, the Health Department, the Department of Transportation, the Department of Neighborhood and Community Services and the Economic Development Authority invests time and talent at the regional level dealing with land use, transportation and environmental issues that are critical to the sustainability of the region over the long term.

Resources

Staff coordination efforts are being, and will continue to be, conducted with existing resources.

EIP13-GL09-01(B). Consideration of Green Building Incentives for Private Sector Development

Description of Action

"Green building" refers to the design and construction of buildings and associated landscapes to minimize negative impacts of buildings on the environment and building occupants. Nationwide, building operations account for over 70% of electricity demand, over 50% of natural gas demand, and over 30% of total greenhouse gas emissions. The green building concept provides opportunities to reduce these and other impacts. The Metropolitan Washington Council of Governments has adopted a resolution encouraging local jurisdictions in the Washington, D.C. area to incorporate green building design into public sector projects, to support the application of such practices in the private sector, and to provide public education and staff training on green building practices.

Fairfax County has adopted a Sustainable Development Policy for Capital Projects that supports incorporation of green building practices into the county's public facilities projects (see ES09-07(retired)) and has amended the Comprehensive Plan to incorporate support for green building practices into county policy (see GL08-03(retired)). The county has also joined the U.S. Green Building Council and has accepted the U.S. Environmental Protection Agency's (EPA) ENERGY STAR® Challenge, through which the county will promote energy efficiency in buildings (see EIP13-ES09-06(B)). The county has established a policy for shorter site and building plan review processing for those buildings that will be designed to attain certain green building design thresholds. A continuing policy allows solar equipment installation owners to quality for a property tax exemption pursuant to §58.1-3661 of the Code of Virginia; solar permitting fees are waived.

Upon adoption of the Policy Plan amendment supporting green building practices, the Board of Supervisors (BOS) requested that staff continue to evaluate green building incentive options in coordination with the Planning Commission's Environment Committee. Specifically, staff was asked to consider: rebates for water, tap, sewer or other fees; implementation of tax credits for new buildings or retrofitting; expedited processing of development plans; energy efficiency and/or performance bonds or escrows; and the establishment of a "green fund" to collect monetary contributions as part of the development process to support the county's environmental initiatives. Staff was asked to report back to the Board with findings and recommendations by June 2008.

Staff met several times with the Planning Commission's Environment Committee during the first half of 2008 to discuss green building incentive options and considerations. On June 9, 2008, staff presented an overview of such options and considerations to the BOS Environmental Committee and identified as a possible approach the development of enabling legislation to support tax credits for costs of green building practices in combination with establishment of a requirement for contributions to a green fund for development projects that do not pursue a requisite level of green building performance. Because of concerns about the likely failure of legislation proposing authority for a green fund contribution requirement, and because of

concerns regarding the timing of a request for a constitutional amendment that would set the stage for enabling authority for a tax credit (i.e., requesting such authority during a severe recession), these legislative ideas were not pursued by the county. However, legislation was introduced by a State Senator during the 2009 General Assembly session proposing a constitutional amendment that would enable the General Assembly to allow localities to exempt or partially exempt properties from taxation where such properties were "constructed or designed to conserve energy and natural resources in a manner that meets or exceeds performance standards or guidelines established for such purposes." This bill was passed by both the Senate and House of Delegates. For the Constitution to be amended, the proposed amendment must again be passed by the Senate and House of Delegates in identical form after an intervening General Assembly election and must then be supported by a majority of voters in a referendum. The bill was introduced again during the 2010 General Assembly session but was continued to 2011 by a House of Delegates committee; this effectively started the constitutional amendment process over again.

If the aforementioned constitutional amendment is eventually enacted and the General Assembly follows with enabling legislation, the tax incentive idea should be considered further.

It is also noted that the BOS is on record in support of state tax credits for energy efficiency, which could be adopted by the General Assembly without the need for a constitutional amendment (and therefore no second passage or referendum would be needed). The Board sent letters to the Governor's Commission on Climate Change and the Virginia Commission on Energy and Environment encouraging their support in particular of state tax incentives for homeowners who install solar panels.

Environmental Agenda Objectives Supported:

This action would broadly support the Environmental Agenda.

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

DPWES

Status/Plans/Outcomes

Tax incentives could be considered further pending further legislative action.

Resources

Resource implications are dependent on the specific green building incentive concepts that would be considered. If a green building tax incentive is to be considered, there would be impacts to county revenues that would need to be considered in the decision-making process. The consideration of such an incentive cannot occur until further legislative action is taken.

EIP13-GL09-02(C). Review Effectiveness of Agricultural and Forestal District Program in Preserving and Managing Sensitive Lands

Description of Action

Convene a meeting, or series of meetings, among staff from the Department of Planning and Zoning, Urban Forest Management Division, Virginia Department of Forestry, and the Northern Virginia Soil and Water Conservation District to evaluate the effectiveness of the County's Agricultural and Forestal District program in preserving and managing environmentally sensitive lands, preserving and planting trees and ensuring appropriate land stewardship practices.

Environmental Agenda Objectives Supported:

Growth & Land Use 8
Air Quality & Transportation 7
Environmental Stewardship 6

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Fairfax County Tree Action Plan
Agricultural and Forestal District Ordinance

Lead Agency:
DPZ

Status/Plans/Outcomes

The anticipated outcome of this review would be an identification of any changes to the A&F District process that may be appropriate to improve preservation and management efforts, including a consideration of the need for monitoring and enforcement actions relating to land management activities and the identification of whether or not enabling legislation may be needed in this regard.

Upon completion of the staff coordination effort, these ideas could be refined further through coordination with the Agricultural and Forestal District Advisory Committee.

Resources

The interagency coordination efforts would be conducted with existing staff and would be absorbed into existing agency budgets. Resource implications of follow-up actions (e.g., ordinance revisions) would be dependent on the nature and extent of recommendations resulting from the review.

EIP13-GL09-03(C). Strengthened Zoning Case Submission Requirements: Preliminary Utility Plan

Description of Action

Consider strengthening submission requirements for zoning applications to require submission of a preliminary utility plan where utility construction can conceivably result in a clearing of trees.

Environmental Agenda Objectives Supported:

Growth and Land Use 8
Air Quality and Transportation 7

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Fairfax County Tree Action Plan
Tree Conservation Ordinance

Lead Agency:

DPZ

Status/Plans/Outcomes

Construction of utility lines can result in the clearing of trees that had been identified for preservation on development plans associated with zoning applications. By requiring a preliminary utility plan, it is anticipated that tree preservation efforts will improve by allowing for consideration of utility citing needs during the development plan process. It is also anticipated that limits of clearing and grading presented on development plans will more accurately reflect utility needs than is generally the case at this time.

The consideration of the addition of utility plan layout as a zoning submission requirement has been retained on the Priority 2 list in conjunction with the Board's adoption of the 2011 Zoning Ordinance Amendment Work Program. It is anticipated that no action will take place on this item this year and it will remain on the list for future prioritization.

Resources

While existing staff resources would be applied to this effort, these staff resources would be unavailable for other efforts.

EIP13-GL09-04(B).
Tree Preservation and Canopy Replacement During the Development of County Facilities

Note: This action was formerly entitled "*Consideration of No-Net Tree Canopy Loss during the Development of County Facilities"*

Description of Action
Convene a series of meetings attended by representatives of agencies that develop public facilities to develop procedures that can be used to maximize tree conservation and sustain or increase canopy levels during the development of county projects. This action supports a Board directive associated with June, 2007 adoption of the 30-year Tree Canopy Goal (see EIP13-ES09-08(B)). The Board directed staff to investigate the feasibility of this concept and to report back to the Board's Environmental Committee with recommendations.

Environmental Agenda Objectives Supported:

Growth and Land Use 8
Air Quality and Transportation 7

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Fairfax County Tree Action Plan
Fairfax County 30-year Tree Cover Goal
Cool Counties Climate Stabilization Initiative

Lead Agencies:

DPWES, Urban Forest Management Division; Park Authority; DPZ; FCPS; and FMD

Status/Plans/Outcomes
This action relates to a recommendation of the Tree Action Plan. Strategy 5 of Core Recommendation # 5 **(**Improve Water Quality and Stormwater Management through Tree Conservation) recommends that the county commit to maximum, realistic and sustainable tree canopy goals on county-owned property.

In 2010, a workgroup comprised of county agencies involved with the development of county facilities convened to address a December, 2009 Board Matter directing staff to develop procedures that can be used to maximize tree conservation efforts during the development of county projects by completing the following actions:

- Examine issues relating to the preservation of trees during the development of County property.

- Develop a data set of culturally, historically, and ecologically significant trees and native plants.
- Convene a meeting among County agencies that design and develop public facilities.
- Develop procedures addressing tree conservation and ecosystem management.
- Form a work group to address implementation of procedures.
- Identify "roadblocks" that interfere with County projects reaching maximum and sustainable tree preservation and canopy goals.
- Report to the Board of Supervisors' Environmental Committee on activities and actions.

Among other strategies, the workgroup was charged with exploring roadblocks to County projects obtaining maximum levels of tree preservation. After initial discussions on this subject it became clear that workgroup participants held a wide range of perceptions regarding the cause of various impediments to tree preservation. The table below provides examples of perspectives expressed during the discussions:

Current policy does not adequately communicate that tree preservation should be treated as a fundamental design consideration	Current policy language adequately conveys this message, but tree preservation is just one design objective that must be considered
Developing and user agencies do not pursue tree preservation in a proactive and positive manner	Tree Preservation is always a consideration but it must compete with multiple design objectives on a site-by-site basis
Opportunities to preserve specimen, monarch, or ecologically significant trees are often ignored or minimized	The location of high-quality trees often coincides with areas that are optimal for functionality or otherwise needed to address site plan regulations
Lack of awareness about the environmental and social contributions of trees is manifested as a hesitancy to treat tree preservation as a serious concern	Tree preservation may be an important consideration, but it can add time and expense to projects. Current practices are focused on developing facilities in an "on-time and on budget" manner

Although division was encountered regarding the cause of several impediments, the workgroup did find consensus regarding the following processes, practices and policies that have potential to act as impediments to tree preservation:

- Mature trees have extensive root systems. They are easily impacted by construction and/or environmental changes resulting from changes in land use.
- Inventory and mapping of existing vegetation greatly assist preservation efforts but are not always used because of budget constraints.
- Preservation of existing vegetation is not typically a subject that is considered during the initial planning and design stages.

- Tree preservation is often examined during mid and later stages of projects when the site layout and budget have been finalized. This timing limits the success of preservation attempts and can introduce unexpected costs and delays.
- Developing agencies and their contractors may not be cognizant of the services provided by the Urban Forest Management Division (UFMD) or how these can enhance planning, design and construction processes.
- Although improved during recent years, interagency communication/cooperation can still be strained over tree preservation and landscaping issues.
- Current policy regarding the development of county facilities (2232 Process) could be amended to place more emphasis on tree preservation.
- Funding for tree preservation and landscaping is not always projected accurately within CIP budgets; or, unanticipated costs in other areas may divert funding originally intended for these features, especially where these are considered optional.

In March 2011, the following recommendations were presented by staff to the Board's Environmental Committee:

- Develop a vegetation inventory and mapping standard for County projects. Involve UFMD in the review of these data.
- Route all 2232 cases to UFMD for review and comment.
- Include UFMD in the early planning stages to assist with the development of project budgets, site layouts and construction practices.
- Improve the process used to identify potential tree conservation and landscaping costs and embed these costs in Capital Improvement Program budgets.
- Distribute a list of contacts and services offered by UFMD to help ensure that all County staff and contractors are aware that UFMD is available for assistance.
- Develop an outreach program for submitting engineers and in-house project managers to help these groups become more knowledgeable about the County policies and guidelines pertaining to tree conservation.
- Develop a Tree Canopy Loss Mitigation Policy that:
    - Complements the County's 30-year Tree Canopy Goal
    - Provides an opportunity to demonstrate innovative tree conservation practices
    - Acknowledges that it may be necessary to remove tree canopy during the development and expansion of County facilities
    - Acts to replenish tree canopy lost during the development of County facilities through reforestation practices on the same or other County properties
    - Utilizes funds from the County's Tree Preservation and Planting Fund and/or Environmental Improvement Program to finance related reforestation projects
- If the previous practices, programs and policies do not prove effective, then take steps to strengthen Comprehensive Plan Policy language governing the 2232 process in a manner that prioritizes tree preservation during the development of public facilities.

The Board's Environmental Committee endorsed the recommendations. It is anticipated that staff will implement practices and policies associated with these recommendations by the end of CY 2013.

Resources

No additional resources are anticipated in order to consider the policy; however, if adopted, additional landscaping costs and canopy offset funds may need to be facilitated in the budgets for new county facilities.

EIP13-GL09-05(C). Development of a County Green Building Program Through the Establishment of a Green Building Coordinator Position

Description of Action

"Green building" refers to the design and construction of buildings and associated landscapes to minimize negative impacts of buildings on the environment and building occupants. Nationwide, building operations account for over 70% of electricity demand, over 50% of natural gas demand, and over 30% of total greenhouse gas emissions. The green building concept, therefore, provides substantial opportunities to reduce these and other impacts.

The Metropolitan Washington Council of Governments (MWCOG) has adopted a resolution encouraging local jurisdictions in the Washington, D.C. area to:

1) incorporate green building design into public sector projects,
2) support the application of such practices in the private sector, and
3) provide public education and staff training on green building practices.

Fairfax County has adopted a Sustainable Development Policy for Capital Projects that supports incorporation of green building practices into the county's public facilities projects (see ES09-07(retired)) and has amended the Comprehensive Plan to incorporate support for green building practices into county policy (see GL08-03(retired)). The county has also joined the U.S. Green Building Council and has accepted the U.S. Environmental Protection Agency's (EPA) ENERGY STAR® Challenge, through which the county will promote energy efficiency in buildings (see EIP13-ES09-06(B)). Further, the Department of Public Works and Environmental Services, Land Development Services (LDS) has increased its green building design knowledge—The LDS Ombudsman responsible for both religious/community groups and green buildings provides technical expertise to people who inquire about such practices, provides internal training, as limited by other job responsibilities, to plan reviewers and inspectors on green building practices, continues to improve compliance with energy code requirements through training and improved resources, and participates in local, regional and national energy initiatives as time allows. In addition, as noted in EIP 13-GL09-01 (B), the county has established a preferential review timing incentive for green development projects in its site plan and building plan review processes.

The county's Energy Efficiency and Conservation Coordinating Committee plans to use a contractor to apply funds from the Energy Efficiency and Conservation Block Grant Program (American Reinvestment and Recovery Act of 2009) to provide energy efficiency educational and outreach efforts aimed at county homeowners. A request for proposals has been issued for this effort; however, this effort will not be recurring.

The county currently lacks a comprehensive green building program (and staff resources) that can proactively and energetically promote the application of green building practices. In order to build capacity in this area, the establishment of a Green Building Coordinator position is

recommended. This position would support the MWCOG resolution to provide public education and staff training. In addition, this position would oversee the public and private sector green programs that are implemented in various agencies to provide a coordinated effort countywide.

The Green Building Coordinator would not constitute the county's green building program, in that it is anticipated that green building capacity will need to be developed within a number of agencies and that one staff position will prove to be insufficient to meet what is likely to be a high demand for service. Rather, it is expected that the Green Building Coordinator would coordinate efforts among a number of county agencies to build coordinated, cross-agency efforts to enhance green building capacity and to provide an initial point of focus to support implementation of green building practices in the county. It is anticipated that the Green Building Coordinator would:

(1) Proactively promote the incorporation of energy efficiency and other green building practices into home renovation and addition projects and be a highly visible liaison to county residents who may be interested in pursuing green building practices; the Coordinator would not duplicate LDS efforts in assisting homeowners in addressing Code issues associated with green building practices but would provide assistance to homeowners in identifying resources and would more actively promote such efforts beyond the current energy code.
(2) Much in the same manner, serve as a liaison to county businesses and developers who may be interested in incorporating energy efficiency and other green building practices into their operations and/or development projects.
(3) Develop or compile available green building resource guidance for use by interested homeowners and businesses and publicize the availability of this guidance. The Coordinator would not duplicate homeowner education and outreach efforts that are under way but would build upon and continue these efforts; it is noted that these efforts are limited to what will be pursued with funding by one-time Federal grant monies.
(4) Consider the concept of development of a green building fund (to support green building efforts in the county) and develop recommendations as to whether or not such a concept should be pursued.
(5) Serve as the county's representative on the Metropolitan Washington Council of Governments' Intergovernmental Green Building Committee.
(6) Serve on the county's Environmental Coordinating Committee, Energy Efficiency and Conservation Coordinating Committee, EIP Action Group, and core team supporting the county's Cool Counties Climate Stabilization Initiative and the Metropolitan Washington Council of Governments' Global Climate Change efforts.
(7) Coordinate efforts with the Fairfax County Environmental Coordinator and Air Quality Program Manager to ensure seamless government.
(8) Coordinate an interagency green building subcommittee of the Energy Efficiency and Conservation Coordinating Committee that would develop recommendations for strengthening green building efforts in Fairfax County. Staff from the Department of Planning and Zoning, Department of Public Works and Environmental Services (Land Development Services, Capital Facilities, and Stormwater), Fairfax County Park Authority, Fairfax County Public Schools, and Facilities Management Department, as

well as the Fairfax County Environmental Coordinator and other agencies as needed, would serve on this subcommittee. The subcommittee would prepare recommendations for consideration by the Board regarding staffing, resources, and training needed to strengthen public and private sector-related green building efforts in Fairfax County as well as policy, regulatory and legislative considerations.

(9) Report directly to a Deputy County Executive.

(10) Provide staff training as may be determined to be needed through the aforementioned interagency coordination effort.

It should be recognized that the establishment of this position would be an interim step in development of a county green building program and would not constitute the program itself. It is possible that the need for additional staffing and resources would be identified for a more comprehensive county effort.

It should also be recognized that a possible outcome of the interagency coordination effort to be led by this new position could be the establishment of a green building fund, which could, at least in part, defray expenses associated with the establishment of this position.

Environmental Agenda Objectives Supported:

This action would broadly support the Environmental Agenda.

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Stabilization Initiative
Fairfax County Sustainable Development Policy for Capital Projects

Lead Agency:

County Executive's Office

Status/Plans/Outcomes

It is recommended that the Green Building Coordinator position be housed within the county Executive's Office in order to ensure an appropriate level of oversight and authority for interagency coordination. It is also recommended that the position be established at a level no lower than S-31.

Resources

If it is assumed that the position would be budgeted at the mid-point of the pay range for the S-31 pay grade, a salary of $89,492 plus an additional cost for fringe benefits of $25,505 would be needed, for a total first-year cost of $114,997.

EIP13-GL12-01(C). Evaluation of Implications of Plan Amendments

Description of Action

Through this action, there would, upon completion of the current Area Plans Review cycle and Area Plan studies, be an evaluation of the collective implications of all Plan changes that have been made over the past several years.

As noted in EIP13-GL07-03(B), there have been a number of notable Plan amendments adopted in the past several years, and several major land use studies are under way or nearing completion. The Environmental Quality Advisory Council (EQAC) has recommended that the county evaluate the Comprehensive Plan and publish an update to the 1995 "State of the Plan" document, which assessed the implications of Plan changes between 1990 and 1995. In its recommendation, EQAC notes that there have been several substantial planning efforts and external factors that have not been evaluated comprehensively for their countywide implications. Examples cited by EQAC include federal Base Realignment and Closure (BRAC) actions, the forthcoming extension of Metrorail through Tysons Corner and to Dulles Airport, major transportation projects, and major planning studies, including the Tysons Corner Transportation and Urban Design Study and studies for several revitalization areas.

As of the date of preparation of this fact sheet, staff has been involved in several on-going and new projects, including the 2009-2010 South County Area Plans Review, the Reston Corridor Special Study, the Tysons Corner to Dulles Airport Metrorail extension, studies pertaining to the in the Route 28 Transit Station Area, and Jefferson Manor/Huntington Station Area. After these major planning studies are completed, there may be an opportunity to: summarize activities that demonstrate how the county has achieved the goals of the Comprehensive Plan by encouraging transit oriented development and mixed use development in the county's activity centers; review how the county has implemented growth and conservation policies; and consider the cumulative implications of the changes that have been made. This evaluation will also inform recommendations about the process by which Plan amendments are considered, which is being undertaken in 2011-2012.

Environmental Agenda Objectives Supported:

Growth and Land Use 1, 2, 3, 4, 5, and 7
Air Quality

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

DPZ

Status/Plans/Outcomes

Upon completion of the current Area Plans Review (APR) cycle and Area Plan studies, there would be an evaluation of the collective implications of all Plan changes that will have been made over the past several years. This effort could serve to demonstrate the extent to which the county has implemented broad Comprehensive Plan goals relating to growth and conservation and could inform decisions regarding how Plan amendments are considered.

Resources

Planning Division staff is currently evaluating the implications of plan amendments. A report is expected to be drafted by fall 2011.

It is anticipated that the specific scope and process associated with any Plan amendment evaluation effort would be determined through discussions with the Planning Commission and Board of Supervisors; as such, the specific resource needs for this effort have yet to have been determined.

EIP13-AQ07-02(B). Employer Services Program

Description of Action

The Employer Services Program is one component of the regional Transportation Emission Reduction Measures, which were adopted by the Metropolitan-Washington Regional Transportation Planning Board. Fairfax County Employer Outreach Program will receive $196,530 in funds from Virginia Department of Transportation to continue the program. The Employer Services Program provides local outreach and promotion of transportation demand management strategies to employers in Fairfax County. Employer participation is strictly voluntary and direct "sales" contact with employers is conducted by the Employer Services staff.

The program supports commute alternatives, such as public transportation, carpooling, vanpooling, teleworking, flexible work schedules, bicycling, and walking, which are marketed to employers. In addition, subsidies (Transportation Benefits), incentives and the regional Guaranteed Ride Home Program are promoted. Presentations of commute alternatives are done via personal meetings with decision-makers, car/vanpool formation meetings, and/or through on-site transportation fairs. The program also supports the VaMega Projects Outreach programs.

Environmental Agenda Objectives Supported:

Growth and Land Use 7
Air Quality and Transportation 1 and 2

Other Plans or Documents where this action appears or that it supports:

Fairfax County Comprehensive Plan; Transportation Section
Objective 1, Policy a., Policy c., Policy d., Objective 2, Policy i., Policy l, Policy p., Policy q., Policy r., Policy s., Policy t., Policy u., Objective 6, Policy d., Objective 10, Policy a., Policy b.
Washington Region Transportation Improvement Program
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

This program was initiated in 1997 to assist employers within Fairfax County to establish on-site Employee Transportation Projects to reduce single occupancy vehicle (SOV) travel and resultant air pollution. The program is one component of the regional Transportation Emissions Reduction Measures, which were adopted by the Metropolitan-Washington Regional Transportation Planning Board.

Resources

Annual Costs: This program is funded $196,530 from the Virginia Department of Transportation and supported by FCDOT Staff.

EIP13-AQ07-03(B). Ridesources Program

Description of Action

The RIDESOURCES Marketing and Ridesharing Program has received State grant support every year since 1984.

This grant program provides funding to promote the use of HOV lanes and FAIRFAX CONNECTOR express and local bus service; to promote commuter alternatives countywide, including promotion of cooperative events/marketing campaigns with other jurisdictions and the Washington Metropolitan Area Transit Authority (WMATA). In addition, funds are used to: provide technical support to Transportation Management Associations (TMAs); promote specific marketing campaigns in targeted areas; support desktop publishing and production of various marketing materials, such as maps, timetables, brochures, flyers, and posters; support the County's participation in the Metropolitan Washington Council of Governments' COMMUTER CONNECTIONS network; and provide ridematching assistance to commuters Countywide. The RIDESOURCES Program provides free ridematching services to County residents and to employees who work at employment sites within the County.

Environmental Agenda Objectives supported:

Growth and Land Use 7
Air Quality and Transportation 1 and 2

Other Plans or Documents where this action appears or that it supports:

Fairfax County Comprehensive Plan: Transportation Section
Objective 1, Policy c., Objective 2, Policy b., Policy c., Policy d., Policy i., Policy j., Policy k., Policy o., Policy q., Policy t., Policy w., Objective 4, Policy b.
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

The RIDESOURCES Marketing and Ridesharing Program continues to market ridesharing and transit marketing activities. In addition to promotion of specific marketing campaigns the program provides free ridematching services to County residents and to employees who work at employment sites within the County. No additional funding for DOT Staff was requested in the FY 2010 grant application.

Resources

This program is supported with an annual VDRPT grant, which has risen to $560,000 for the last two years, and $140,000 in local matching funds. The grant application for FY10 requested funding to support existing positions of two Transportation Planners III, one Transportation Planner II, one Graphics Artist III, two Administrative Assistants II and one Planning Technician.

EIP13-AQ07-04(B). Transportation Benefits

Description of Action

Transportation Benefits Program is provided as an employee benefit by more than 2500 public and private employers in the Washington, D.C. area, including the federal government. Transportation Benefits Cards are accepted by more than 100 bus, rail, and vanpool commuter services in the region, including Metro, Virginia Railway Express, and local bus systems.

The Transportation Benefits Program works just like many other commonly available fringe benefits such as employer-provided health insurance. Employees are not taxed for the value of the Transportation Benefits they receive, and employers can deduct the cost of providing the program as a business expense. The monthly Transportation Benefits can be any amount the employer chooses to provide, although a maximum of $230 per month is allowable tax-free or pre-tax to employees.

Environmental Agenda Objectives Supported:

Growth and Land Use 7
Air Quality and Transportation 1

Other Plans or Documents where this action appears or that it supports:

Fairfax County Comprehensive Plan; Transportation Section
Objective 1, Policy c., Objective 2, Policy b., Policy i., Policy j., Policy k., Policy q., Policy v., Objective 7, Policy a.
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

This program is available to all County employees, and the pre-tax deduction benefit for the employee is $120 per month. The program is funded from the Department of Transportation Annual Budget.

Resources

Annual Costs: The program is funded by DOT up to $300,000.00 annually. The program is supported by DOT Staff.

EIP13-AQ07-05(B). Residential Traffic Administration Program

Description of Action

The Residential Traffic Administration Program, managed by the Fairfax County Department of Transportation, includes a Traffic Calming component which enhances pedestrian safety and mobility by providing for the installation of physical devices for slowing the speed of traffic in qualifying residential areas. Pedestrian amenities are also enhanced by the Cut-through Restriction, $200 Fine for Speeding Signs, Multi-way Stop Signs, Watch for Children Signs, and Through Truck Restriction components of the Residential Traffic Administration Program.

Environmental Agenda Objectives Supported:

Growth & Land Use 7
Air Quality & Transportation 1

Other Plans or Documents where this action appears or that it supports:

Fairfax County Comprehensive Plan; Transportation Section
Objective 4, Policy c., Policy e., Policy f., Objective 8, Policy g., Objective 9, Policy d.

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

Through FY **2011** the Board of Supervisors has approved:

- 18 traffic residential road calming plans
- **45** projects were initiated for a traffic calming study
- **4** road for $200 Fine for Speeding
- 14 intersections for Multi-way Stop Signs
- **12** Watch for Children sign locations

Resources

Funding needs: **$300,000** per year in State Funding. Fairfax County Department of Transportation staff resources to manage this program are in place. **New state funding is not available at this time.** Update: FY 2011 Carryover funds of $250,000 approved by the BOS.

EIP13-AQ07-07(B). Priority Bus Stop Improvement Program

Description of Action

The Bus Stop Safety and Inventory Study Plan identified 344 priority bus stops that require safety improvements, accessibility improvements, and amenities. The plan includes enhanced ADA accessibility improvements and bus stop amenities including bus stop shelters. Ultimately, improved accessibility and bus stop improvements will increase transit ridership reducing roadway congestion, promote improved economic vitality and improve air quality by reducing the use of single occupancy vehicles. There are 156 improvements in various phases of the program, between land acquisition, design and construction. One-hundred and thirteen improvements have been completed.

Environmental Agenda Objectives Supported:

Air Quality & Transportation 1

Other Plans or Documents where this action appears or that it supports:

Bus Stop Inventory and Safety Study
Fairfax County Comprehensive Plan; Transportation Section
Objectives: 1, 2, 5, 8
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

The initial Bus Stop Safety Study recommended a variety of safety improvements ranging from minor pedestrian improvements to full scale intersection redesign. The estimated cost to make recommended improvements to all stops is $26 million without regard to inflation, right-of-way acquisition, design, or utility impact. Currently, planning for the implementation is underway. The initiative received its first infusion of funds for $2.5 million from the County general fund in Q1 of FY 2007 and a second infusion of $7.75 million dollars in the Fall of 2007 through a bond referendum. The status of the improvements is as follows:

113 Complete
10 Under Construction
19 In Land Acquisition
107 In Design
17 Project Development

Resources

The Priority Bus Stop Improvements has received $2.5 million from the General Fund in FY 2007 funds and $7.75 million from a transportation bond that passed in November 2007. Support of DOT staff is anticipated throughout the program.

EIP13-AQ07-08(B). Richmond Highway Public Transportation Initiative

Description of Action

The Richmond Highway Public Transportation Initiative is primarily a capital improvements program based on the 2001 Route 1 Corridor Bus Study conducted by the Northern Virginia Transportation Commission (NVTC), and an update prepared by Fairfax County. The program is being coordinated with the South County Bus Plan. The project involves establishing several major and minor transit centers; improving bus stops; establishing additional park-and-ride facilities; and significantly improving pedestrian safety and access to the transit facilities. These improvements will help augment the bus service currently operating in the corridor, as well as provide the facilities to establish new routes throughout the corridor and beyond. The Richmond Highway (U.S. Route 1) Corridor is one of the most heavily transit dependent areas of Fairfax County. It is also one of the most congested and economically disadvantaged. Currently, pedestrians and transit passengers have significant difficulty crossing the six through lanes and numerous turn lanes on Richmond Highway. Although there is already a substantial amount of well-used transit service in the corridor, the Route 1 Corridor Bus Study found that this service would be even better utilized, if pedestrian and transit facilities are upgraded. Ultimately, increasing transit ridership will reduce roadway congestion, promote improved economic vitality in the corridor, and improve air quality by reducing the use of single occupancy vehicles. This will be especially important as the County prepares to accommodate the additional jobs which will be added to Ft. Belvoir, based on the BRAC recommendation.

Environmental Agenda Objectives Supported:

Air Quality & Transportation 1, 3

Other Plans or Documents where this action appears or that it supports:

Fairfax County Comprehensive Plan; Transportation Section
Objective 1, Policy a., Policy b., Policy d., Objective 2, Policy b., Policy e., Policy j., Policy k., Policy l., Policy m., Policy n., Policy o., Policy u., Policy u., Policy x., Objective 4, Policy c., Policy e.
Board of Supervisors Four Year Transportation Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

The initial study recommended many capital improvements, ranging from small, such as pedestrian signs and signals, to large projects, such as the transit centers and park-and-ride lots

that were necessary to accomplish the plan's goals. The estimated total project costs for all the capital improvements for the initiative is $55.0 million. With that as a starting point, and so many recommended projects that were identified, the project began as a design/build project, where some of the projects could be implemented immediately, while others required more planning and analysis. The initiative began implementation with its first infusion of funds in the fall of 2002. This was a $2.0 million Federal Highway Administration (FHWA)/Federal Transit Administration (FTA) Congestion Mitigation and Air Quality (CMAQ) grant. These funds were used primarily for pedestrian improvements and bus service enhancements such as bus shelters.

Construction of pedestrian and intersection improvements began in the summer of 2006. The continuous planning, acquisition of funds and implementation of the initiative is done by a team of staff from various county agencies and a private transportation consultant. Phase I of the pedestrian and intersection improvements was completed in October 2007. The implementation of improvements identified in Phase II of the project continued in 2009 with a construction completion estimated date of 2012.

The ultimate goal for Richmond Highway is to have a full priority bus system with supportive roadway and facilities, and at some point in the future, rail in the corridor. This goal will serve to increase transit ridership; improve pedestrian safety; improve effectiveness and efficiency of transit operations; improve air quality; and complement community development and highway initiatives in the corridor.

Resources

The Richmond Highway Public Transportation Initiative is funded by a variety of funding sources. They include, but are not limited to, state funds (such as Virginia Department of Transportation's Revenue Sharing); federal funds (including CMAQ funds, Job Access/Reverse Commute (JARC) funds, FHWA and FTA appropriations); and County Funds (Board of Supervisors' Environmental funding, General Fund support, Commercial and Industrial Property Tax for Transportation, General Obligation Bonds). Since 2002, the project has received over $30 million from a variety of funding sources. There is a continuous effort by the initiative's planning team to seek funding from these and other sources until the entire project is funded.

EIP13-AQ07-09(B). Air Quality Outreach

Description of Action

Develop and distribute air quality outreach materials. Employees and residents need to be provided information to educate them on air quality issues and to provide them with voluntary actions they can take to improve the county's air quality. The county currently does not meet the federal standards for ozone. This important step is needed so residents and employees can make every effort to help the region meet the Clean Air Act National Ambient Air Quality Standards.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 2 and
General Environmental Stewardship (General)

Other Plans or Documents where this action appears or that it supports:

Air Quality Management Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

Office of Public Affairs and Health Department

Status/Plans/Outcomes

The Office of Public Affairs and Health Department partnered with Clean Air Partners again in 2011 to continue a county media sponsorship that was started in 2005. Clean Air Partners, a public-private partnership chartered by the Metropolitan Washington Council of Governments, provides a comprehensive regional media campaign to build awareness of air quality issues and to promote voluntary actions individuals and employers can take to reduce air pollution and to improve health and quality of life in the region. The campaign includes radio and television announcements, brochures, flyers, fact sheets, press releases, Metrorail placards, Metrorail fare card ads and web resources. The Office of Public Affairs and the Health Department have developed additional outreach materials to be used at public gatherings such as the Celebrate Fairfax! Festival and placed in public locations including county buildings, recreation sites and libraries. To ensure a broad audience, articles are distributed through internal County publications and external outreach, including e-mail, Web sites, cable Channel 16 and homeowners associations. In 2011 the available materials were again offered to county school staff where the response continues to be extremely positive, and to the Fairfax County Public Library Summer Reading Program. Staff will continue to research and to develop new outreach materials and methods of distribution to reach as many residents as possible. A county staff member is on Clean Air Partners' Board of Directors and the Education Committee. The air quality education curriculum that was recently developed continues to be presented at additional elementary schools in the county and the region. These materials are now available in a

shortened version, which can be used in childcare programs and summer camps. Staff would like to continue the media sponsorship with Clean Air Partners.

Resources

The cost for FY 2011 actions totaled $25,000, which included $10,000 for the Clean Air Partners media sponsorship and $15,000 for the air quality education and Energy Efficiency sponsored outreach and education. Approved funding for FY 2012 is $25,000: $10,000 for Clean Air Partners; and $15,000 for education and outreach. Funding requested is $25,000 per year and comes from the county's Environmental Fund.

EIP13-AQ07-10(B). Dulles Corridor Metrorail

Description of Action

The Dulles Metrorail Extension – Phase I to Wiehle Avenue is expected to become operational in late 2013. The project is being managed by the Metropolitan Washington Airports Authority (MWAA) as an initial step in the transfer of the operation and maintenance of the Dulles Toll road to MWAA. Phase II is expected to be operational in early 2017. On March 12, 2009 construction of Phase I of the Dulles Corridor Metrorail Expansion began.

Station Access Management Plans for the Wiehle Avenue station and the Reston Parkway Station (a Phase 2 station) have been completed by FCDOT. The study recommends approximately $105 million in access improvements for pedestrians, bicycles, buses and automobiles by 2030. These improvements are necessary to address efficient and effective movement of pedestrians, bicycles, transit buses, and automobiles within the station areas and in the surrounding community. A multi-year capital program is being developed for consideration by the Board of Supervisors.

In June 2009, the MWAA Board authorized the completion of preliminary engineering (PE) for phase II of the project from Wiehle Avenue to Route 772 in Loudoun County. PE work is expected to be completed by late fall 2011, at this time the county will have 90 days to determine whether it wants to participate in Phase II.

In December 2009, the Board of Supervisors approved a petition by landowners to establish Phase II tax district. The district will fund $330 Million of the Fairfax County share of Phase II costs.

Environmental Agenda Objectives Supported:

Growth and Land Use 4, 7
Air Quality and Transportation 1, 3

Other Plans or Documents where this action appears or that it supports:

Board of Supervisors Four-Year Transportation Program
Comprehensive Plan; Transportation Section;
Objective 2, Policy a., Policy b., Policy i., Policy j., Objective 9, Policy b., Objective 10, Policy a., Objective 11, Policy c.
Washington Metropolitan Region Constrained Long-Range Plan (CLRP)
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

- Construction began in March 2009 on Phase I of the Dulles Rail project (Extension to Wiehle Avenue)
- Opening year ridership to Wiehle Avenue in late 2013 is projected at 63,000 daily person trips.

Resources

- Total Capital Cost is $5.3 billion; Phase I cost is $2.64 billion.
- Non-federal funding for Phase I is in place through Dulles Rail Phase I Special Improvement District (Fairfax County), State, and Dulles Toll Road Revenues.
- Cost allocation for Phase I is 34 percent federal; 66 percent State, Dulles Toll Road, and Fairfax County.
- Metropolitan Washington Airports Authority assumed management of the project in the Spring of 2007
- Board of Supervisors approved funding agreement and a cooperative agreement with MWAA in July 2007

EIP13-AQ07-11(B). Fleet User Forums

Description of Action

Maintain active membership and participation in: Virginia Clean Cities; the Electric Vehicle Forum of the Metropolitan Washington Council of Governments; three sector working groups (School Bus, Urban Fleet, and Construction Equipment) of the Mid-Atlantic Diesel Collaborative; AFV work groups of the Technology and Maintenance Council of the American Trucking Associations (TMC). The Light Duty Hybrid Work Truck Action Group of the National Truck Equipment Association (NTEA), in which the county participated since its inception, had served its purpose and was disbanded in favor of creating a wider-based, joint working group with CALSTART. The county provides representation in the new NTEA-CALSTART working group, the E-Truck Task Force (E-TTF), which was formed June 30, 2011.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 6

Other Plans or Documents where this action appears or that it supports:

None

Lead Agency:

Department of Vehicle Services

Status/Plans/Outcomes

Our participation in Virginia Clean Cities has been steadily increasing. Virginia Clean Cities is a member unit of the U.S. Department of Energy's Clean Cities program, The organization primarily maintains a channel of information among Virginia jurisdictions regarding development and use of alternative fuel vehicles and their supporting infrastructures. Through it, we obtain early and authoritative information on industry developments. We also share first-hand experiences among those who have researched and used various alternatives.

The Metropolitan Washington Council of Governments recently established an Electric Vehicle Forum for Metropolitan Washington Local Governments to examine successful local and regional EV readiness strategies and to begin the conversation on a regional level on how to transition to new transportation capabilities. DVS participates in the meetings and communications occurring as the organization takes shape.

US EPA Region 3 sponsors the Mid-Atlantic Diesel Collaborative comprising fleet, supplier, regulatory, and other interested organizations exploring and exchanging means of reducing diesel exhaust emissions. The discussions can lead to implementation of locally successful programs in new areas, to regionally coordinated projects, and to development of candidate projects for grant funding. DVS participates in three of the collaborative's sector working groups.

DVS also has a member on the Technology and Maintenance Council's Hybrid Power Trains Task Force. Another DVS representative served as chair of the National Truck Equipment Association's Light Duty Hybrid Work Truck Action Group, now disbanded, and is a member of a new (June 2011) NTEA-CALSTART working group, the E-Truck Task Force.

As other user organizations become visible, DVS will evaluate the benefits and costs of participation, joining those deemed most valuable as staff resources permit.

This action is established and ongoing, requiring no further funding or developmental work.

Resources

DVS absorbs participation costs with currently authorized staff. No funding requirements are anticipated beyond local meetings, out of area meetings in conjunction with other scheduled events, and other communications. The Electric Vehicle Forum is sponsored by the Metropolitan Washington Council of Governments. Virginia Clean Cities receives some funding from USDOE and from corporate sponsors.

Beginning in FY09, funding constraints have limited the opportunities for travel in general and, in particular, for participation in the TMC and NTEA efforts. The DVS representatives in those bodies identified alternative funding in FY09 and FY10. Alternative funding may not always emerge, and continued budget restrictions jeopardize participation for the next few years. Travel costs are approximately $1,500 for each trip for a total of $3,000 per year.

EIP13-AQ07-14(B). Participation on the Metropolitan Washington Air Quality Committee (MWAQC)

Description of Action

The Metropolitan Washington Air Quality Committee (MWAQC) is a regional planning group created to conduct interstate air quality attainment and maintenance planning for the Metropolitan Washington region. The authority of MWAQC is derived from the certifications made by the Governors of Virginia, Maryland and the Mayor of the District of Columbia. Fairfax County currently has three Board members serving on the committee: Chairman Sharon Bulova, and Supervisors John Cook, and Linda Smyth.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 1, 2, and 4

Other Plans or Documents where this action appears or that it supports:

Air Quality Management Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

Board of Supervisors

Status/Plans/Outcomes

Three members of the Fairfax County Board of Supervisors continue to participate on this committee to conduct regional air quality planning toward meeting the requirements of the Clean Air Act. Other county staff members attend these meetings, including an Environmental Health Program Manager and DOT staff. County staff members also participate in and contribute to MWAQC's various subcommittees and work groups, such as the Technical Advisory Committee.

Resources

None

EIP13-AQ07-15(B). Evaluation and Purchase of Hybrid Drive and Electric Drive Vehicles

Description of Action

As vehicles retire from the county and FCPS fleets, replace them with production hybrid drive, plug-in hybrid drive, or pure electric drive vehicles when the mission and budget permit. Evaluate and contribute to the advancement of electric vehicles and of plug-in and other types of hybrids as appropriate to county vehicle functions.

Environmental Agenda Objectives Supported:

Air Quality and Transportation (General)
Environmental Stewardship (General)

Other Plans or Documents where this action appears or that it supports:

Air Quality Management Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Vehicle Services

Status/Plans/Outcomes

Hybrid drive trains are expected to reduce all regulated emissions and CO_2 significantly due to higher fuel efficiency leading to lower fuel consumption. Plug-in hybrids and electric vehicles enhance that advantage by shifting all or part of the fuel requirement to the electrical grid, which is generally cleaner and more easily regulated than millions of individual tailpipes. As electrical power generation becomes cleaner, the vehicles using the grid power contribute less to harmful emissions.

As DVS and user agencies plan vehicle replacements, they consider commercially available hybrid drive vehicles where practical. The fleet now boasts 52 Toyota Priuses (including one Prius converted to a plug-in hybrid), 55 Ford Escape Hybrids, 13 Ford Fusion Hybrids, five Chevy Volts, one plug-in hybrid electric school bus, one hydraulic hybrid regenerative braking refuse collection truck, and one Freightliner M2-106 dry cargo van.

The county operates a plug-in hybrid electric vehicle (PHEV), a modified Toyota Prius, which carries an additional, larger battery pack that is recharged from grid power. During the first approximately 30 miles of operation, the electrical power the car uses comes from the grid instead of from the engine-driven motor-generator. When the additional battery is depleted, the vehicle automatically reverts to its normal hybrid mode to continue operation until the vehicle can be plugged in again. Fuel economy is improved as part of the fuel requirement is shifted to

the electrical grid, where energy cost is equivalent to about 75 cents per gallon of gas. Five Chevy Volts recently joined the fleet. These vehicles also carry large battery packs that are recharged from the grid and are depleted during the first part of the trip. The Volt is configured such that it uses only electric energy (no gas engine power) during charge depleting operation.

Early in 2010 DVS placed a medium duty, dry cargo van in service with the Department of Purchasing and Supply Management, incorporating a hybrid-electric drive system. At the same time an otherwise identical, conventional diesel truck went into service for the same mission. The similar employment of these two trucks affords opportunity for side-by-side comparison of performance and cost effectiveness. The hybrid has been returning a 20 percent improvement in fuel economy compared to the conventional truck.

The county and FCPS jointly are a member of the Evaluation Committee (formerly the Buyers' Consortium) of the Hybrid Electric School Bus Project, which is coordinated by Advanced Energy, a state-chartered non-profit in North Carolina. Members contributed to development of a specification and evaluation of bids to supply up to 20 PHEV buses for member jurisdictions around the country beginning in 2006. Grant funding in 2009 enabled the purchase of a Phase-1 plug-in hybrid school bus, which went into service in March 2011.

Also funded in the 2009 Energy Efficiency and Conservation Block Grant was the incremental cost of a refuse collection truck with a hybrid-hydraulic regenerative braking system. This hybrid drive system accumulates hydraulic pressure in a cylinder by capturing energy normally lost in braking and uses it to get the truck moving again from a stop. This strategy displaces fuel the diesel engine would have used in one of the diesel's least fuel efficient operating regimes. The truck went into service near the end of 2010.

DVS continues to seek grant funding for further exploration of hybrid and electric drive vehicles. As other prototype or early production vehicles become available, DVS will consider whether to conduct demonstrations with those vehicles.

Resources

Through FY 2007, the county was able to fund the incremental cost of fleet hybrid drive vehicles through the Vehicle Replacement Fund. Budgets in FY 2008 and subsequent have severely limited our ability to meet the incremental capital cost of production hybrid vehicles. The Ford Escape Hybrid is the only such vehicle on state contract. Its incremental cost is now $11,000. Ford Fusion Hybrids carry a similar cost increment. Incremental cost of the plug-in Hybrid-Electric School Bus is $103,000 and of the hydraulic regenerative braking refuse truck is $35,000. The Chevy Volt carries a cost increment of $24,000 over a comparable conventional drive sedan. Energy Efficiency and Conservation Block Grant funding covered increments for the first school bus, the first refuse collection truck, the first five Volts, and ten Fusion Hybrids.

EIP13-AQ07-16(B). Support for Reductions in Ozone Transport

Description of Action

Communicate by letters, testimony, and other available means with the Governor, congressional delegation and state and federal regulatory agencies to advocate actions to reduce transport of ozone precursors and other pollution from upwind regions along the east coast and the Ohio River valley.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 4

Other Plans or Documents where this action appears or that it supports:

None

Lead Agency:

Board of Supervisors
Office of the County Executive – Environmental Coordinator
Health Department

Status/Plans/Outcomes

Ozone transport is both a local and regional issue and it is being handled through actions by the Board of Supervisors and the Metropolitan Washington Air Quality Committee through letters and other means of communication.

Resources

Continuing efforts require allocation of available staff time. No new resource requirements are anticipated.

EIP13-AQ07-18(B). Four Year Transportation Plan

Description of Action

On October 15, 2007, the Board of Supervisors approved their Second Four-Year Transportation Plan (FY08-FY11). Supported by the $110 million Transportation Bond approved by voters in November 2007, the Second Four-Year Plan is multi-modal and includes projects for major roadways, pedestrian and spot improvements, and transit. The Plan also includes innovative project design and delivery and programs designed to serve special populations. In addition to the 2007 Transportation Bond Projects, the Second Four-Year Plan also includes a number of projects funded through partnerships with State, Federal, and Regional agencies. The Second Four-Year Transportation Plan is designed to enhance mobility, promote safety, and create choices for the commuting public. The Plan seeks to follow an ambitious schedule to implement these projects and programs within a four-year timeframe.

Environmental Agenda Objectives Supported:

Air Quality & Transportation 1

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

FCDOT provides the Board of Supervisors with a Four-Year Transportation Plan status report on a quarterly basis. Over sixty projects have been completed, including the Burke Centre VRE Parking Garage and the West Ox Bus Operations Center.

Resources

Funding for the capital program is a combination of $32 million in Federal Regional Surface Transportation Program (RSTP) and Congestion Mitigation and Air Quality (CMAQ) funds anticipated to be received by the County as well as $55 million in County General Obligation (G.O.) bonds approved by the voters in November 2004 and $110 million in G.O. bonds approved in November 2007. The total funding is $194 million.

EIP13-AQ07-20(B). Fairfax County Transit Program

Description of Action

Fairfax County's transit system, as part of a multi-modal transportation system, is provided by the Fairfax Connector bus service, Metrobus, Metrorail, MetroAccess, CUE Bus, and Virginia Railway Express (VRE). The Fairfax Connector bus service operates 68 routes, providing service to the County's six Metrorail stations. Metrobus has 87 bus routes in the County providing express bus service along Richmond Highway corridor, regional service and service to six Metrorail stations. The County also subsidizes heavy rail service by Metrorail and commuter rail services operated by VRE. In addition, the county's FY 2007 bond sale provides for expansion of park-and-ride lots, implementation of two transit centers and bus stop and pedestrian improvements at various locations throughout the County to support the various transit carriers.

Environmental Agenda Objectives Supported:

Growth and Land Use 1, 3 and 7
Air Quality and Transportation 1

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

Fairfax County's transit system, as part of a multi-modal transportation system, continues to enhance customer service through implementation of new technologies, customer care initiatives and implementation of bus service such as "Richmond Highway Express" (REX). As part of the County's multi-modal transportation program strong support continues for Metro and VRE service. Funding has been identified for purchase of new trains and rehabilitation of existing train cars allowing for expansion to eight car Metrorail trains under the Metro Matters Funding Agreement approved by the Board in November 2004. Financial support for VRE has contributed toward the purchase of new bi-level passenger cars and purchase of new locomotives. The County subsidizes CUE bus service within Fairfax County for bus service to the Vienna/Fairfax GMU Metro Station. Ridership on all transit systems serving Fairfax County has remained essentially steady with Fairfax Connector FY 09 continued ridership projected to be 10 million, Metrobus ridership at 9.4 million, Metrorail boardings in Fairfax County projected to be 29.4 million and VRE boardings to be 833,000. Budget constraints in FY 10 have eliminated free transit rides on Code Orange and Code Red air quality action days in the entire region.

Resources

Fairfax County supports our multi-modal transit system with annual general fund and general obligation bond support of $74 million for Fairfax Connector, $98.3 million for Metrobus, Metrorail and Metro Access service, and $5.0 million for VRE commuter rail service.

EIP13-AQ07-22(C). Fuel Economy and Emissions Standards

Description of Action

Develop a formal federal advocacy strategy within the context of the Metropolitan Washington Air Quality Committee (MWAQC) collaborative process to increase fuel economy and emission standards for cars and light trucks. More stringent standards would reduce emissions of ozone precursors. Build upon previous county correspondence with the Virginia congressional delegation.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 5

Other Plans or Documents where this action appears or that it supports:

Cool Counties Climate Stabilization Initiative

Lead Agency:

Office of the County Executive – Environmental Coordinator

Status/Plans/Outcomes

Draft an advocacy plan for the County's MWAQC representatives to propose to the Committee. The intent would be to enact progressively stricter standards for fuel economy and emissions as a means of mitigating the production of ozone precursors. MWAQC might correspond with Congress to revise existing laws and with the Environmental Protection Agency and Department of Energy to initiate or accelerate rulemakings under current laws to advance this objective. MWAQC could also invite speakers and conduct workshops to facilitate and encourage coordinated efforts by members to communicate on their own authorities a unified message to Congress and the federal agencies.

Resources

Continuing efforts will require allocation of current staff time. No new resources are required.

EIP13-AQ07-23(B). Periodic Assessment of Alternative Fuel Vehicle Technology

Description of Action

DVS conducts a literature review and consultation with industry and government sources and fleet users to evaluate the advisability of incorporating developing alternatives to petroleum fuels in the county fleet. The objective is to identify ways to reduce the regulated and greenhouse gas emissions and the dependence on non-renewable resources of current vehicle and equipment systems. This evaluation will occur from time to time until an avenue away from petroleum fuels becomes clear.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 6
Environmental Stewardship (General)

Other Plans or Documents where this action appears or that it supports:

Air Quality Management Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Vehicle Services

Status/Plans/Outcomes

The first formal assessment was completed in September 2006. DVS will update assessments periodically until one or more effective and economically sound concepts emerge. At that point, DVS would recommend redirecting efforts to implementing use of that alternative. As alternative fuels and the vehicles that use them continue development, we expect to identify one or more fuels that could displace some, and possibly eventually all, of our petroleum fuel usage. We would recommend paying some premium if necessary over the cost of current vehicles and fuels in order to achieve reductions in emissions of regulated pollutants and greenhouse gases and to reduce oil dependence. The course or courses we recommend would also demonstrate a viable strategy for other public and private sector fleets.

Resources

DVS will absorb the cost of periodic assessments with currently authorized staffing. Resources required for implementation of a future plan could be substantial, but will be unknown until the plan begins to take shape. No funding sources are yet identified. Competitive federal grants are often available for demonstration projects. Pursuit of grant funding would likely be

part of the implementation effort once a concept is adopted. Significant levels of county funding over many years will also almost certainly be required.

EIP13-AQ08-01(A). Regional Urban Forestry SIP Working Group

Description of Action

This action is complete. The Regional Urban Forestry SIP Working Group successfully prepared a voluntary tree conservation measure (entitled "Urban Heat Island Mitigation/Tree Planting/Canopy Conservation and Management) in the Washington, D.C. ozone mitigation SIP.

This working group, organized by the Washington Metropolitan Council of Governments, comprised state and local urban forestry officials from Virginia, Maryland and the District of Columbia. It was tasked by the Metropolitan Washington Air Quality Committee to identify specific urban forestry practices in the various jurisdictions that could be bundled and included as one or more credited measures in future Metropolitan Washington Air Quality Plans.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 7
Environmental Stewardship (General)

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Tree Action Plan
Fairfax County 30-year Tree Canopy Goal
Plan to Improve Air Quality in the Metropolitan Washington, DC-MD-VA Region: State Implementation Plan (SIP) for 8-Hour Ozone Standard, May 23, 2007, published by Metropolitan Washington Council of Governments
Cool Counties Climate Stabilization Initiative

Lead Agency:

DPWES, Urban Forest Management Division (UFMD)

Status/Plans/Outcomes

In late 2005, the United States Environmental Protection Agency approved tree-related measures such as tree planting and tree preservation programs as "promising and emerging" voluntary measures that can receive limited offset credits (up to 6% of total) in ozone mitigation programs. The Urban Forestry SIP Working Group identified urban forestry-related ordinances, policies, practices, programs, and community efforts throughout the region that could be combined into a credited voluntary measure for future air quality plans. The Urban Forestry SIP Working Group was among the first in the nation to define an urban forestry SIP measure.

In May 2007, MWAQC approved its regional SIP (as a prerequisite for state air agencies to submit the plan to the U.S. Environmental Protection Agency for approval). The MWAQC approved 2007 SIP includes a voluntary tree conservation measure that contains tree preservation and planting practices from several jurisdictions including Fairfax County (entitled "Urban Heat Island Mitigation/Tree Planting/Canopy Conservation and Management" – see page 6-93 of the May 23, 2007 MWAQC Ozone SIP document).

Update:

Working from the current adopted 2007 DC Metro Region Air Quality SIP voluntary Urban Heat Island Mitigation/Tree Planting/Canopy Management measure, a Regional Task Work (RTW) Group is being formed to complete the required Regional Canopy Management Plan and its attendant elements for input into the next ozone mitigation SIP. In collaboration with local governments and other appropriate stakeholders the RTW will examine the feasibility of increasing regional canopy levels by at least 5% over a twenty to thirty year period (2015-35) through various practices that influence tree conservation, tree planting, and land development processes. If canopy expansion is found feasible, the RTW will develop a plan and implementation strategy to enhance tree conservation and planting and to encourage jurisdictional actions by the fall of 2012. Working with partner forestry agencies and regional air quality planners the RTW will also recommend the resources needed from state, federal, and local sources to provide SIP reporting mechanisms, along with the strategies needed to engage public and private landowners and other stakeholders for 2015 and beyond. Updates on the RTW progress will be provided in the 2014 EIP.

Resources

None, action is completed.

EIP13-AQ08-04(B). Fire Equipment Diesel Exhaust Retrofit

Description of Action

Retrofit all eligible fire equipment in the county fleet with diesel oxidation catalysts or other emissions reducing technology. Eligibility criteria include age and projected use.

Environmental Agenda Objectives Supported:

Air Quality and Transportation (General)

Other Plans or Documents where this action appears or that it supports:

None

Lead Agency:

Department of Vehicle Services

Status/Plans/Outcomes

School buses and class 8 heavy trucks were completed in previous years. This project is a continuation of the Diesel Retrofit Program to retrofit all diesel vehicles in the county fleet. No sufficiently viable and cost effective technologies are available for this project. It is on hold until a more satisfactory avenue emerges.

Resources

Preliminary estimate of cost is $300,000, but actual cost will depend on what technologies become available. Funding for this project was allocated in earlier years but has been forfeited to other urgent fiscal needs since no viable course is presently open to complete it. We have been successful in the first two phases in getting state and federal grant money to cover part of the cost. Grants for this type of project are usually competitive, so while we will pursue further financial assistance, none can be guaranteed.

EIP13-AQ08-05(B). Tree Planting at Governmental Building and Parking Facilities

Description of Action

This project places shade trees at governmental buildings and parking areas along with educational signs to demonstrate how shade from tree canopy can be used to reduce energy usage to improve air quality in both publicly and privately owned settings. Shade trees can:

- Reduce levels of volatile organic compounds (VOCs) associated with the evaporation of unspent fuels from parked vehicles
- Reduce air temperatures in urbanized environments associated with the formation of ambient ozone
- Reduce the need for and expense of maintenance practices that produce VOCs and other air and water pollutants from the operation of grounds maintenance equipment and the use of fertilizers, pesticides and herbicides.
- Reduce air pollution levels through the ability of tree canopy to absorb significant levels of ozone and other pollutants.
- Reduce the energy needed to cool buildings
- Improve aesthetics.
- Sequester relatively large amounts of carbon.

This action implements an energy conservation practice recommended by the Natural Landscape Committee (NLC). It also supports the 30-year Tree Canopy Goal adopted by the Board in June 2007 and recommendations of the Tree Action Plan.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 7
Water Quality (General)
Parks Trails and Open Space (General)
Environmental Stewardship 6

Other Plans or Documents where this action appears or that it supports:

Tree Action Plan
Fairfax County 30-year Tree Canopy Goal
Benefits and Application of Natural Landscaping and Five-Year Implementation Plan
Plan to Improve Air Quality in the Metropolitan Washington, DC-MD-VA Region: State Implementation Plan (SIP) for 8-Hour Ozone Standard, May 23, 2007, published by Metropolitan Washington Council of Governments
Cool Counties Climate Stabilization Initiative

Lead Agency:

DPWES – Urban Forest Management

Status/Plans/Outcomes

The strategic placement of shade trees adjacent to one and two story buildings will conserve energy used to cool those buildings and will lower the cost of utility bills. Well-placed deciduous trees on the western and southwestern sides of buildings provide shade from summer sun and can lower cooling costs by 10 to 50 percent. In addition to energy cost savings, the reduction of energy used to cool the building directly translates to less carbon dioxide produced during the generation of electrical power. Shade in parking areas reduces evaporation of fuel from the parked vehicles. UFMD identified planting opportunities at certain buildings and parking areas in county facilities, schools and parks. In FY 2008, the Urban Forest Management Division used $170,000 from *FY2007 Carryover* to plant 377 shade trees at governmental facilities to demonstrate to the public how trees can be used as an air quality improvement and energy conservation practice. The program included measures to protect plantings from herbivory. UFMD also installed 20 associated educational signs in these locations. This action supports efforts of the Natural Landscaping Committee (NLC) and is identified as part of the tree conservation measure in the 2007 DC/MD/VA Metropolitan Area Air Quality Plan. As of spring 2009, 384 trees have been planted on Fairfax County Government property toward this goal.

Resources

Funded for FY 2008 at $170,000 through the *FY 2007 Carryover*.

Funding request for FY 2013: $220,000 to plant approximately 500 more shade trees and 20 more educational signs on County property in support of air quality objectives in the 2007 SIP, conservation recommendations of the NLC, and the 30-year Tree Canopy Goal. This action is intended to be on-going for about 25 years.

EIP13-AQ08-06(B). Telework Initiatives

Description of Action

The Board of Supervisors and the County Executive continue to champion this effort. The goal is to continue to increase the number of Fairfax County government employees who telework with a focus on Continuity of Operations.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 2

Other Plans or Documents where this action appears or that it supports:

Air Quality Management Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

Office of the County Executive

Status/Plans/Outcomes

The Fairfax County Board of Supervisors and the County Executive have supported telework as a work option for the county workforce since 1996 and endorsed the Metropolitan Washington Council of Governments (MWCOG) goal of 20% of the eligible area workforce teleworking by 2005. In October 2001, the county launched the Telework Expansion Project to increase county government employee participation to reach a goal of 1,000 teleworkers by the end of 2005. Fairfax County government reached its goal in January 2006. The Telework Expansion Project continues, and today almost every county department has teleworkers. The number of teleworkers rose from 138 in December 2001 to 1,275 at the end of 2007, when we considered the original EIP action completed. The number has continued to rise to 1,426 as of June 2010. The goal is to continue to increase the number of staff teleworking with a focus on Continuity of Operations.

Resources

Funds for the Telework Expansion Project are contained in the departmental budgets of the Department of Information Technology (software licenses and loaner PCs); the Department of Human Resources (printing costs of training materials/Telework sign-up forms); and the Department of Transportation (Employer Services materials).

EIP13-AQ09-01(B). Transportation Funding Bill

Description of Action

Within the next twenty five years the Washington metropolitan area is expected to attract highly educated professionals as the area absorbs 641,400 new jobs and 918,500 new residents with over 50 percent of those expected to relocate in Northern Virginia. State legislation passed in the 2007 session (House Bill 3202) authorized issuance of bonds for statewide transportation purposes and provided specific regional authorities and localities, including Fairfax County, to impose fees and taxes to be used for transportation improvements. However, the regional authority provisions were struck down by the Virginia Supreme Court, eliminating the regional funding. Additionally, state legislation passed in 2011 (SB 1446/HB 2527) provides approximately $3 billion in additional statewide transportation funds over the three years by accelerating the bonds authorized by HB 3202 and authorizing Virginia's use of Federal GARVEE bonds. The Commonwealth Transportation Board will decide what projects are funded through SB 1446/ HB 2527. These funding mechanisms will fund increased road and transit capacity and better connections between activity centers, use of technology for more efficient system operations, maintenance of the existing system for maximum performance. These funds provide a limited multi-modal solution to meet Fairfax County's most pressing transportation needs. However, this increase in funding does not replace the need for significant regional and state investment in transportation through long-term, dedicated, sustainable, new multimodal revenues.

Environmental Agenda Objectives supported:

Air Quality and Transportation (General)

Other Plans or Documents where this action appears or that it supports:

Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

Fairfax County is implementing local transportation improvements with annual revenue authorized under HB3202 from increased commercial and industrial real estate taxes. The General Assembly has not restored regional transportation funding for Northern Virginia. Efforts to restore this funding will continue during the 2012 Virginia General Assembly session.

Resources

Nine Northern Virginia cities and counties have the authority to raise commercial real estate taxes and a local vehicle registration fee, as well as establish impact fees on new developments.

Fairfax County has implemented a commercial real estate tax rate of $0.11/$100 valuation. This tax has raised an additional $50 million per year for transportation during the past several years. However, the Northern Virginia regional funding package was intended to use $300 million annually. These funds have not been restored. Additionally, Northern Virginia is expected to receive about 20 percent of the funding included in the new transportation plan, resulting in approximately $600 million over the next three years.

EIP13-AQ09-02(B). Comprehensive Bicycle Initiative

Description of Action

In 2006, the Fairfax County Board of Supervisors approved the Comprehensive Bicycle Infrastructure Program, a program that encompasses a variety of initiatives directed at making Fairfax County "bicycle friendly and safe." Emissions reductions are achieved by increased bicycle trips and miles displacing motorized trips and miles.

Program Highlights include:

- Created and printed the Fairfax County Bicycle Route Map**.** The first version of the map was issued on May 18, 2008 in conjunction with "Bike to Work Day". The second version was printed (41,500 copies) and released in December 2008. An electronic version has been made available on the FCDOT Bike webpage.

- As of October 2007, all Fairfax Connector buses were equipped with bicycle racks. Each bus is equipped with a front mounted rack capable of carrying two bicycles.

- Fairfax County installed bicycle lockers at both Herndon-Monroe and Reston East park and ride lots. The rental program was launched on January 1, 2007. The County currently has plans to expand its locker rental program with approximately 50 new lockers coming on line by the end of 2010.

- As part of the On-Road Bike Lane Initiative, FCDOT teamed up with the Virginia Department of Transportation's Traffic Engineering and Maintenance staffs to create over ten miles of new on-road bike lanes and wide shoulders.

- Staff is completing work on the development of bicycle parking standards, guidelines, and specifications. This document will provide guidance to both the development community as well as governmental agencies responsible for the design, installation and maintenance of bicycle racks and bicycle parking facilities. It will also define parking ratios based on land uses.

- Staff provides bicycle parking technical support assisting schools, shopping centers, and commercial property owners on proper installation/location of bicycle racks.

- 150 new bicycle racks are being installed at locations countywide including County parks, the Town of Vienna and Town of Herndon.

- Staff continues to participate in safety, education and outreach events. FCDOT has received two grants from the Virginia Department of Health for the purchase and distribution of free bicycle helmets to income eligible children. Approximately 200 bicycle helmets have been distributed to date.

- As part of the capital projects program, design and construction continues on numerous projects to improve bicycling and walking and enhancing non-motorized connectivity. Two examples include Wolftrap Road Bridge; a new connection between Tysons Corner, Town of Vienna, W & O D Trail, and Joyce Kilmer Middle School, and the Pohick Stream Valley Trail, a 1.5 mile paved trail providing a non-motorized connection between the Burke VRE Park & Ride lot and Burke Village. Future phases will extend this connection eastward to the Rolling Road VRE Station.

- FCDOT was awarded a transportation enhancement grant for FY2010 to create and print a bicycle map that outlines approximately 15 miles of bike routes highlighting historic and civil war sites in the western portion of Fairfax County.

- Other efforts include; enhancing bicycle connectivity between GMU and Vienna Metro via the City of Fairfax, Metrorail Station bicycle access improvements, and installation of bicycle wayfinding signage countywide.

Environmental Agenda Objectives Supported:

Air Quality and Transportation (General)

Other Plans or Documents where this action appears or that it supports:

Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

The intent of the program is to increase the modal-split of trips by bike, thereby reducing motorized trips and miles traveled and their related emissions and fuel consumption. The program focuses on measures to make bicycling a commuter choice by: increasing the number of on-road bike lane miles; providing bicycle lockers at park and ride lots; equipping Fairfax Connector buses with bicycle racks; and connecting activity centers and transit facilities with a continuous network of bicycle routes.

Resources

The bicycle program utilizes funding from federal, state and local resources. The program has so far received a total of $1,281,000 including an allocation of $1 million from commercial and industrial real estate taxes over a four-year period (FY 2009 – FY 2012). The Bicycle Route Map initiative has received funding from the General Fund and proffers. CMAQ funding has been used to initiate the on-road bike lane program and to purchase and install bicycle racks and lockers. There is no funding for the bicycle program FY 2011.

EIP13-AQ10-01(B). Columbia Pike Rail Initiative

Description of Action

The Columbia Pike Transit Alternatives Analysis (Pike Transit Initiative) was conducted by WMATA and its engineering consultants with the cooperation of Arlington and Fairfax Counties from spring 2004 to spring 2006. WMATA undertook the Pike Transit Initiative to consider the development of an advanced transit system connecting the Pentagon/Pentagon City/Crystal City area with Bailey's Crossroads. In May 2006, the Fairfax County Board of Supervisors endorsed the "Modified Streetcar Alternative" recommended in the Columbia Pike Transit Alternatives Analysis as the preferred transit alternative for the Columbia Pike corridor. The endorsement allowed the project to advance to the next phase of project development in which the project team developed a financial strategy. The Board of Supervisors has approved project agreements with WMATA and Arlington County for planning and environmental work.

The Columbia Pike Streetcar is expected to have a total daily ridership of 20,670.

Environmental Agenda Objectives supported:

Growth and Land Use 1, 3 and 7
Air Quality and Transportation 1

Other Plans or Documents where this action appears or that it supports:

Board of Supervisors Four-Year Transportation Plan
Comprehensive Plan
Cool Counties Climate Stabilization Declaration

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

- The Board of Supervisors has approved project agreements with WMATA and Arlington County for planning and environmental work.
- The project team has been working on redevelopment of the financial strategy since the state Supreme Court decision regarding NVTA authority to generate revenues.

Resources

Funding for this project is anticipated from federal earmarks and from local and state transportation fund fees and taxes, including $18 million approved so far from the Commercial and Industrial Real Estate Tax revenue. Fairfax County's estimated, anticipated commitment is approximately 12 to 20 percent of the total capital and operating expenses. The total capital costs for the entire project including systems, facilities, and vehicle procurement but not including

right-of-way or parking structures are projected to be $160 million. The annual operations and maintenance costs based on assumed operating plans and fleet sizes are estimated to be $5 million.

EIP13-AQ10-02(B). Reduce Fuel Consumption in Heavy Duty Vehicles

Description of Action

This initiative explores a series of measures that could reduce fuel consumption in normal operations of heavy duty vehicles in the county fleet. Most and probably all of these measures would return a modest reduction individually, but the cumulative effect could be significant. Areas holding out some promise are in idle reduction, reduced rolling and aerodynamic resistance, and transmission shift schedules.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 4 and General

Other Plans or Documents where this action appears or that it supports:

Air Quality Management Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Vehicle Services

Status/Plans/Outcomes

- The movement of solid waste transfer tractors over the same route day after day could present opportunity to optimize the transmission shift schedule by tailoring it to the route profile. DVS supplied route profile data to Allison (manufacturer of the tractor transmissions). Allison programmed an optimized shift schedule into new vehicles delivered to us in 2009. DVS will compare fuel consumption to the existing fleet to determine whether to reprogram those transmissions.
- Examination of mission segments high in idle time may point to methods to reduce unproductive engine operating time. DVS downloaded engine data on solid waste transfer tractors and found they were experiencing substantial idling time. Consultation with Solid Waste indicated much of that time might be eliminated with proper cab climate control. In 2009 DVS installed battery-operated heating and air conditioning units in six trucks as a pilot demonstration. DVS will compare idling time and fuel consumption with other, similar trucks to determine whether further retrofits are warranted.
- Hydraulic and electric launch assist systems are appearing on the market that could reduce fuel consumption in repetitive stop-and-go operations like trash pickup. In 2009 the U.S. Department of Energy (DOE) allocated funding to the county under the Energy Efficiency and Conservation Block Grant Program. The incremental cost of a hybrid hydraulic regenerative braking refuse collection truck was among the projects the county chose to fund. The vehicle

went into service in December 2010. (Please see EIP12-AQ07-15(B), "Evaluation and Purchase of Hybrid Drive Vehicles.")

- Single-wide tires in place of dual mounts have been shown to reduce rolling resistance and therefore fuel consumption in some applications. Landfill operations present challenges to the wide-based tire concept. County specifications have been modified, however, to require low rolling resistance radial dual tires when available.
- Certain fairings added to trailers have been shown to reduce air resistance and therefore fuel consumption in some applications. They have not been adopted in our most populous trailer application, however, because current aerodynamic skirts and fairings are designed for highway use and present ground clearance issues for the Solid Waste fleet, which must also move in landfills in addition to their predominant highway operations.
- Aerodynamic design packages for Solid Waste tractors now available have been evaluated for potential overhead and ground clearance issues. Six tractors have been ordered in 2011 with full aerodynamic fairings.
- A relatively new transmission technology, the automated manual transmission, became available for Solid Waste transfer tractor applications in 2011 and was merged into the specification that year, enabling pairing with a smaller displacement engine in the six tractors ordered that year. Fuel economy data will be monitored to evaluate the effectiveness of this approach.

Resources

Exploration of possible measures involves staff time of currently assigned members of DVS. The cost of implementing promising technologies or procedures would be one of the criteria in selecting the ones to be incorporated in the fleet. The programming of the 2009 transfer tractor transmissions incurred no additional cost, since we arranged for it in conjunction with the purchase of the trucks. The battery a/c retrofit demonstration ($27,520.44) was funded from the *FY 2003 Carryover* funding set aside for diesel emissions reduction projects. The costs for additional actions are unknown and would depend on what measures are chosen.

EIP13-AQ10-03(C). Purchase of Wind Power

Description of Action

The Board of Supervisors first approved the purchase of 5 percent of the county's electricity needs from the Mountaineer Wind Farm in West Virginia in April 2005. The county followed the original two-year contract with a three-year contract starting on April 1, 2007 and ending on March 31, 2010 for wind power generated at the Locust Ridge Wind Farm in Schuylkill County, PA. The second contract provided a progressive rise in wind energy usage, reaching 10 percent in the third year. This action projects continued purchase of wind power at the 10 percent level for an additional three years.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 4 and General

Other Plans or Documents where this action appears or that it supports:

Air Quality Management Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Cable and Consumer Services

Status/Plans/Outcomes

Staff worked with the Virginia Energy Purchasing Governmental Association (VEPGA) to change the by-laws to allow this purchase. It was the first wind energy initiative in Virginia. The second contract, a three-year joint purchase with other Virginia counties, concluded at the end of the third quarter of FY 2010. This action will initiate a new, follow-on contract envisioned to sustain at least a 10 percent level for three additional years.

Resources

Based on the last contracted price and volume, a new contract would require funding of $783,000 for a three-year term. No contract is currently in place since this action was not funded in FY 2011. Funding for a future contract would be requested within the Facilities Management Department budget.

EIP13-AQ11-01(B). Piezo Electric Generator Pilot Program

Description of Action

The Piezo Electric Generating System (IPEG) is a pioneering invention in the field of parasitic energy harvesting and generates energy from weight, motion, vibration and temperature changes. Initially, the system can be configured to generate and store energy from roads, airport runways and rail systems at the same time as delivering real-time data on the weight, frequency and spacing between passing vehicles.

The technology has been installed in some rail stations, but KW-H generated varies with the number of people walking on tiles. Company literature states typical application yields enough power to light one street light for a year. Typically street lights require about 675 KW-H per year.

The Piezo Electric Generator will be installed within immediate proximity of a Tysons Corner Metrorail Station. Tysons Corner is becoming a high-density, mixed-use development, encouraging people to live and work in the same community. The projected residential, job and visit growth in this area offers an opportunity to provide a high level of pedestrian traffic to support an IPEG System.

Based on 1,000 pedestrian trips per hour for 10 hours per day, this proposed ½-mile installation could support 20 streetlights. Based on 675 KW-H per year and a cost of $0.08 per KW-H, it is estimated that the annual electric cost for each street light is $54. The annual savings for the 20 lights would be $1,080. Compared to the installation cost of $10,000, we estimate that it would take 9.26 years to repay the investment. The equipment is expected to last 30 years and to require negligible maintenance costs

Environmental Agenda Objectives Supported:

Air Quality and Transportation (General)

Other Plans or Documents where this action appears or that it supports:

Cool Counties Climate Stabilization Initiative

Lead Agency:

Department of Transportation

Status/Plans/Outcomes

The intent of the program is to demonstrate the ability to generate electric power through alternative power sources. This system is anticipated to generate enough power daily to operate

20 streetlights in close proximity to the installed system. If additional power is generated it could go into the electric power grid system for credit from the electric utility.

Resources

ARRA funding for this project was reallocated due to federal grant time line limits. $10,000 is needed to fund this project.

EIP13-AQ11-02(B). School Bus SCR Retrofit

Description of Action

Retrofit of 32 school buses with a selective catalytic reduction (SCR) system to reduce emissions of oxides of nitrogen. This project is a technology demonstration.

Environmental Agenda Objectives Supported:

Air Quality and Transportation (General)

Other Plans or Documents where this action appears or that it supports:

None

Lead Agency:

Department of Vehicle Services

Supporting Agency:

Fairfax County Public Schools

Status/Plans/Outcomes

The U.S. Environmental Protection Agency (EPA) has a program in which manufacturers of emissions reduction products suitable for retrofit on diesel engines can earn a place on a "Verified Retrofit Technologies" list. "Verified technologies" require no further demonstration or documentation of their effectiveness to be eligible for use in a federally grant-funded retrofit program. The list also gives confidence to owners who wish to install retrofits without grant funding. The verified emissions reduction levels are sufficient basis for calculation of SIP credits.

The verification process is rigorous and expensive. Many companies, especially small ones, have struggled to complete it, if they could do it at all. USEPA now also has an "Emerging Technologies" program in which a manufacturer can receive a designation for a product as an "emerging technology" upon submission of an approvable test plan and some preliminary data. "Emerging technologies" are eligible for funding assistance to enable the manufacturer to complete field testing and development under a competitive grant program. The grant applicant must be the fleet that will provide the vehicles for the field testing.

In August 2009 USEPA awarded the county an Emerging Technologies grant for field testing of an SCR retrofit applicable to a type of engine installed in several model years of FCPS school buses. SCR technology will be incorporated in most diesel manufacturers' new engines beginning in model year 2010. Only a very few SCR retrofit products are currently offered, and those are relatively expensive. A unique feature of the candidate technology is that it does not

require use of diesel exhaust fluid (DEF), a product carried in a separate tank in the vehicle and required by all other currently available retrofit and original equipment SCR systems. The candidate technology also has the potential to be less costly than currently offered retrofit systems and may be in a cost range similar to the planned 2010 original equipment systems.

The project installed the no-DEF SCR system on 32 FCPS school buses at no cost to the county or FCPS. FCPS and the county contribute some staff time to administer the project and to make drivers, technicians and supervisors available for training. The county provided work space for the installations, and FCPS absorbs the cost of a small reduction in fuel economy. At the end of the grant performance period the retrofits will remain on the buses and will belong to FCPS.

All 32 retrofits have been installed. Data collection and analysis is expected late in 2011.

Resources

Estimated cost of the project is $1.55 million. This project is funded by an Emerging Technologies grant from the USEPA of $1.35 million and a contribution of leveraged resources from the manufacturer of $150,000. The county and FCPS will contribute $70,000 in leveraged (non-cash) resources.

EIP13-AQ12-01(B): Local and Regional Preparation for Commercially Available Plug-in Vehicles

Description of Action

This action prepares county staff for the introduction of plug-in vehicles (electric and plug-in hybrid electric) in the private sector in Fairfax County. It is coordinated with regional actions in the Washington Metro Area and the Commonwealth of Virginia. (County fleet preparation is in a separate action, AQ12-02(B).)

Environmental Agenda Objectives Supported:

Air Quality and Transportation 6

Other Plans or Documents where this action appears or that it supports:

Air Quality Management Plan
Cool Counties Climate Stabilization Initiative

Lead Agency:

Plug-In Preparation Policy Group (Ad hoc)

Other agencies:

DCCS	DPZ	OCA
DOT	DVS	OCE
DPWES – LDS	FMD	OPA

Status/Plans/Outcomes

Plug-in vehicles are highway cars, trucks and buses that use electrical grid energy. A purely electric vehicle (EV) charges its storage device, usually a large battery pack, from the grid to power an electric motor, which moves the vehicle. A plug-in hybrid electric vehicle (PHEV) does the same, but also has another, onboard power source, usually a gas or diesel engine, that drives an onboard generator to continue supplying electricity once the grid-supplied charge has been depleted. This engine may or may not also provide power directly to the wheels. The grid energy takes the place of petroleum fuel that a similar, conventional vehicle would use, either substantially (PHEV) or completely (EV).

At least 12 major original equipment manufacturers (OEMs) have announced plug-in model introductions by the 2013 model year, beginning with General Motors and Nissan in late 2010. The first plug-in vehicles, Chevy Volts, arrived at a very limited number of dealerships in the Washington Metro Area in December 2010. Nissan's rollout of its electric vehicle, the Leaf, has been slower than anticipated, partly (but not entirely) due to the massive earthquake and tsunami damage to Nissan's and its supplier's properties in Japan on March 11, 2011. OEMs have taken a

cautious strategy in the rate of deployment, but are optimistic about the prospects of widespread adoption of plug-in vehicles.

The paradigm change from liquid-fueled to electrically powered vehicles requires substantial preparation by a range of stakeholders for a smooth transition, especially in the area of charging infrastructure. This action identifies functions of the county government that are likely to affect the rate and overall success of the introduction of plug-in vehicles in Fairfax County, in both privately owned and commercial use. The objective is to recognize these relationships and to take steps to ensure governmental processes and procedures are adjusted or developed as necessary to accommodate a smooth introduction of plug-in vehicles. The action is coordinated with regional efforts in the Washington Metro Area and throughout Virginia.

A major aspect of regional preparation is an infrastructure for charging capability in the form of charging stations, or "electric vehicle support equipment" (EVSE). All studies we have seen forecast a substantial portion, and most probably a substantial majority, of the charging of privately owned plug-in vehicles will occur at home. Most studies also conclude that a strategically deployed network of public access EVSE will also be critical to the early phases of plug-in introduction. Existing zoning, permitting and inspection processes and procedures have emerged in other regions of the country as potential bottlenecks and may need to be adapted to address unique aspects of EVSE installations, both for private use and for public access. Streamlined permitting and inspection procedures already in place and in work in Fairfax County appear to be well suited to the needs and at least as good as any developed anywhere else.

We will need one or more models for ownership and operation of public access EVSE to understand whether and how such services should be regulated. Lack of, or late development of, one or more viable business models may dampen commitment from potential providers to invest in them. It would also slow the county's ability to determine whether it should provide public access EVSE in such places as county-owned Metro parking facilities or county governmental centers.

Public information efforts should address characteristics of various types of plug-in vehicles and EVSE to enable residents to make informed decisions regarding purchases of vehicles and support equipment.

Consideration should be given to providing policy support for plug-in vehicles and EVSE in the Policy Plan volume of the county's Comprehensive Plan. This issue is currently being considered by the Planning Commission's Environment Committee. In addition, per a proffered agreement to provide support to Tysons Corner and countywide sustainability initiatives, the MITRE Corporation has provided guidance and recommendations regarding the provision of EVSE in Tysons Corner through commitments that may be offered during the zoning process.

Numerous other issues have been identified by various organizations with a stake in the eventual widespread adoption of plug-in vehicles. The county considers these issues to be in the purview of private sector or state or federal government stakeholders.

Resources

The county has communications with four regional efforts to initiate charging infrastructure deployment and other aspects of plug-in vehicle preparation in the region.

- The Metropolitan Washington Council of Governments (MWCOG) initiated an "Electric Vehicle Forum for Metropolitan Washington Local Governments," which first met April 29, 2011.
- MWCOG coordinates an effort that centers about a project led by Coulomb Technologies, a manufacturer of EVSE, funded by a U.S. Department of Energy (USDOE) grant and known as "ChargePoint America." The project partially funds, among other things, a number of charging stations to be deployed in nine metro areas around the country. The Washington Metro area is allocated about 300-500 stations. All EVSE in this project will be "Level 2," requiring typically 2-10 hours for a full charge.
- Virginia Clean Cities coordinates another early-stage project known as "Virginia Get Ready." It is aligned with "Project Get Ready," a national campaign by the Rocky Mountain Institute. It brings together a wide range of stakeholders to strategize promotion of the adoption of plug-in vehicles, including deployment of charging infrastructure. This project has the Governor's endorsement and the cooperation of the Secretary of Transportation, This project published an "Initial Electric Vehicle Plan" for Virginia in October 2010 and established an educational web site shortly thereafter (www.VirginiaEV.org).
- Another USDOE grant-funded project is "The EV Project," led by ECOtality, another EVSE manufacturer. It also funds, among other things, charging stations along with at least part of the installation. A small percentage of the EVSE will be direct current fast-charging stations, providing substantial charge replenishment in 10-30 minutes.
- USDOE announced in May 2010 a technical assistance program for cities introducing plug-in vehicles and associated recharging. USDOE will offer technical assistance and facilitate exchanges between cities on barriers they have encountered and how they have overcome them. USDOE conducts a quarterly webinar featuring various stakeholders including representatives from jurisdictions that have made substantial progress in preparation for plug-in vehicles to discuss their lessons learned and their visions and plans for further preparations. No funding is associated with this program.

The EECCC members' parent agencies absorb participation costs with currently authorized staff. No travel funding requirements are anticipated beyond local meetings, out of area meetings in conjunction with other scheduled events, and other communications. While the two grant-funded projects (ChargePoint America and The EV Project) are likely to require some cost share for installation of charging stations, on the order of $1,000 - $2,000 for a simple installation to several times that for more complex ones, owners and users will most likely bear those costs. Necessary or desirable funding levels for education and other aspects of the action are not yet known.

EIP13-AQ12-02(B): Preparation for Fleet Introduction of Commercially Available Plug-in Vehicles

Description of Action

This action expedites introduction of plug-in vehicles (electric and plug-in hybrid electric) in the Fairfax County and Fairfax County Public Schools vehicle fleets.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 6

Other Plans or Documents where this action appears or that it supports:

Air Quality Management Plan
Cool Counties Climate Stabilization Initiative

Lead Agencies:

Department of Vehicle Services (DVS)
Facilities Management Department (FMD)
Fairfax County Public Schools (FCPS)

Status/Plans/Outcomes

Plug-in vehicles are highway cars, trucks and buses that use electrical grid energy. A purely electric vehicle (EV) charges its storage device, usually a large battery pack, from the grid to power an electric motor, which moves the vehicle. A plug-in hybrid electric vehicle (PHEV) does the same, but also has another, onboard power source, usually a gas or diesel engine, that drives an onboard generator to continue supplying electricity once the grid-supplied charge has been depleted. This engine may or may not also provide power directly to the wheels. The grid energy takes the place of petroleum fuel that a similar, conventional vehicle would use, either substantially (PHEV) or completely (EV).

Many major original equipment manufacturers (OEMs) have announced plug-in model introduction plans by model year 2013, beginning with General Motors in late 2010. The county intends to procure these types of vehicles as needed whenever they fulfill the mission requirements and are cost effective. The county may be willing to pay a life cycle cost premium to realize the emissions and petroleum consumption benefits they offer. This action develops and implements a plan to enable a rapid introduction of plug-in vehicles in the County and Schools fleets.

One primary issue in assimilating plug-in vehicles to the county fleet will be provision of adequate charging infrastructure. Charging stations, or "electric vehicle support equipment" (EVSE), provide the interface between the onboard charger in the vehicle and the electrical grid. DVS will consult with agency vehicle coordinators and leadership to establish criteria for selection of potential EVSE locations. DVS and FMD will work together to determine site preparation requirements and costs. Similar collaboration will occur with FCPS regarding EVSE locations for FCPS vehicles. Some early installations will also be completed.

Education and training actions will address several needs:

- Familiarization with the technology and its benefits and challenges for user agencies beginning with vehicle coordinators and agency leadership.
- FMD engineers to ensure building electrical service and site preparation is adequate for planned EVSE installations; electricians who may have installation or servicing responsibilities for EVSE.
- Communication with contracted and other local dealers to ensure their staffs are prepared to support the new vehicles.
- Location of training available for DVS technicians.
- Driver familiarization with specific vehicles and EVSE.
- First responders to vehicle accidents and EVSE emergencies.

Resources

DVS and the fleet user agencies absorb participation costs with currently authorized staff, as does FMD for general EVSE planning activities. Actual site preparation and installation costs will be partially funded with grants for at least the first few installations. The county is a participant in two grant-funded projects that provide full or partial funding for initial EVSE installations. These projects ("ChargePoint America" and "The EV Project") provide the actual EVSE at no cost but are likely to require some cost share for installation of charging stations, on the order of $1,000 - $2,000 for a simple installation to $35,000 or more for highly complex ones. Optimum initial county funding will be on the order of $100,000 for the combined projects. That level of funding would address:

- Two complicated installations of direct current "fast charging" stations, one at each of two DVS maintenance facilities
- Up to ten Level 2 "slow charging" stations at other county and FCPS locations
- A small amount that may be needed for training and education materials and services.

EIP13-WQ07-01(A). Watershed Management Planning

Description of Action

The county began the development of comprehensive watershed management plans for all 30 watersheds in FY 2002 and completed the plans in FY 2011. These watershed plans were all adopted by the Board of Supervisors. They will be used to establish the Capital Improvement Program investment needs for protection and restoration of water quality and the overall health of county streams. The watershed plans provide an assessment of watershed conditions, encourage public involvement, and prioritize recommendations for implementation of stormwater management projects. The development of watershed management plans also fulfill the requirement of the county's Municipal Separate Storm Sewer System (MS4) permit and will help the county to address Total Maximum Daily Loads (TMDLs) pollutant reduction and allocation requirements for local streams and the Chesapeake Bay. The watershed plan development process has generated structural and non-structural project recommendations, policy recommendations and county-wide strategies, with a planning horizon for projects up to 25 years. Implementation of the structural project recommendations commenced during FY 2006 with the Board of Supervisors (BOS) adoption of one penny per $100 of assessed valuation on real property funding the overall stormwater program.

During the Watershed Planning process, a number of policy-related recommendations were provided by the citizen-based steering committees as well as the consultants completing the plans. The county is in the process of addressing these policy recommendations; changes in policy and/or regulation may be recommended as a result of this process.

Environmental Agenda Objectives Supported:

Water Quality 1, 2, 3, 5, 6, 7, 8, 9, 10 and 11
Growth and Land Use 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Great Parks, Great Communities Plan

Lead Agency:

DPWES

Status/Plans/Outcomes

Watershed management plans for all 30 watersheds have been completed and adopted by the Fairfax County Board of Supervisors (BOS):

- Little Hunting Creek Watershed Management Plan (adopted February 7, 2005)
- Popes Head Creek Watershed Management Plan (adopted January 23, 2006)
- Cub Run and Bull Run Watershed Management Plan (adopted February 26, 2007)
- Difficult Run Watershed Management Plan (adopted February 26, 2007)
- Cameron Run Watershed Management Plan (adopted August 6, 2007)
- Middle Potomac Watershed Management Plan (adopted May 5, 2008)
- Pohick Creek Watershed Management Plan (adopted December 7, 2010)
- Sugarland Run and Horsepen Creek Watershed Management Plan (adopted December 7, 2010)
- Dogue Creek, Belle Haven, and Four Mile Run Watershed Management Plan (adopted January 11, 2011)
- Lower Occoquan (8 watersheds) Watershed Management Plan (adopted January 25, 2011)
- Nichol Run and Pond Branch Watershed Management Plan (adopted January 25, 2011)
- Accotink Creek Watershed Management Plan (adopted February 8, 2011)
- Little Rocky Run and Johnny Moore Creek Watershed Management Plan (adopted February 8, 2011)

Resources

The total contract cost for completing the watershed plans was approximately $15.5M. No additional funds are required for this effort.

EIP13-WQ07-11(A). Stormwater Management Reviews during the Comprehensive Plan Amendment Process

Description of Action

Establishment of a process to ensure that stormwater management considerations will be reviewed during the Comprehensive Plan amendment process.

Staff from the Department of Public Works and Environmental Services (DPWES) participates during the Comprehensive Plan amendment processes [both Area Plans Review (APR) and other amendments] as requested by the Department of Planning and Zoning (DPZ). All APR nominations are now referred to the Stormwater Planning Division, DPWES for review and comment. Recently, DPWES stormwater staff provided critical guidance and other assistance in the development of recommendations for incorporation into Comprehensive Plan text for Tysons Corner, Baileys Crossroads and Annandale; it is hoped that these efforts can provide a template for the development of stormwater management goals in other redeveloping areas.

In light of increasing state and federal stormwater management initiatives and regulatory mandates, the development of watershed management plans and the implications of land use changes to conditions and recommendations identified within these plans, interagency coordination on stormwater management issues will become increasingly critical. While past fact sheets have recommended the development of a formal interagency standard operating procedure, experiences with the less formal, yet comprehensive coordination process have been positive. This process is consistent with approaches to interagency coordination on Plan Amendment reviews in regard to a broad range of issues. Existing less formal yet comprehensive coordination processes have been effective and should be continued.

Environmental Agenda Objectives Supported:

Water Quality 1, 2, 3, 5, 7, 8, 9 and 10
Growth and Land Use 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Watershed Management Planning

Lead Agencies:

DPWES and DPZ

Status/Plans/Outcomes

Ongoing

Resources

Costs of the enhanced DPWES coordination are being absorbed into the agency's operating budget.

EIP13-WQ07-02(B). Stormwater Management Implementation Plan

Description of Action

Fairfax County's Stormwater Management Implementation Plan consists of five major program categories and operations: regulatory compliance (MS4 permit), dam safety, infrastructure reinvestment, project implementation, and watershed planning. Projects include safety upgrades of dams; repairs to stormwater infrastructure; repair and replacement of underground pipe systems and surface channels; development of watershed master plans; measures to improve water quality, such a stream stabilization, rehabilitation, and structural flood proofing; best management practice (BMP) site retrofits; increased public outreach efforts; and stormwater monitoring activities.

Environmental Agenda Objectives Supported:

Water Quality 1, 2, 3, 5, 7, 8, 9, 10 and 11
Growth and Land Use 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Watershed Plans
Great Parks, Great Communities Plan

Lead Agency:

DPWES

Status/Plans/Outcomes

The FY 2010 program completed 27 stormwater management projects including storm drainage maintenance; infrastructure replacement; stormwater outfall improvements; flood mitigation; stream restoration; dam repairs and upgrades; flood response monitoring; and pond sediment removal and restoration.

Resources

The county continued its capital improvement and infrastructure reinvestment strategies in FY 2010, with a capital budget totaling $20M. The current funding, which, via the Stormwater Service District, increased from $0.01 per $100 of assessed valuation on real property in FY 2010 to $0.015 in FY 2011, is expected to face increasing demands as inventory continues to grow more stringent and new regulatory requirements become effective. A continued reinvestment is required to maintain the stormwater infrastructure. The additional funding, in FY 2011, was allocated for infrastructure reinvestment of existing facilities and implementation of critical capital projects that address health and safety issues to mitigate the impacts of stormwater flooding, and/or improve stormwater quality.

EIP13-WQ07-03(B). Stormwater Retrofits

Retrofitting existing stormwater management facilities to provide improved stormwater management and water quality controls is a key part of the county's reinvestment program. The county is responsible for the maintenance of over 1200 stormwater management facilities. There are various types of stormwater management facility retrofits, but many are intended to improve the capacity of ponds, beyond their original designs, for better water quality and/or quantity control. Water quality retrofits enhance nutrient uptake and increase the infiltration, uptake and transpiration of stormwater while water quantity retrofits help to reduce downstream flooding and erosion.

Environmental Agenda Objectives Supported:

Water Quality 3 and 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Watershed Management Plans
Great Parks, Great Communities Plan

Lead Agency:

DPWES

Status/Plans/Outcomes

In 2010, the county maintained compliance with retrofit requirements by completing 17 projects to enhance stormwater management functionality. The projects included best management practice (BMP)/low impact development (LID) retrofits; detention pond retrofits; dam safety projects; slope failure repairs; sediment removal; trash rack modifications; outfall restoration/stabilization projects; and major maintenance projects to enhance stormwater management functionality

The following table describes the retrofit projects completed by the Department of Public Works and Environmental Services (DPWES) and the Fairfax County Park Authority (FCPA) in calendar year (CY) 2010.

Project Name	***Description***	***Partners***
851DP Retrofit	Removed sediment to restore pond functionality and added a wetland seed mix retrofit to enhance the environmental quality of the pond.	DPWES
Burke Center Section 11B	Improved and retrofitted the dam to comply with the state dam safety requirements	DPWES
Cinnamon Oaks	Increased detention capacity and improved water quality by constructing sediment forebays and planting a specially designed seed mix to enhance function and longevity with native species.	DPWES
Great Falls Nike Park	Renovated stormwater pond to enlarge detention basin and replace the riser structure	FCPA
Hampton Forest Spillway	Repaired and retrofitted dam for state certification to comply with the state dam safety requirements.	DPWES
Kings Park Section 18	Improved and retrofitted the dam to comply with the state dam safety requirements.	DPWES
Lake Accotink Dam Repairs	Improved dam and repaired spillway to comply with the state dam safety requirements.	DPWES, FCPA
Langley Oaks 2	Established permanent maintenance access, repaired the existing dam embankment and retrofitted pond to provide water quality benefits.	DPWES
Mason District Park	Retrofitted detention basin for enhanced water quality.	DPWES, FCPA
Oak Knoll Estate	Retrofitted detention basin for enhanced water quality.	DPWES
Prosperity Pond Retrofit	Established permanent access and retrofitted detention basin to provide enhanced, extended detention to maximize water quality benefits.	DPWES
Regional Pond D-77	Improved the environmental quality and functionality of the regional pond by transplanting numerous plantings from similar ponds throughout the pond floor.	DPWES
Spring Hill RECenter Parking Lot Expansion	Installed two large underground stormwater management facilities, pervious concrete pavement, bio-retention basins, a vegetated swale and seven tree boxes to improve water quality for the parking lot.	DPWES, FCPA
Sycamore Ridge	Increased detention capacity and improved water quality by constructing sediment forebays and planting a specially designed seed mix to enhance function and longevity with native species.	DPWES
University Square	Established permanent access and retrofitted detention basin for enhanced water quality.	DPWES
Weltman Estates Pond Retrofit	Retrofitted detention basin for enhanced water quality.	DPWES

Project Name	***Description***	***Partners***
Woodstream Pond Retrofit	Established permanent maintenance access, stabilized stream banks, repaired existing dam embankment and retrofitted pond to provide water quality benefits.	DPWES

Resources

Resource demands will be quantified as potential projects are identified. Funding is provided in the overall stormwater program budget each fiscal year.

EIP13-WQ07-05(B). Stream Stabilization and Restoration Projects

Description of Action

Stream stabilization and restoration is an important objective to improve the overall health of the stream system throughout the county. The Stream Physical Assessment completed in 2003 defines the needs along various stream segments. The current condition of streams varies throughout the county and specific projects are being identified to address these needs. Interdisciplinary processes are utilized to address the project evaluation process as well as implementation strategies.

Environmental Agenda Objectives Supported:

Water Quality 8

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Great Parks, Great Communities Plan

Lead Agency:

DPWES

Status/Plans/Outcomes

In 2010, the county completed three stream restoration projects. The project types, locations and partners are as follows:

Project Name	***Problem***	***Solution***	***Partners***
Big Rocky Run Tributary	Eroded streambank	Restored ~350' of stream by establishing a stable stream morphology by stabilizing bank grades, installing natural channel design with varying rock structures and restoring the riparian area with native landscaping.	DPWES, FCPA
Bridle Path	Eroded streambank	Provided ~1200' of streambank stabilization using natural channel design techniques to improve water quality and reduce safety concerns	DPWES, FCPA
Dead Run	Eroded streambank	Restored ~l500' of stream utilizing soil lifts, rock toe bases, rock vanes, compost berm and fiber log rolls in order to increase water quality for the stormwater outfall and reduce stream bank erosion.	DPWES, FCPA

Since 2008, over seven miles of stream restoration have been completed in Snakeden Branch and The Glade watersheds as part of the Northern Virginia Stream Restoration Bank. Active construction began in the Colvin Run watershed in November 2010. Additional streams in Reston's Colvin Run watershed located north of the Dulles Toll Road and east of Reston Parkway, are under construction with focus on improving streams that drain into Buttermilk Creek, Lake Anne and Lake Newport.

Re-establishing stream corridors will contribute to long-term streambank stabilization, aquatic improvements, increased habitat and healthier streams. Evaluation of stream restorations will occur in the overall program assessment process. Environmental consulting firms have been engaged through a multi-year contract to assist with the design of these projects. In addition, construction contracts with qualified contractors are in place and restoration work in progress in various locations throughout the county. Capital improvement projects strive to utilize environmentally sensitive construction strategies to stabilize a stream bed and stream bank while replanting appropriate native species to ensure long-term viability of the restoration. It is anticipated that additional projects will be identified in the watershed plans.

Resources

Resource demands will be quantified as potential projects are identified. Funding will be provided in the overall stormwater program budget each fiscal year.

EIP13-WQ07-08(B). Soil Survey Project

Description of Action

Fairfax County initiated the completion and update of the Fairfax County Soil Survey, which was done under the leadership of the United States Department of Agriculture (USDA)'s Natural Resources Conservation Service (NRCS), in partnership with the county and the Northern Virginia Soil and Water Conservation District (NVSWCD). The original soil survey published in 1963 was based on field work completed in 1955 and covered 60% of the county. Over the last 50 years, county land use has changed immensely and the science of soils has progressed, particularly in the area of soil taxonomy. Much of the information used to describe soils in the 1963 survey has become less useful in the densely populated urban portions of Fairfax County. Additional field work was done by the county between 1966 and 1990, until the county's Soil Science Office was closed; but it was never completed nor certified to national standards.

The field work and mapping for the soil survey update was completed by 2008. Areas of the county that were not surveyed previously are now mapped. All previously mapped areas have been checked and updated to national standards. The updated soil survey reclassifies the soils and provides expanded interpretive information. It also includes information on soils that have been disturbed, such as when an area is developed. This is one of the first instances in the nation of surveying disturbed soils. The new survey is certified to USDA National Cooperative Soil Survey standards and incorporated into the USDA's National Soils Information System database. The new soil survey is published in its entirety (maps, descriptions, interpretations and data tables) and available on USDA's web soil survey and soil data mart websites. The new soil survey is available on the county's website via the Digital Map Viewer and has been integrated into the county's GIS system.

Environmental Agenda Objectives Supported:

Growth & Land Use 5
Water Quality 2 and 5

Other Plans or Documents where this action appears or that it supports:

Watershed Plans

Lead Agency:

NVSWCD, GIS, DPWES

Status/Plans/Outcomes

The mapping and data collection have been completed and have undergone quality control and assurance processes, and scanning and digitization by the USDA-NRCS state office in

Richmond. There is a significant increase in the amount and type of information available about soils in the county. Because of advances and refinements in the science of soils, certain soils are renamed and there are a few newly created soil names, such as 'Gunston.' In addition, the special study to characterize the large percentage of disturbed soils in the county has been completed. Disturbed soils no longer have their original structure and are more variable in their physical properties. They generally are denser and create more runoff than undisturbed soils, often due to having been compacted during development and construction. Knowing the behavior and characteristics of disturbed soils is vital for understanding the performance of built structures and slopes, as well as stormwater management, water quality and erosion issues that will affect Fairfax County in the future, especially as efforts towards meeting the Chesapeake Bay Agreement intensify.

The new soil survey has been integrated into the county's GIS system. Maps showing soil types layered over county property maps have been created for each tax grid in the county. These maps are available to the public through the GIS Department's Digital Map Viewer on the county website. The soil survey information is also available online at two USDA-NRCS websites; the soil map and tabular data are available at the Web Soil Survey website, and tabular data alone is available at the Soil Data Mart website. The tabular and map data available at the USDA-NRCS websites are much broader and more extensive than that found on the county website, but the data on the county website is more specific to the needs of Fairfax County residents and the maps include county property information, such as boundaries and addresses.

A reformulation of the soil problem classes, as it relates to constructability and performance of structures, slopes, etc., has been completed and applied to all soil types of the new survey. The new problem classes more closely resemble those employed in Loudoun and Prince William counties, therefore causing less confusion for private industry. One major difference will be that disturbed soils, which are mapped only in Fairfax, have their own separate problem class.

Changes to the county's PFM and County Code have been completed and were approved by the Engineering Standards Review Committee (ESRC) and the Planning Commission. The Board of Supervisors (BOS) officially accepted and adopted the new soil survey at a public meeting on June 7, 2011. The updated survey is now the official soil survey of the county.

In the spring of 2010, NVSWCD, Land Development Services (LDS), the Virginia Association of Professional Soil Scientists and Virginia Tech partnered to provide soil morphology training and certification for professional engineers that will allow them to determine the water table throughout the year. Previously, this could only be made between November and May by a professional soil scientist, a wetlands delineator or a professional geologist.

Other work related to soils and the soil survey continues:

- Educating the private sector on the new soil survey information;

- Developing a process for maintaining and updating the soil survey as land uses change, including coordinating with USDS-NRCS and GIS.
- Evaluating and interpreting complex and inter-related soils information, including the emerging field of disturbed soils;
- Conducting soils investigations ;
- Assisting both the county and the private sector with soils-related issues;
- Retrieving and applying the appropriate soils information for given situations;
- Conducting soils-related research in order to meet county needs;
- Evaluating and testing soils for infiltration capability to assist with the design of rain gardens, swales and other low impact development techniques;
- Monitoring and evaluating the function of installed infiltration measures;
- Providing scientific, unbiased advice in the public interest to internal and external customers, and;
- Developing and leading training and education programs on soils and the appropriate and effective use of soil maps and soils information.

Resources

- The county and USDA-NRCS provided the funding to update the soil survey. NVSWCD facilitated the project. The county's contribution to the project over a five year period was approximately $755,000.

- The BOS provides funding to continue to support a soil scientist to carry out the responsibilities outlined above, as part of the annual funding for NVSWCD.

EIP13-WQ07-09(B). Soil and Water Quality Conservation Planning for Horse Operations and Other Land in Agriculture

Description of Action

Soil and Water Quality Conservation Plans are developed for all land in agricultural use, which in most cases are horse-keeping operations. The plans are written to comply with the Chesapeake Bay Preservation Act guidelines. They include best management practices (BMPs) to reduce: sediment pollution from erosion on pastures and stable areas; excess nutrients from animal waste and fertilizers; and the misuse of pesticides and herbicides. The plans also include the establishment and maintenance of vegetated riparian buffers next to all streams and other Resource Protection Areas (RPAs). As required by county ordinance, soil and water quality conservation plans are developed for all agricultural and forestal districts in the county. Plans are updated and technical assistance is provided by the Northern Virginia Soil and Water Conservation District (NVSWCD) as needed. Conservation plans are developed for landowners receiving state cost-share money to install BMPs such as manure storage and composting structures, to fence animals out of streams, and to design pastures and watering systems that make more efficient use of the land and protect natural resources. An on-going outreach and education program encourages land owners to manage their land in an environmentally responsible way. This includes presentations at community events, articles in newsletters, and distribution of the publication, *Earth Friendly Suburban Horse Farming.*

In addition, nutrient management and integrated pest management plans are reviewed, or developed, for nursery operations, golf courses, and other agricultural land uses.

Environmental Agenda Objectives Supported:

Water Quality 1, 7 and 10
Environmental Stewardship 2

Other Plans or Documents where this action appears or that it supports:

Chesapeake Bay Preservation Ordinance
Agricultural and Forestal District Ordinance
New Millennium Occoquan Watershed Task Force Report

Lead Agency:

NVSWCD

Status/Plans/Outcomes

In addition to those mentioned in earlier status reports, in 2010, NVSWCD prepared Soil and Water Quality Conservation Plans for 13 parcels, comprising 275 acres of land, which included 6,310 linear feet of vegetated buffers in Chesapeake Bay RPAs. The RPAs included 1,870 linear feet of newly proposed vegetated buffers and vegetated buffers and 4,440 linear feet of replanned buffers. Three of the plans were required for the renewal of Agricultural and Forestal Districts in the county.

In 2010, NVSWCD held two equestrian seminars focusing on pasture planning and management and horse waste management. Another seminar, attended by county staff and private pond managers, featured floating wetlands as an innovative pond nutrient management technique. A presentation on controlling aquatic weeds wad made to 300 certified pesticide applicators in the landscaping and pond management industry.

During 2010, NVSWCD provided technical assistance to the County's Code Enforcement Division and three landowners by preparing conservation plans for properties cited for county code violations. They included: 1) a remediation plan for tree removal and clear–cutting beyond the limits of a soil and water quality conservation plan; 2) an erosion and sediment control plan, followed by a soil and water quality conservation plan, for a horse operation that imported fill without having submitted a rough grading plan; and 3) a restoration plan to correct illegal activities and improper use of an RPA.

Resources

This work is supported as part of the annual funding allocation to NVSWCD.

EIP13-WQ08-02(B). Radio Ad Campaign

This fact sheet has been moved to Environmental Stewardship and is now called EIP13-ES08-01(B) Education and Outreach Programs and Activities.

EIP13-WQ08-03(B). Stormwater Management Review Process

Description of Action

Increased involvement in the review of stormwater management issues during the zoning process by the staff of the Department of Public Works and Environmental Services (DPWES) since 2004.

In 2004, the Board of Supervisors (BOS) adopted an amendment to the Zoning Ordinance (ZO) that required more substantial stormwater management information for rezoning, special exception, and special permit applications (see EIP07-WQ07-01(A) in Appendix 3). Appropriate staff needs to review the additional information in order to ensure that effective controls and practices are incorporated into site designs; therefore, the involvement of DPWES in the review of stormwater management information submitted during the zoning process has increased.

The rezoning reviews and comments by the Northern Virginia Soil and Water Conservation District (NVSWCD) also scrutinize stormwater management issues. In most cases, a site visit is part of the review process, in order to make determinations about environmentally sensitive areas, the efficiency of vegetated buffers and the integrity of an existing stream channel to accommodate post-development storm runoff. In addition to comments regarding soils, slopes, vegetation, streams and other natural resources and the potential environmental impacts of the proposed land-use change, recommendations are made to improve site design and stormwater management practices, including implementation of low impact development (LID) techniques, to enhance the protection of streams and other natural resources, both on-site and off-site.

Areas where the development proposals would not meet the Public Facilities Manual (PFM) requirements are often identified. The need for floodplain studies and Resource Protection Area (RPA) Encroachment Exceptions are also identified.

Environmental Agenda Objectives Supported:

Water Quality 1, 2, 3, 5, 7, 8, 9, 10 and 11
Growth and Land Use 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Infill and Residential Development Study
Watershed Management Planning
Chesapeake Bay Protection Ordinance
Zoning Ordinance's Floodplain Regulations

Lead Agencies:

DPWES and DPZ

Status/Plans/Outcomes

The increased involvement in the zoning process by DPWES staff, as well as continued technical guidance provided by the NVSWCD, have facilitated, and will continue to facilitate, the identification and pursuit of viable site design and stormwater management approaches. Increased DPWES involvement in the zoning process is also providing for improved continuity from the zoning process to the site plan/subdivision plan review process.

Resources

Staff review time for this function is currently provided within the operating budgets of DPWES, DPZ and NVSWCD. Due to budget constraints, three vacant[1] stormwater engineer positions were permanently eliminated from the Stormwater and Geotechnical Section (SGS) of LDS in FY 2011. The permanent reduction will prevent SGS from unfreezing and filling the positions. This will result in additional strain on existing limited staff resources as plan submissions increase when building and development activity in the region rebounds with the economy.

1 These positions had not been filled and held "frozen", but not eliminated, in previous fiscal years specifically for budget considerations.

EIP13-WQ08-04(B). Low Impact Development Initiatives

Description of Action

In 2007, the Board of Supervisors (BOS) adopted amendments to the Public Facilities Manual (PFM) incorporating design and construction standards, plan submission requirements, and requirements for the release of bonds and conservation escrows for six Low Impact Development (LID) practices. The six LID practices are: pervious pavement, bioretention filters and basins (rain gardens), water quality (vegetated) swales, tree box filters, vegetated roofs (green roofs), and reforestation. LID projects are being constructed throughout the county to demonstrate LID designs and practices.

Environmental Agenda Objectives Supported:

Water Quality 1, 2, 3, 5, 7, 8, 9 and 10
Growth and Land Use 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Infill and Residential Development Study
Watershed Management Planning
VPDES MS4 Permit

Lead Agency:

DPWES

Status/Plans/Outcomes

In calendar year (CY) 2010, the Department of Public Works and Environmental Services (DPWES), Fairfax County Park Authority (FCPA), nonprofit organizations and individual volunteers contributed to the design and implementation of 10 projects that incorporate one or more LID practices. Those projects are summarized in the following table.

Project	***Description***	***Partners***
Armstrong Elementary School	Retrofitted existing site for improved water quality and channel protection.	DPWES, Reston Association (RA)
Carl Sandberg Elementary School	Retrofitted the site with two rain gardens for improved water quality.	DPWES
Clermont Elementary School	Retrofitted existing site with a bioretention and two tree box filters for improved water quality.	DPWES
Fire & Rescue Training Academy Phase I	Constructed a vegetated swale and planted with native seed; amended soil with organic compost and planted native seed mix.	DPWES
Greendale Golf Course	Modified ~120' of swale to provide rain water harvesting, improve infiltration and improve both site infrastructure and aesthetics.	FCPA
Lee District Park Family Recreation Area	Constructed a stormwater maintenance facility beneath the parking lots to reduce the amount of land disturbance required to provide storage capacity for on-site detention.	FCPA
Linway Terrace Park & Pine Ridge Park	Renovated existing adult-sized natural turf fields into synthetic turf fields with a supporting open-graded aggregate base providing storage capacity to reduce peak flows during large storm events and eliminate need for fertilizer and pesticides.	FCPA
Pine Ridge Park	Renovation of existing adult-sized natural turf soccer fields into synthetic turf fields with a supporting open-graded aggregate base providing storage capacity to reduce peak flows during large storm events and eliminate need for fertilizer and pesticides.	FCPA
Ossian Hall Park-Phase II	Installed an underground stormwater management facility, infiltration trench, rain garden and a synthetic turf field	FCPA, FCPS
McLean Community Center	Constructed a natural channel to dissipate energy and increase water absorption and nutrient uptake within the pond and constructed two micro pools to increase uptake of nutrients and the settling out of sediment	DPWES
Spring Hill RECenter Parking Lot Expansion	Installed two large underground storm water management facilities, pervious concrete pavement, bio-retention basins, a vegetated swale and seven tree boxes to improve water quality for the parking lot	DPWES, FCPA

DPWES staff continues to collaborate with DPZ to incorporate LID into zoning cases, where appropriate. Stormwater Planning Division (SWPD) staff provides technical expertise in the form of recommendations regarding the ways in which a site may be developed in a more environmentally-sensitive manner. In most cases, a site visit by NVSWCD is part of the review process for rezoning or special exception applications. NVSWCD also provides comments to DPZ, including suggestions for better site design to protect natural resources, both on-site and off-site, and include the incorporation of LID techniques when appropriate.

Resources

This effort is funded by existing Stormwater Management Program funding, Park Authority Capital Improvement Plan bond funds, and Environmental Improvement Program funds.

EIP13-WQ08-05(B). Benchmarking Watershed Tree Cover Levels

Description of Action:

This action is an effort to identify the level of tree cover that exists in the county's major watersheds and to make that data available for use in a wide-range of natural resource management and land-use planning efforts. This action supports components of the Tree Action Plan, and the Chesapeake Bay Program's Riparian Forest Buffer Directive, which encourages communities to complete an assessment of their urban forest, adopt local goals to increase urban tree canopy cover, and encourage measures to attain the established goals in order to enhance and extend forest buffer functions in urban areas. Watershed-based tree cover data can be used:

- as a watershed planning tool
- to identify the location of riparian buffer restoration projects
- to identify the location of tree plantings for air quality purposes
- to establish watershed-based tree cover goals (see EIP13-WQ08-09(B))
- to support attainment of a countywide tree cover goal (see EIP13-ES09-08(B))
- to conduct geographic information system (GIS) analyses for natural resource management purposes
- to provide information relevant to land use planning and the review of zoning cases

Environmental Agenda Objectives Supported:

Water Quality 11
Growth & Land Use (General)
Air Quality and Transportation (General)

Other Plans or Documents where this action appears or that it supports:

Fairfax County Tree Action Plan
Fairfax County's 30-year Tree Canopy Goal
The Chesapeake Bay Program's Riparian Forest Buffer Directive No. 03-01

Lead Agency:

DPWES, Urban Forest Management Division (UFMD)

Status/Plans/Outcomes:

This effort has been funded and is underway. This action supports a recommendation of the Tree Action Plan. UFMD will be conducting a tree cover analysis using high-resolution satellite imagery to be acquired in 2011 to establish tree cover percentage levels for the 30 major watersheds in Fairfax County. The 2011 tree cover data will also be used to support periodic countywide canopy change detection analyses. The end product of this analysis will be a GIS dataset that can be utilized in conjunction with other GIS datasets such as streets, building footprints, and topography for a wide variety of uses including watershed planning. Tree cover analysis for all watersheds is scheduled to be completed by June 2012. In addition to providing information for watershed planning efforts, benchmarking tree cover levels could provide data critical to tracking and verification procedures that may be required for tree preservation and planting air measures in future air quality plans.

Resources:

No additional resources for this action are required; however, future efforts to update tree cover levels are likely to require additional funding to purchase new satellite imagery. The estimated one-time cost to update high-resolution satellite imagery on a countywide basis is $30,000.

EIP13-WQ08-06(B). Stream Flow Gauge Monitoring

Description of Action

Partner with the U.S. Geological Survey (USGS) to install stream flow gauges, which can assist in evaluation of stormwater management (SWM) facilities, pollutant loadings and in restoration design.

Environmental Agenda Objectives Supported:

Water Quality 1, 3, 8 and 10

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Watershed Planning
VPDES MS4 Permit

Lead Agency:

DPWES

Status/Plans/Outcomes

During 2007, the county partnered with the USGS to install a water resources monitoring network. Dry and wet weather storm event flow data, nutrient data, as well as real time water quality parameters, are being collected by means of four automated USGS water gauging stations throughout the county. The continuous water quality data is posted to a USGS web page, typically within 15 minutes after collection. In addition, 10 less-intensely (manually) sampled stations are located throughout the county. The water quality trend information gleaned from the gauged stations will be extrapolated to the less intensely monitored sites for a broader picture of water quality trends in watersheds of varying characteristics countywide.

Resources

This project is funded by existing Stormwater Management Program funding.

EIP13-WQ08-07(B). VPDES MS4 Permit Application

Description of Action

Review and update the Municipal Separate Storm Sewer System (MS4) program to ensure continued compliance with the county's current MS4 permit.

Environmental Agenda Objectives Supported:

Growth and Land Use 5
Water Quality 1, 3, 4, 5, 6, 7, 8, 9 and 10
Environmental Stewardship 1, 2, 3 and 4

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Watershed Planning
VPDES MS4 Permit

Lead Agency:

DPWES

Status/Plans/Outcomes

Negotiations continue and the county is operating under the five-year MS4 permit issued in 2002, which has been administratively continued by Department of Conservation and Recreation (DCR). DCR submitted a fifth preliminary draft of the permit to the county in February 2011. The Fairfax County Public Schools (FCPS) Phase II MS4 permit is being integrated into the county's Phase I MS4 permit. In 2010, coordination activities included an update of the draft Memorandum of Understanding (MOU) by the county to reflect the 2010 draft permit requirements. The MOU outlines the roles and responsibilities of each organization for permit compliance under a combined MS4 program. The MOU is being updated to reflect the latest draft permit language and has not yet been finalized.

Resources

Currently, authorized funding is adequate to meet the minimum requirements of the existing MS4 permit.

EIP13-WQ08-08(B). Outreach and Education Program

This fact sheet has been moved to Environmental Stewardship and is now called EIP13-ES08-01(B) Education and Outreach Programs and Activities

EIP13-WQ08-09(B). Establishing Tree Cover Goals for Watersheds

Description of Action:

The successful management of Fairfax County's water resources and stormwater concerns is dependent upon our ability to protect and manage the county's urban forest and other vegetation resources. As in all parts of the Chesapeake Bay watershed, Fairfax County's tree canopy and soil conditions associated with forested areas deliver significant water quality and stormwater management benefits. Fairfax County's tree canopy is estimated to intercept and absorb one million pounds of nitrogen annually that could eventually enter the Chesapeake Bay, and to intercept and slow the velocity of 370 million cubic feet of stormwater annually.

This action addresses a recommendation of the Tree Action Plan to identify tree cover goals for all major watersheds in the county, along with the policies, practices, actions and funding needed to achieve these goals; and then, to use the tree cover goals to support both watershed planning efforts and land use decisions. This action also supports regional efforts of the Chesapeake Bay Program that encourage communities to set urban tree canopy goals. The Chesapeake Bay Program's Riparian Forest Buffer Directive No. 03-01 (Chesapeake Executive Council) signed in December 2003, expands the previous riparian buffer directive by recognizing that tree canopy offers stormwater control and water quality benefits for municipalities in the Chesapeake Bay watershed, and can extend many riparian forest buffer functions to urban settings. The Riparian Forest Buffer Directive states the following program goals related to tree cover:

- By 2010, work with at least five local jurisdictions and communities in each state to complete an assessment of urban forests, adopt a local goal to increase urban tree canopy cover and encourage measures to attain the established goals in order to enhance and extend forest buffer functions in urban areas; and,
- Encourage increases in the amount of tree canopy in all urban and suburban areas by promoting the adoption of tree canopy goals as a tool for communities in watershed planning.

Environmental Agenda Objectives Supported:

Water Quality 11
Growth & Land Use (General)

Other Plans or Documents where this action appears or that it supports:

Fairfax County Tree Action Plan
Fairfax County's 30-year Tree Canopy Goal
The Chesapeake Bay Program's Riparian Forest Buffer Directive No. 03-01

Lead Agency:

DPWES, Urban Forest Management Division (UFMD)

Status/Plans/Outcomes:

This action supports a recommendation of the Tree Action Plan. Several of the steps necessary to complete this action are underway. UFMD is currently working to quantify tree cover levels in all 30 major watersheds. The majority of the activities needed to support this action began during CY 2011. These activities will require participation from several agencies and business areas including UFMD, the Stormwater Planning Division (SWPD), Department of Public Works and Environmental Services (DPWES), the Planning and Zoning Evaluation Divisions of Department of Planning and Zoning (DPZ), and the Resource Management Division, Fairfax County Park Authority (FCPA).

The following actions are prerequisite to generating achievable tree cover goals:

- Benchmarking existing tree cover levels (underway)
- Assessing the potential for tree cover gains and losses in critical watershed and sub-watersheds
- Assessing the potential for tree cover gains and losses on public properties, developed private property and commonly-owned open space.
- Assessing potential for additional canopy loss through development of under-utilized parcels
- Analyzing the potential of using easements and other deed-restrictions as canopy protection mechanisms
- Analyzing policies and ordinances that affect tree conservation (underway through multiple actions of the Tree Action Plan)
- Identifying ways to link tree cover goals and related policies to the practices contained in a countywide urban forest management plan
- Identifying grant opportunities and alternative funding sources that could be used to support tree planting and preservation activities
- Identifying ways to engage non-profit tree planting groups, private property owners, homeowners associations and civic associations
- Identifying how tree cover goals can be used effectively within the context of land use planning, and how the goals can be applied during the review of zoning cases
- Identifying ways to engage and partner with the land development industry
- Identifying ways to engage and partner with commercial property management groups
- Setting specific tree cover goals for all major watersheds and critical sub-watersheds within the context of an overall countywide tree cover goal (See EIP13-ES09-08(B))
- Identifying target dates to achieve those goals
- Identifying ways to assess gain or loss of social and ecological benefits resulting from changes to tree cover on watershed and countywide basis

This action will identify realistic and achievable tree cover goals for all major watersheds, along with the policies, practices, actions and funding needed to support those goals. In addition, the action will investigate ways to use tree cover goals in the support of watershed management and planning efforts. It is anticipated that tree cover goals for individual watersheds could begin to be generated by calendar year (CY) 2012.

Resources:

Considerable staff hours will be needed to accomplish this action. No additional funding is requested to support the action in fiscal year (FY) 2013; however, future funding and additional staff resources may be needed to support the implementation of associated policies and projects.

EIP13-WQ07-10(C). Development of a Stormwater Ordinance and Comprehensive Review of the County's Code and Zoning Requirements

Description of Action

This action includes the development of a draft stormwater ordinance and related revisions to the County Code and Public Facilities Manual (PFM) and a comprehensive review of site design requirements within the context of better site design principles (i.e., the model development principles developed by the Center for Watershed Protection through its site planning roundtable). The first goal is to draft a stormwater ordinance and related amendments to the County Code and PFM to consolidate the county's stormwater regulations and requirements into a single chapter. The proposed ordinance and related amendments will incorporate changes in applicable federal and state requirements (e.g., revisions to the Virginia Stormwater Management Program Permit Regulations). The draft ordinance and proposed amendments to the County Code and PFM will be presented to the Planning Commission and the Board of Supervisors (BOS) for consideration. The second goal of this action item is to identify regulatory impediments to a broader application of better site design principles in Fairfax County, to identify potential policy conflicts between better site design and other issues (e.g., the desire for adequate parking capacity vs. the desire to minimize impervious cover), and to draft appropriate Zoning Ordinance and/or other County Code amendments for consideration by the Planning Commission and BOS.

In order to comply with mandated deadlines for incorporation of state and federal stormwater regulatory changes it may be necessary to complete the goals of this action in phases.

Environmental Agenda Objectives Supported:

Water Quality 1, 2, 3, 5, 7, 8, 9 and 10
Growth and Land Use 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Infill and Residential Development Study
Watershed Management Planning

Lead Agency:

DPWES and DPZ

Status/Plans/Outcomes

Development of a stormwater ordinance will be initiated in FY 2012. County staff will prepare the draft stormwater ordinance and related amendments to the County Code and PFM.

The comprehensive review of the County's Code and zoning requirements has not been initiated. A number of approaches could be taken to implement the comprehensive review for better site design principles. This could be done through an internal review by appropriate county agencies (Department of Planning and Zoning (DPZ), Department of Public Works and Environmental Services (DPWES) and Department of Transportation (DOT)), coordination with the Planning Commission and BOS, with stakeholder outreach at appropriate steps in the process, a consultant contract or establishment of a local site planning roundtable through the Center for Watershed Protection.

Resources

Drafting the stormwater ordinance and related amendments to the County Code and PFM constitutes a significant effort involving considerable staff time and resources. Staff time for this action is currently provided within the operating budgets of DPWES, DPZ, and DOT.

The review for better site design principles also represents a significant effort regardless of the approach that is taken. If the review is to be pursued through an internal staff review, other initiatives would need to be delayed. It is anticipated that the effort would need to be pursued by existing staff and that new staff resources would not be sought (the process will, by necessity, require considerable institutional knowledge). A very broad, order of magnitude estimate of what it might cost to hire a qualified consultant to conduct and complete this review would be $100,000. Resources of $200,000 to $250,000 would likely be needed for a "roundtable" type program. However, it should also be noted that there are numerous opportunities to apply for grants to fund such efforts and staff anticipates that this funding would be sought for any efforts to implement this action.

EIP13-WQ07-12(C). Review of Standards and Guidelines for Special Permit, Special Exception, and Public Uses in the Resource Conservation (R-C) District

Description of Action

As recommended in the New Millennium Occoquan Watershed Task Force report, this action would provide for a review of standards and guidelines associated with Special Permit, Special Exception, and public uses that may be approved in the Resource Conservation (R-C) District. R-C zoned land is generally confined to the Occoquan Watershed (with Fort Belvoir being a major exception, albeit one that is not subject to county zoning requirements). Included in this review would be:

- Maximum allowable floor-area ratios;
- A consideration of development of standards and/or guidelines for impervious cover and/or undisturbed open space;
- Impacts of facility footprints and total impervious cover, including parking; and
- A consideration as to whether more specific guidance should be established in the Comprehensive Plan regarding mitigation of impacts on the water quality impacts of the Occoquan Reservoir.

The process through which such a review would occur has yet to have been determined. The New Millennium Occoquan Watershed Task Force has recommended that a broad-based advisory committee be established. More efficient approaches that still provide for significant stakeholder involvement may be available, and county staff has recommended coordination with the Planning Commission on the definition and scope of this effort.

Environmental Agenda Objectives Supported:

Growth and Land Use 5
Water Quality 1, 2, and 10

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan

Lead Agency:

DPZ

Status/Plans/Outcomes

This review has not yet been initiated. However, this item is included on the Priority 1 Zoning Ordinance Amendment Work Program for 2011. There is no projected timeline for completion, and the ability to pursue this effort is dependent on competing demands on staff resources for other amendments. Anticipated outcomes would be clarity regarding expectations governing Special Permit, Special Exception, and public uses that may be pursued in the R-C District in the Occoquan Watershed.

Resources

Resource needs will depend on the specific process that is pursued. However, even under the most efficient process, substantial staff resources will be needed; between two and four professional-level planners would need to devote a considerable portion of their work hours to this effort for a year or more. Additional clerical and supervisory resources would be needed, and a number of county agencies beyond the Department of Planning and Zoning (DPZ) would need to become involved to some extent (e.g., Department of Public Works and Environmental Services (DPWES); Fairfax County Park Authority (FCPA); Fairfax County Public Schools (FCPS).

EIP13-WQ10-01(C). Riparian Buffer Maintenance

Description of Action

Between 2005 and 2007, the Board of Supervisors (BOS) funded a project which supported the initial planting of trees and shrubs at 35 park sites totaling over 20 acres and 9,620 plants. This project is to maintain and supplement those 35 riparian buffer restoration projects on parkland throughout the county. Maintenance activities may include watering, invasive species removal, amendment of plantings with additional shrub, herbaceous and trees as needed, expansion of buffer projects to adjacent areas and monitoring.

Environmental Agenda Objectives Supported:

Environmental Stewardship 1, 2, 3, 4, 5 and 6
Parks Trails, and Open Space (General)
Water Quality 1, 2, 3, 5, 7, 8, and 10

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
MS-4 Permit
Natural Landscaping Committee Work Plan
Park Authority Strategic Plan
Park Authority Policy Manual
Park Authority Natural Resource Management Plan
Watershed Management Plans
Fairfax County Chesapeake Bay Preservation Ordinance
Great Parks, Great Communities Plan

Lead Agency:

Fairfax County Park Authority and DPWES

Status/Plans/Outcomes

This project is designed to support healthy riparian buffers that are important for stream quality (water quality, biodiversity indicators and ecological processes such as nutrient cycling) and terrestrial habitat (bird and wildlife diversity). At 35 sites, we are well on our way to developing these healthy ecosystems. However, as mowing decreases to allow for natural regeneration, the project sites are subject to invasion by non-native vines that could kill the young seedlings before they are fully established. Additional plantings in the herbaceous, shrub and canopy layer can fill in gaps created by severe flooding (June 06) and drought (August 06 and August 07) that have killed some of the initial plants. Initial funding did not include a monitoring and maintenance plan which is now needed. The Park Authority attempts to solicit volunteers (the "Tree Keepers") to take on the monitoring and maintenance has not been successful.

Resources

Funding needed: $55,000 per year, starting in fiscal year (FY) 2013, to maintain the sites.

EIP13-SW07-3(B). Purchase Environmentally Preferable Products and Services. Dispose of Surplus Property in an Environmentally Responsible Manner

Description of Action

The county continues to encourage the purchase and use of environmentally preferable products and services products through an Environmentally Preferable Purchasing (EPP) Program (ref. Procedural Memorandum (PM) 12-21). County purchasers are encouraged to purchase and use products and services that reduce negative environmental effects associated with the use of the product or service. It is widely accepted that promoting the purchase of environmentally-preferable products will in turn stimulate and expand markets for recyclables and green products and services. The County should also continue to expand efforts to dispose of surplus property in an environmentally responsible manner, seeking to maximize re-use and revenue.

Environmental Agenda Objectives Supported:

Solid Waste 4

Other Plans or Documents where this action appears or that it supports:

Fairfax County Framework for Excellence
20-year Solid Waste Management Plan for Fairfax County, published 2004
Solid Waste Management Program Strategic Plan (2006-2011)
Department of Public Works and Environmental Services Strategic Plan (2006-2011)
Board of Supervisors Environmental Agenda, published 2005

Lead Agency:

DPWES-DSWDRR and DSWCR (collectively, the Solid Waste Management Program)
Department of Purchasing and Supply Management (DPSM)

Status/Plans/Outcomes:

Two EIP actions, EIP10-SW07-3-(B), regarding environmentally-preferable purchasing, and EIP10-SW07-4-(B), regarding increased use of recycled-content products, were combined into one action item due to the overlap in the intent of each of these environmental actions. Early work on these actions included updating PMs that were in effect at that time.

Superseding these efforts, on July 17, 2009, Procedural Memorandum 12-21 went into effect, implementing the county's first Environmentally Preferable Purchasing Policy (EPP). The EPP is jointly administered by the Fairfax County Solid Waste Management Program and the Fairfax County Department of Purchasing and Supply Management (DPSM), and provides guidance to county employees making environmentally-responsible purchases of materials and services needed by the county. This policy will also be utilized by the Fairfax County Public Schools.

With the EPP in effect, DPSM no longer allows the purchase of copy paper with less than 30 percent recycled content. DPSM has also completed development of a web-based tool to sell excess, used and obsolete county inventory over the web. The web-based tool is named the Responsible Surplus Environmental Disposal (RSED) program. To date, the county has generated over $1,000,000 in revenue from the sale of used equipment through the RSED program in addition to allowing the equipment to be reused. The Solid Waste Management Program has sold several trucks using this technique and in FY 2011, generated $220,000 from selling used refuse collection trucks. It should be noted that the program has not yet been implemented by all county agencies.

During the next program year, DPSM plans to undertake the following two initiatives: include green cleaning products and standards in all County custodial contracts and introduce vendor take-back provisions (also known as producer responsibility) in County contracts as appropriate, to reduce disposal needs and costs, and increase the reuse and recovery of materials.

Resources

This action is currently being implemented by DPSM staff. DPSM initiated a pilot program with five County departments/divisions with full implementation underway starting in 2011. The program provides for online posting of excess property available for redistribution and online posting of surplus property available for sale. Continued support of this program is requested at a funding level of $15,000 annually.

EIP13-SW07-5(B). Remote HHW Collection Events

Description of Action

Fund five remote Household Hazardous Waste (HHW) collection events per year. The county currently has two permanent HHW collection sites.

Environmental Agenda Objectives Supported:

Solid Waste 7

Other Plans or Documents where this action appears or that it supports

Solid Waste Management Program Strategic Plan, (2006-2011)

Lead Agency:

DPWES-DSWDRR and DSWCR (collectively, the Solid Waste Management Program)

Status/Plans/Outcomes:

The county routinely receives requests for remote HHW collections. This project responds to such requests. Another positive outcome of remote collection sites is a further reduction in the amounts of toxicity from refuse being processed by the E/RRF. This in turn reduces the load on the facility's pollution control systems and ultimately results in less net pollution from the facility.

Resources:

The Solid Waste Management Program has been funded, through the EIP, for the past last two household hazardous waste collection events in calendar year 2009: one on June 13th and one on September 12th. No remote HHW events were held in 2010.

Funding in the amount $125,000 is needed for five of these events. This funding is used to pay for the services of a professional hazardous waste management company with the necessary permits and approvals to legally dispose of hazardous waste. A funding source for future Remote HHW events has not been identified.

EIP13-SW07-6(B). Develop Long-Term Plans to Manage Electronic Waste within Fairfax County and Disposal of County (and FCPS) Electronic Waste

Description of Action:

Opportunities to promote reuse/recycling of electronic waste within Fairfax County will be continued to the extent possible. The ultimate goal is to provide a permanent program where county residents can drop off their unwanted electronic waste so that it can be kept out of the county's waste stream. This action item is expanded to include environmentally responsible disposal of electronic waste generated by Fairfax County Government and Fairfax County Public Schools.

Environmental Agenda Objectives Supported:

Solid Waste 4

Other Plans or Documents where this action appears or that it supports:

Fairfax County's 20-year Solid Waste Management Plan
Solid Waste Management Program Strategic Plan (2006-2011)

Lead Agency:

DPWES-DSWDRR and DSWCR (collectively, the Solid Waste Management Program)

Status/Plans/Outcomes

The Solid Waste Management Program has been continuously asked to collect old computers and other electronic waste for recycling, with televisions recently added to these collections with the switchover to digital broadcasting. As public demand for this service has grown, so too has the need to allow for collection of electronic waste at all times of the year, rather than conducting outdoor collections in months only when the weather can be expected to be temperate.

To address this year-round need, the Solid Waste Management Program decided to accept electronics and televisions for recycling at the I-66 Transfer Station one Sunday per month. This service, called *Electric Sunday*, is provided at no charge to county residents, and in 2010, collected about 537 tons of electronics. Participation in these events has far exceeded anticipated levels, with costs directly linked to the number of residents using the program. *Electric Sunday* events are also held at the I-95 solid waste complex, to provide more convenient recycling opportunities for residents in the southern portion of Fairfax County.

Fairfax County staff annually generates over of 100,000 lbs of electronic waste and FCPS annually generates about 350,000 lbs. of electronic waste. Due to the quantity of electronic waste generated by the county and FCPS, both entities are required to comply with Federal and State hazardous waste management regulations for the disposal of said materials. Since electronic waste contains a variety of toxic compounds as well as valuable recyclable materials, the county has elected to use a contract developed by the Commonwealth of Virginia for recycling electronic waste, State contract: VA-100917-CR.

Recycling of electronic waste is managed through the contractor that is under state contract, Creative Recycling Systems (CRS). This contract specifies that collected wastes are managed according to the applicable environmental regulations, and that recyclable materials are recovered and recycled.

Resources:

Annual program costs for collecting and recycling residential electronic waste at about 11 Electric Sunday events are estimated to be approximately $100,000 per year. The third year of *Electric Sunday* events is in progress and this program is presently being funded by the Solid Waste Management Program.

Electronic waste generated by the county itself is being recycled and this program generates revenue and therefore does not require funding, at least for the present. The revenue generated through recycling electronic waste is tied to the commodities market and metals prices are presently generating moderate income. As commodity prices fluctuate, revenue will rise and fall and may not always cover the costs for recycling. If commodity prices fall and the recycler starts to charge for its services, funding from another source may be required.

EIP13-SW07-7(A). Develop A Toxics Reduction Campaign

Description of Action:

Opportunities to educate businesses to properly manage everyday products when disposed of within Fairfax County will be continued. The ultimate goal is to create a regional campaign about how to properly manage end-of-life fluorescent lamps, rechargeable batteries and obsolete electronics.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 2
Solid Waste 4

Other Plans or Documents where this action appears or that it supports:

Fairfax County's 20-year Solid Waste Management Plan
Solid Waste Management Program Strategic Plan (2006-2011)

Lead Agency:

DPWES-DSWDRR and DSWCR (collectively, the Solid Waste Management Program)

Status/Plans/Outcomes:

Fairfax County has worked with the Northern Virginia Regional Commission and its partners to create a website entitled www.Knowtoxics.com. The purpose of the website is to provide information and resources to businesses in Fairfax County about their obligation to properly dispose of or otherwise properly manage these materials when they have reached the end of their useful life. The website had been on line since 2006 and is updated periodically to ensure its accuracy and relevance. It has been an effective tool for governmental solid waste managers to use to assist in educating businesses about their environmental responsibilities.

Resources

Annual program costs will be approximately $10,000 per year. Funding sources have not yet been identified.

EIP13-SW08-1(B). Maximize Recovery of Energy from Landfill Gas (LFG) Resources

Description of Action

The county has two closed municipal solid waste (MSW) landfills, one each at the I-95 and I-66 solid waste management facilities, that generate landfill gas (LFG) as the MSW buried at these sites decays. LFG consists of approximately 50 percent methane, and can be used as a substitute for natural gas (following minimum treatment). The energy in LFG can also be recovered by powering engine-generators or other energy recovery technologies. This action continues the emphasis placed on maximizing the energy recovery potential from our LFG resources.

Environmental Agenda Objectives Supported:

Air Quality and Transportation 2
Solid Waste 4
Environmental Stewardship 6

Other Plans or Documents where this action appears or that it supports:

USEPA Landfill Methane Outreach Program (LMOP)

Lead Agency:

DPWES-DSWDRR and DSWCR (collectively, the Solid Waste Management Program)

Status/Plans/Outcomes:

In partnership with DWWM, the Solid Waste Management Program (SWMP) teamed with the DPWES-DWWM to use LFG from the closed I-95 landfill to incinerate sludge at the Noman Cole Waste Water Treatment Plant three miles away in Lorton. This project has been temporarily taken offline due to the reduced volume of LFG being generated by the landfill. A similar project at I-66 uses LFG from the closed I-66 landfill to heat the welding shop, truck wash and the Department of Vehicle Services' maintenance garage. The final phase of this work will be to complete the installation of a LFG space heat project to supplement heating needs at the new West Ox Bus Operations Center. The LFG space heat project at the West Ox Bus Operations Center is expected to be operational in the Fall of 2011.

Resources

$300,000 of EIP funds used for project design and construction cost. An additional $150k was requested and approved in the FY 2010 budget to investigate the feasibility to expand the project to the new West Ox Bus Operations Center. An additional $50k is needed to complete the Bus Operations Center expansion project and support start-up costs.

EIP13-SW08-2(B). Effluent Reuse at Covanta E/RRF from Noman Cole WWTP

Description of Action:

The Energy Resource Recovery Facility (E/RRF) uses between one and two million gallons (1.0-2.0 MGD) of potable water for process purposes (actual usage is dependent on climate, water chemistry, and plant operations). This project will reduce consumption of potable water at the E/RRF through the reuse of WWTP effluent, as a substitute, which will also allow WWTP to further reduce nutrients in their effluent discharge. This action will provide both facilities with cost savings.

Environmental Agenda Objectives Supported:

Solid Waste 4

Other Plans or Documents where this action appears or that it supports:

Solid Waste Management Program Strategic Plan (2006-2011)
Department of Public Works and Environmental Services Strategic Plan (2006-2011)

Lead Agency:

DWWM
DPWES-DSWDRR and DSWCR (collectively, the Solid Waste Management Program)

Status/Plans/Outcomes:

A preliminary design for the project has been completed and will consist of a pipeline and pumping station to convey effluent from Noman Cole WWTP to Covanta E/RRF. An engineering and construction contractor has been selected, and work to build the build the project is underway.

Resources:

The project is to be revenue-funded through 20-year water purchase agreements with Covanta and several other minor system users.

EIP13-SW09-1(B). Support Trash-Free Potomac Watershed Initiative

Description of Action:

This is a regional program, developed and supported by the Alice Ferguson Foundation, to reduce litter and increase recycling, and education and awareness of solid waste issues in the Potomac River Watershed with the goal of eliminating litter in the river by 2013.

Environmental Agenda Objectives Supported:

Water Quality 3
Solid Waste 4

Other Plans or Documents where this action appears or that it supports:

Potomac River Watershed Treaty (2006)
Department of Public Works and Environmental Services Strategic Plan (2006-2011)

Lead Agency:

DPWES-DSWDRR and DSWCR (collectively, the Solid Waste Management Program)

Status/Plans/Outcomes:

The Solid Waste Management Program has supported the Trash-Free Potomac Watershed Initiative through donations to the Alice Ferguson Foundation (AFF), a non-profit organization dedicated to protecting and improving the quality of the Potomac River watershed. The foundation holds annual summits to gather talented and visionary people to promote thinking and dialogue, which in turn identifies and recommends key steps to achieve the goal of a Trash-Free Potomac by 2013.

One of the primary venues to address the health of tributaries to the Potomac River is through the annual stream cleanups that are promoted by the AFF. This year, the Solid Waste Management Program assisted in the Potomac River Watershed cleanup in the following ways:

- Individual outreach efforts conducted by the Fairfax County Stormwater Program, the Fairfax County Park Authority, the Northern Virginia Soil & Water Conservation District and the Fairfax County Solid Waste Management Program were coordinated to augment and support each others' efforts. This included press releases, articles in *Newslink* and information on the county website that directed interested parties to the AFF website to learn how to participate in the annual Potomac River Watershed cleanup.

- The Solid Waste Management Program advertised the opportunity to be involved in stream cleanups in the *Washington Post,* the *Connection* newspapers and the *Times Community News*. About 88 stream cleanups were conducted in Fairfax County in April 2011 as part of the Potomac River Stream Cleanup.

- The Solid Waste Management Program developed bookmarks, printed and distributed to about 90,000 Fairfax County Public School students. The bookmark contained information about the annual Potomac River watershed cleanup and directed interested students to the AFF website for information on how to become involved. This was funded by the Fairfax County Solid Waste Management Program.

- The Alice Ferguson Foundation recently completed its Trash-Free Potomac River Watershed outreach campaign and is in the process of developing a county-wide strategy to use the professionally-prepared outreach campaign. An inter-agency team has been assembled to work on this anti-litter campaign. Details of the program were distributed to each of the Fairfax County Board of Supervisor's offices and some of the creative education pieces were used at the 2011 Fairfax County Earth Day/Arbor Day event held at the Government Center on April 11. The plan will be used in the county in FY 12 and 13.

Resources:

The Solid Waste Management Program donated $25,000 to the AFF in FY 2009. This donation came from the annual amount of funding directed to the Fairfax County Solid Waste Management Program from the Virginia Litter Prevention and Recycling Fund, managed and administered by the VA Litter Prevention and Recycling Fund Board and the VA Department of Environmental Quality. Other funding for the printing and the newspaper advertisements was provided by the Fairfax County Solid Waste Management Program, which amounted to about $5,000.

In fiscal 2012, the AFF has requested an additional $50,000 in funding from Fairfax County. A funding source has not been identified.

EIP13-SW09-2(B). Renewable Energy Demonstration Park

Description of Action:

This is an initial feasibility study to identify a set of modest renewable energy projects that can be demonstrated as technically and economically feasible. Projects are to be installed at the I-95 Landfill Complex as part of the continued reclamation project for the site.

Environmental Agenda Objectives Supported:

Solid Waste 4
Environmental Stewardship 6

Other Plans or Documents where this action appears or supports:

Solid Waste Management Program Strategic Plan (2006-2011)
Department of Public Works and Environmental Services Strategic Plan (2006-2011)

Lead Agency:

DPWES-DSWDRR and DSWCR (collectively, the Solid Waste Management Program)

Status/Plans/Outcomes:

Efforts have focused on identifying technologies suitable for simple, renewables-centered projects that can be constructed at the landfill within the next 6 to 12 months. Existing/completed renewable energy projects are considered Phase I of the Demonstration. The first new project, Phase II, consisted of the installation of solar water heaters in selected restrooms at the facility (the first has already been installed in the truck driver's restrooms, thanks to donated equipment and services from Covanta Energy). Phase II will continue to explore other solar heaters and solar-powered pond aerators, as budget allows. Later Phases may also include a windmill and photovoltaic solar panel array. Some very preliminary data collection has also begun under a broader project to examine beneficial property use, with the goal of identifying appropriate cost-reduction or revenue-generating projects that complement mandatory landfill post-closure care.

Resources:

Approximately $50,000 in equipment and staff time to install the Phase II projects (pond aerator and water heaters), with a significant supplementary donation from Covanta Fairfax, Inc. Funding in the amount of approximately $50,000 is needed to complete initial feasibility study and overall Park concept/design. Additional start-up funding may be necessary to complete specific projects in later phases.

EIP13-SW10-2(A). Single-Stream Recycling Toters for County Customers

Description of Action:

Industry experience and the professional literature demonstrate that bigger recycling rolling carts are needed by residents living in a modern integrated solid waste management system. Bigger recycling rolling carts will reduce collection costs, reduce air pollutant/GHG emissions from collections, and will otherwise reduce the environmental footprint of the county's operation.

Environmental Agenda Objectives Supported:

Solid Waste 4
Environmental Stewardship 6

Other Plans or Documents where this action appears or supports:

Board of Supervisors Environmental Agenda (2005)

Lead Agency:

DPWES-DSWDRR and DSWCR (collectively, the Solid Waste Management Program)

Status/Plans/Outcomes:

DPWES-DSWCR has purchased the carts. Approximately 20,000 carts were purchased in FY 2011 and distributed in the beginning of the calendar year. Revenue has already been allocated through the budgeting process to purchase the remaining carts and they will be distributed in the summer and fall of 2011.

Resources:

None requested at this time.

EIP13-SW10-1(C). Litter Management Efficiency Enhancements

Description of Action:

This is an initial technology demonstration to identify a suitable location and install a solar-powered self-compacting litter bin.

Environmental Agenda Objectives Supported:

Solid Waste 4
Environmental Stewardship 6

Other Plans or Documents where this action appears or supports:

Board of Supervisors Environmental Agenda (2005)

Lead Agency:

DPWES-DSWDRR and DSWCR (collectively, the Solid Waste Management Program)

Status/Plans/Outcomes:

The unit can be purchased immediately upon funding. Initial research into a suitable demonstration site for the unit suggests the new Lorton Arts Foundation or the soon-to-be-completed equestrian center, also in Lorton.

Resources:

Approximately $5,000 in equipment and staff time to install the first unit.

EIP13-PT07-08(A). Interpretive Signs along FCPA Trail System

This project has been deleted and is covered in EIP13-ES08-01(B) Education Outreach Programs and Activities.

EIP13-PT07-03(B). Pedestrian Improvements in the Four Year Transportation Plan

Description of Action

The Fairfax County Board of Supervisors' (BOS) Second Four-Year Transportation Program for FY 2008 through FY 2011 provides funding of $15 million for pedestrian improvements.

Environmental Agenda Objectives Supported:

Parks, Trails and Open Space 3
Air Quality & Transportation 1
Growth & Land Use 7

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Board of Supervisors Four Year Transportation Plan

Lead Agency:

DOT

Status/Plans/Outcomes

Underway

As part if budget reductions in FY 2010, the trails planner position in the Department of Planning and Zoning was eliminated. As a result, the EIP project dedicated to trails inventory and planning has been deleted (PT07-05 Trails Inventory and Planning). Funding for trails inventory and planning may be pursued in the future as part of this action.

Resources

$15,000,000 funded
Approximately $15 million for pedestrian improvements throughout the county as provided in BOS Second Four-Year Transportation Program. Actual expenditures on yearly basis undetermined; approximately $15 million total available through FY 2012. BOS Second Four-Year Transportation Program provides necessary funding to accomplish the future plans noted above.

EIP13–PT07-06(B). Upgrades for the Cross County Trail

Description of Action

After six (6) years of work, the Cross County Trail (CCT) was completed in December 2005. The trail is more than 41 miles long, stretching from the Potomac River at Great Falls Park to the Occoquan River and passing through all nine magisterial districts. The trail forms a north-south trail spine for county trail users.

The planned CCT route adjacent to the Lorton Redevelopment Area was completed by the developer of Spring Hill and opened this year. The Park Authority has also accomplished several small improvements. A new fiberglass pedestrian bridge was added in the Sully District and two sections of trail in the Difficult Run Stream Valley Park were stabilized. Improvements to the trail underneath the Dulles Toll Road were designed and funded, and construction is scheduled to begin this coming year as soon as the Dulles Rail construction project in that area is completed. Construction of a new connector trail in the Eakin Mantua area of the Providence district will take place this coming year. Other CCT connectors in the Providence, Mason, and Braddock districts are in the planning stages.

Environmental Agenda Objectives Supported:

Park Trails and Open Space 3: Air Quality and Transportation 1; Growth & Land Use 7

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan

Lead Agency:

FCPA

Status/Plans/Outcomes

Underway

Resources

In future years, additional funding in the amount of $2,950,000 will be needed for improvements to the existing trail. These improvements will include re-routed sections, additional and improved stream crossings, improved and relocated road crossings including the at-grade crossing at Route 7, additional signs to identify trail connections, rest stop locations, drinking water sources, etc., and additional upgrades to trail surfacing. Funding sources for this additional

amount have not yet been identified, but could include grant funds, Park Authority bond funding, and general funds.

EIP13-PT07-7(B). Park Authority Trail System

Description of Action

The Park Authority trail system continues to be developed through the park bond program, developer proffers, and volunteer efforts. Trail plans are underway for Laurel Hill and Sully Woodlands where the complexity and breadth of the land and variety of uses require careful planning and coordination. A trail plan for Lake Fairfax Park was completed and Phase 1, which included two miles of new trail and two pedestrian bridges, was funded and constructed. A Memorandum of Agreement was signed by a local user group to help maintain new and existing trails at the park. Trail projects in Carney Park, Spring Hill Park, and Pohick Stream Valley Park were constructed in the past year. A section of the Cross County Trail in Difficult Run was stabilized and a pedestrian bridge in the Sully district was added. Badly needed improvements to the area underneath the Dulles Toll Road were approved and will be completed this year. A project connecting commuters to the Burke Station VRE completed the design phase and will go to construction in the coming year. The Trail Development Strategy plan was used to select a set of 14 trail projects for funding using park bonds. Project scopes have been approved for six of these projects.

Environmental Agenda Objectives Supported:

Parks Trails, and Open Space 3; Air Quality and Transportation 1; Growth & Land Use 7

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Great Parks, Great Communities Plan

Lead Agency:

FCPA

Status/Plans/Outcomes

Continue to implement the countywide trails plan in stream valley parks and within local-serving and other managed parks. Connect parks via trails to population centers and other trails in the trail network.

Resources

Funded: $5,000,000 -2006 Park Bond,
$1,482,000 – 2008 Park Bond
$1,268,000 – 2007 Transportation Bond
$440,000 – 2010 Federal Transportation Enhancement Grant
Funds Needed: Approximately $48 million

$5 million for trails was included in the interim park bond that was approved in November 2006. This money was used to fund upgrades to the CCT, projects in Laurel Hill and Cub Run Stream Valley, and other smaller projects throughout the county. The 2007 Transportation Bond funds are being used to build a commuter connection to a VRE station in Pohick Stream Valley, while the 2008 Park Bond funds will be used to fund a number of smaller projects. A federal transportation enhancement grant for $440,000 was approved for Phase 1 of an extension of the Burke Station VRE project and an application was submitted for another grant of $395,240 for Phase 2.

An additional 48 miles of trail are needed in the park system during the next seven years. These trails will be developed with a combination of county funds, bond funds, volunteer efforts, and grant funding. At an average cost of $1 million per mile, $48 million will be needed to implement this trail program to its fullest extent. Park Authority trails form the main off-road countywide trail system. It is essential to continue to develop these trails at a quick pace to attempt to meet the desire for trails as expressed in the needs assessment.

EIP13-PT07-09(B). FCPA Urban Parks

Description of Action

The Park Authority has an ongoing program to acquire new park lands and develop/redevelop park sites based on demonstrated need through the Needs Assessment evaluation process. Designation of publicly accessible urban parks that are privately owned is also facilitated by the Park Authority through review of development applications. Urban Parks are a subset of local-serving parkland of which there is a deficiency across the county, in particular in many of the urbanizing areas. A collaborative effort to create an Urban Park Framework that includes service level standards, design element guidance and a park typology was forged between the Park Authority, Department of Planning and Zoning and Office of Commercial Revitalization and Reinvestment.

Diminishing land availability and an emphasis on "town center" and "transit oriented" development argues for the provision of smaller, publicly accessible open space areas that are integrated into compact new developments with higher intensities. More urban development concentrates more residents in integrated, compact locations without private yards. Therefore, the need for public outdoor open space and recreation facilities increases.

Some of the park acquisitions currently under consideration would qualify as urban parks based on their size (less than two acres) and location (in densely developed areas). Most, however, will be dedicated and perhaps built by private developers who proffer urban park space through rezonings. For instance, an urban park was recently completed in the Merrifield Town Center that was dedicated to the Park Authority as a complete turnkey facility. Ossian Hall Park in Annandale is an example of how the Park Authority has incorporated urban park features, such as plazas and performance space, into an existing community park located in a changing and urbanizing area of the county. As shown in these examples, strong public/private partnerships are necessary to provide adequate facilities for urbanizing areas.

There is a need to shift the emphasis from land acquisition or dedication of parkland in urban areas to a more functional and integrated design of public open space within development plans. These public parks should be accessible to everyone, and can either be owned by the developer or the Park Authority, depending upon site considerations. Open spaces should not be considered "left over" areas deemed unusable for any other purpose – rather, they should be well-designed, integral pieces of the urban fabric. There may be opportunities to provide public open space near transit hubs or other civic uses or centers (such as libraries or other public facilities), providing multiple services in one location. In order to provide a community with adequate gathering spaces for various activities, public parks should vary in size and programmatic elements to create distinct urban experiences. Programmatic elements may include farmer's markets, a rotation of public art displays, or international street fairs. With an area as culturally diverse as Fairfax County, there are many opportunities to use public spaces as a showcase for the multi-faceted characteristics of the community.

Environmental Agenda Objectives Supported:

Parks Trails, and Open Space 1, 2

Other Plans or Documents where this action appears or that it supports:
Comprehensive Plan
Great Parks, Great Communities Plan
Park Policy Manual
Urban Parks Framework

Lead Agency:

FCPA

Status/Plans/Outcomes
Ongoing

Two significant acquisitions were made with funding from the 2002 and 2004 Bonds that will serve county urban areas, one in Baileys Crossroads (Hogge property) and one in Merrifield (Merrilee Park). A proffered urban park, Merrifield Park, was dedicated to the Park Authority at the end of 2008. Arrowbrook Park, in the Herndon-Reston area, is complete as a turnkey proffered park and will anchor a future transit oriented development with a 26 acre urban recreation-focused park with a lit synthetic turf rectangle field, pavilion, playgrounds, tennis and bocce courts, trails and a passive wetlands park with boardwalk, gazebo and interpretive features. The Park Authority continues to pursue acquisition in urban areas as funding is made available, through bond dollars and proffers in the land development process and through a variety of partnerships in Tysons Corner, transit-oriented development (TOD) areas, and revitalization areas.

In the spring of 2008, an interagency planning team representing the Park Authority, the Department of Planning and Zoning and the Office of Community Revitalization and Reinvestment convened to gain a common understanding of the function and design of urban parks as they apply in Fairfax County, particularly in Tysons Corner and the county's revitalization areas. The team developed an Urban Parks Framework that was adopted by the Park Authority Board after receiving wide stakeholder acclaim.

The Framework document is organized in five sections: Background, Urban Park Design Elements, Urban Park Types with photos and examples, Supporting Features, and Implementation Strategies. Four Urban Park Types are identified, including Pocket Parks, Civic Plazas, Common Greens, and Recreation-Focused Urban Parks. This document will serve to clarify expectations for developers, county staff and community decision makers to ensure that new urban developments will provide for park and recreation needs in the county's growth areas.

The Urban Parks Framework is being used to plan for and develop urban parks in Fairfax County's urbanizing centers. The Urban Parks Framework has been incorporated into the Comprehensive Plan for Tysons Corner, Annandale and Baileys Crossroads. It is currently being incorporated into the Reston Land Use Study that is underway. In all these plans, the Plan text acknowledges that parks are an essential element in transforming these commercial areas and extensive guidance has been included on how urban parks should be integrated with new

development. Implementing planned urban parks in Tysons is actively underway through the review of redevelopment applications and more detailed planning and design. Major elements of the Urban Parks Framework will be incorporated into the Tysons Corner Urban Design Guidelines Document that is currently under development.

As a result of staff better understanding urban parks and how they should be integrated into Tysons and other emerging mixed use centers in the county, urban parkland service level standards were adopted by the Park Authority Board. These approved urban parkland standards equal 1.5 acre per 1,000 population plus 1 acre per 10,000 employees. These standards support county policy language concerning urban parks.
It is challenging to acquire and develop these types of parks due to the high cost of land in urban and other mixed use areas and low land availability. It can also be more expensive to develop, maintain and sustain urban parks as the intensity of use requires higher quality landscaping and hard surfacing and a concentration of facilities. The Park Authority is actively pursuing opportunities to leverage public funding for new public urban parks and to work cooperatively with other county agencies and private developers. With many active rezoning cases in Tysons Corner there are numerous opportunities to negotiate for developer-provided urban parks.

Resources

Future Cost: $10,000,000+ to acquire and develop 2-3 urban parks in urban areas or $24,000,000 to acquire and develop 1 signature 3.5 acre central park in Tysons.

$10,000,000 will develop 2 - 3 urban parks in locations to be determined or $24,000,000 will develop one signature park in the Tysons Central 7 District south of Route 7. Two significant acquisitions were made with funding from the 2004 Bond that will serve county urban areas, one in Baileys Crossroads and one in Merrifield. The Park Authority has funding available from the 2008 Park Bond for land acquisitions across the county. With the cost of acquiring park land in these urban areas currently ranging from $0.5 - $1.0 million per acre, there is no adequate source of funding available. Privately owned urban parks established as part of the land development process with public access are an effective alternative to meet a large portion of this need.

EIP13-PT07-10(B). Parks and Recreation Needs Assessment Process

Description of Action
A parks and recreation needs assessment provides a 10-year capital improvement plan for new park facilities, renovations and land acquisition that seek to meet the park and recreation needs of Fairfax County residents. The plan serves as a decision-making guide to ensure direct projects included in the bonds are consistent with citizen needs. A 2003 cost estimate for capital improvements needed through 2013 was $376 million, since increased to $435 million. Implementation of the plan is primarily through general obligation bonds. Park bonds approved since 2004 total $155 million. Park bonds generally occur every four years, however, no park bonds are currently scheduled in the county's 5-year capital improvement budget.

Environmental Agenda Objectives Supported:
Parks Trails, and Open Space 1, 2, 4, 5

Other Plans or Documents where this action appears or that it supports:
Comprehensive Plan
FCPA Policy Manual
FCPA Strategic Plan
Great Parks, Great Communities Plan

Lead Agency:
FCPA

Status/Plans/Outcomes
Underway

Implementation of the needs assessment is ongoing through the capital improvement program, Comprehensive Plan amendments, development process, and long range park planning.

In order to utilize the Great Parks, Great Communities Plan and the updated census information that will be released in 2011 in the next needs assessment update, the next needs assessment process will likely occur in FY 2012/13.

Resources
Cost: TBD
Hiring a consultant for the 2002-2004 needs assessment cost approximately $300,000. The update to the needs assessment is planned in FY 2012, at which time a resource cost will be assessed. It is anticipated that the cost to hire a consultant may be similar to the last needs assessment, $300,000.

The needs assessment is the primary tool used by the of the Park Authority to recognize park land and facility deficiency in the county and is the first step in planning the location of facilities

in new or existing parks. The implementation of actions recommended in the needs assessment is addressed in PT07-11(B).

EIP13-PT07-11(B). Parks and Recreation Needs Assessment Implementation

Description of Action

The Park Authority has conducted a comprehensive needs assessment to guide park planning and development. The final product of the Park Authority Needs Assessment Project was the development of a 10-Year Needs-Based Capital Improvement Plan. This Plan outlines the cost of meeting the county's park and recreation deficiencies presently and projected through 2013. The CIP has three cost areas: Land Acquisition, New Development, and Renovation, and breaks the timeframe into Near Term, Intermediate Term and Long Term. The Plan is implemented through the annual Capital Improvement Program and funded through Park Bonds, donations, proffers and other sources. An update to the Needs Assessment is anticipated to begin in late 2011.

Environmental Agenda Objectives Supported:

Parks Trails, and Open Space 1, 2, 4, 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
2004 Park and Recreation Needs Assessment
FCPA Strategic Plan
Great Parks, Great Communities Plan
Fairfax County Capital Improvement Program

Lead Agency:

FCPA

Status/Plans/Outcomes

Underway

The 2004 Park Authority Needs Assessment identified $377,000,000 needed through 2013 for land acquisition, facility renovation, and new capital improvements. Funding for a portion of these needs was satisfied through the acquisition and build out of the current and upcoming Capital Improvement projects funded by the approved 2004, 2006 and 2008 Park Bonds totaling $155 million.

Resources

The approved 2004, 2006 and 2008 Park Bonds total $155 million and will meet a portion of the funding needs for additional land acquisition, stewardship and renovation projects.

Intermediate Term (2008-2010) needs identified in the 2004 Needs Assessment (not including Land Acquisition) total $93,258,403 of the $377,000,000 needed through 2013. Park bonds generally occur ever four years, however, no park bonds are currently scheduled in the county's 5-year Capital Improvement Budget.

Land Acquisition is addressed in PT07-12(B).

EIP13-PT07-12(B). Parkland Acquisition

Description of Action

The Park Authority continually looks for ways to expand and enhance park land and open space for newer and better active recreation opportunities, the stewardship of open space and our natural resources, and the preservation of cultural and archeological resources. These goals can be accomplished with the acquisition of new parkland, conservation easements to protect critical resources and open space, securing development rights for park development projects, and acquisition of trail easements to expand the county's 41-mile Cross County Trail (CCT). All of these endeavors are part of the ongoing identification and pursuit of new acquisition opportunities to provide a comprehensive and robust park system for the citizens of Fairfax County. In 2005 the Board of Supervisors (BOS) challenged the Park Authority to continue to acquire land so that 10% of the county land mass in county is parkland. Current Park Authority land holdings account for 9.0% of the county land mass, with approximately 2,700 acres needed to reach the 10% target.

Environmental Agenda Objectives Supported:

Parks Trails, and Open Space 1, 2, 3, 4, 5, and 6

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Great Parks, Great Communities Plan

Lead Agency:

FCPA

Status/Plans/Outcomes

Underway

The Park Authority will continue to identify and acquire land suitable for public open space through a variety of methods. This will include active pursuit of: purchases of private land, purchase of trail and conservation easements on occupied land, transfers of open space land from the county and other organizations, dedications of land through the land development process, and donations of land and funding from both private entities and public organizations.

The adopted Land Acquisition Criteria and the Needs Assessment will continue to guide the planning of the land acquisition program where open space and developable land for active recreational uses is needed most throughout the county. As critical land acquisition decisions arise from unsolicited sources (offers of bargain land sales, targeted properties appear on the market for sale), the Park Authority will evaluate proposals and consider options to alter its current program course to take advantage of such opportunities.

Resources

Funded: $37,200,000 (from 2004, 2006 and 2008 Bonds and Open Space Fund)
Funding Needed: $57,200,000 (identified in the Park Authority's 2004 Needs Assessment).

The cost of resources needed to fully accomplish this objective has not yet been identified, as the price of land varies significantly throughout the county. While some acquisitions are made at no cost to the Park Authority, such as a transfer of county land or dedication of land through proffers, the properties that are most important to fill deficiencies in open space countywide must be purchased. With the rapidly dwindling availability of open space in the county and the volatility of the cost of land, adequate land acquisition funding is needed for the Park Authority to acquire open space. Although the recent downturn in the housing market has created opportunities to purchase land at a lower cost, the economic downturn has also limited private development that dedicates land for parks and budget constraints will limit continued funding for fee simple land acquisition in the long term. Continuation of the Board of Supervisor's transfer of excess county owned property to the Park Authority for open space and park usage can offset the need to purchase land fee simple in order to meet the 10% parkland goal set by the BOS.

EIP13-PT07-13(B). Open Space Easements/NVCT Partnership

Description of Action

Through the Open Space Easements Program coordinated by the Department of Planning and Zoning, donation or purchase of conservation easements has been encouraged for a number of purposes, including open space, historic preservation and trails. The public is encouraged to work with any qualified non-profit land trust, or with the Fairfax County Park Authority or the Northern Virginia Regional Park Authority.

There are several non-profit land trusts that work locally, including the Northern Virginia Conservation Trust (NVCT) and the Potomac Conservancy. The county entered into a public-private partnership with NVCT in FY 2001. Through this partnership, NVCT has obtained 35 conservation easements (in one case, four easements are on a contiguous set of parcels, making one large area), nine fee properties and three assisted projects protecting over 685 acres in Fairfax County. NVCT estimates a value of over $50 million in protection through this program. The Potomac Conservancy seeks easements to protect the Potomac River in four states and the District of Columbia, and has six easements in Northern Virginia (Arlington and Fairfax Counties).

NVCT proactively identifies properties with high natural resource or historical value and promotes donations of easements or fee simple interests in the land. Using the Fairfax County Park Authority's Green Infrastructure Model and the Inventory of Historic Sites, the Trust contacts landowners of significant properties and encourages donation of conservation easements or fee simple interest. By using federal and state tax and local incentives NVCT has been able to facilitate the donation of over $50 million worth of conservation lands in Fairfax County.

Environmental Agenda Objectives Supported:

Parks Trails, and Open Space 4 and 6
Great Parks, Great Communities Plan

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan

Lead Agencies:

DPZ/FCPA/NVCT

Status/Plans/Outcomes

Underway

Resources

Cost: $227,753 (county contribution for FY 2012)
Future Cost: $227,753 + CPI (annual cost)

EIP13-PT07-14(B). Park Authority Conservation Easement Initiatives

Description of Action

Park Authority conservation easement initiatives are utilized for preservation of open space, historic and natural resources, and to facilitate trail connections throughout the County.

The Fairfax County Park Authority (FCPA) is a leader in conservation and preservation of open space and is dedicated to protecting natural, cultural and historic resources in Fairfax County. The FCPA and the Board of Supervisors (BOS) have acquired a 41-acre conservation easement and purchase options on the historic property known as "Salona." The Salona homestead and grounds comprise 7.8 acres within the 52.4 acre site, and is already protected in perpetuity by a 1971 easement to the BOS. Salona derives its name from the circa 1805 homestead associated with this site. Salona has significant cultural history of local, state and national importance that spans centuries. This was the home of Henry "Light Horse Harry" Lee, a Revolutionary War hero; it was to Salona that Dolley Madison fled in 1814 when British troops were burning the White House; and during the Civil War, Salona served as a part of the headquarters for the Union Army. The Northern Virginia Conservation Trust has the role of easement enforcement, and collaborated on the acquisition of the easement. Several other key acquisitions of conservation easements include the Elklick Woodland Natural Area Preserve, which protected over 200 acres of rare oak hickory forest from development, and the preservation of Oak Hill, the last remaining residence with a connection to the Fitzhugh family (the Fitzhugh's owned the largest land grant in Fairfax County in the 1700's). In addition, the Park Authority completed the Cross County Trail (CCT), using acquisitions of open space, conservation easements and trail easements as mechanisms to complete the CCT.

The Park Authority has developed the Green Infrastructure Model for targeting land acquisition opportunities that have significant natural or cultural resources. The Green Infrastructure Model, along with the recently completed Park Authority Needs Assessment, has provided a blueprint for acquisition of parkland and preservation of open space, significant resources, and trail corridors in the county.

Environmental Agenda Objectives Supported:

Parks Trails, and Open Space 1, 2, 4 and 5
Great Parks, Great Communities Plan

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Park Authority Strategic Plan
Park Authority Policy Manual
Park Authority Natural Resource Management Plan
Park Authority Cultural Resource Management Plan

Lead Agency:

FCPA

Status/Plans/Outcomes

Ongoing

The Park Authority will continue to utilize the Green Infrastructure Model and Needs Assessment tools to cost effectively acquire additional open space, conservation easements and trail connections. Refinement of the Green Infrastructure Model and the implementation of the Agency Natural Resource Management Plan, which lays out strategies to evaluate natural resources on properties prior to acquisition, will allow the Park Authority to make more deliberate and effective decision in regards to open space protection through acquisitions and easements. With the rapidly dwindling availability of open space in the county, and continually rising cost of land, conservation easements will become a much more heavily relied upon tool for the Park Authority to protect open space.

Resources

Funded: $5,400,000 (remaining to date from 2008 bond for land acquisition)
Funding Needed: $10,000,000 would help establish a more aggressive Park Authority conservation easement program.

EIP13-PT07-17(B). Park Authority Natural Resource Management Plan Implementation--Encroachment Enforcement

Description of Action

The Park Authority has developed an Agency-wide Natural Resource Management Plan (NRMP), which was approved by the Park Authority Board in January 2004. The plan outlines strategies, actions and policy changes needed to appropriately plan, develop and manage parkland. The first phase of implementation of the Natural Resource Management Plan is focused on strategies that do not require additional resources such as reviewing policies and procedures, building partnerships and expanding education. To continue to implement this plan, funding is needed. In addition, in order to adequately manage and develop our parks, the Park Authority continues to stretch limited resources in the areas of acquisition, planning, development and maintenance.

The Park Authority has tens of thousands of park neighbors and these neighbors can have tremendous impacts on park resources through intentional and unintentional encroachments. The Park Authority addresses encroachment as they can with existing resources and has produced a brochure to educate park neighbors which is already in its second printing. This enhanced program will focus on encroachment detection, enforcement and elimination on parkland. A dedicated encroachment team will not only mitigate impacts from current encroachments, but also educate residents on how to be good park neighbors.

Environmental Agenda Objectives Supported:

Parks Trails, and Open Space 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Park Authority Strategic Plan
Park Authority Policy Manual
Park Authority Natural Resource Management Plan

Lead Agency:

FCPA

Status/Plans/Outcomes

Due to not having the focused resources to appropriately manage parkland encroachments there remains significant numbers of encroachments and limited ability to enforce the agency's encroachment policy. This program would allow focused encroachment detection, notification, enforcement and elimination to occur on all parklands with particular emphasis on 'unstaffed' parklands, such as stream valleys and new undeveloped parklands.

Resources

Funding Needed: $250,000 (annual cost)
While this effort requires dedicated recurring funding and staff position/s to be fully implemented, significant progress can be made with one-time funding.

EIP13-PT08-01(B). Park Natural Resource Management

Description of Action

The Park Authority has developed an agency-wide Natural Resource Management Plan (NRMP), which was approved by the Park Authority Board in January 2004 and renewed in 2009. The plan outlines strategies, actions and policy changes needed to appropriately plan, develop and manage parkland. Fiscal Year 2013 will mark the 9th year of plan implementation.

We are now at a critical stage in which we can not continue to make significant progress without additional staff and funding.

Our natural areas at risk

- Invasive plants are crowding out native trees and taking over our forests.
- Deer are devouring young trees, leaving the future of the forests at risk.
- A lack of natural disturbance (such as fire) has left our forests unhealthy and stocked with too much fuel.
- If we do not act, our forests may not continue to regenerate at all and certainly will not be healthy, functioning systems.
- Without these functional systems our air quality will continue to degrade.
- Our streams will also continue to degrade. As the stewards of many of the county's stream valleys which ultimately protect the Chesapeake Bay we must act to protect and maintain these natural systems.

Environmental Agenda Objectives Supported:

Parks Trails, and Open Space 1, 2, 3, 4, 5 and 6
Environmental Stewardship1, 2, 3 and 4

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Great Parks, Great Communities Plan
Park Authority Strategic Plan
Park Authority Policy Manual
Park Authority Natural Resource Management Plan

Lead Agency:

Park Authority

Status/Plans/Outcomes

- As the steward of many of the county's natural areas and an educator, the Park Authority must take the lead in natural resource management.
- The Park Authority's Natural Resource Management Plan has been in place and under implementation for several years. The plan, when implemented, will strongly support the Board's 20-Year Environmental Vision.
- In anticipation of the plan, in 2003, the Natural Resource Group was restructured and one position was added from within.
- Eight years into implementation (as of FY 2012), we are doing everything we can – making changes to policy and practices, educating staff and residents and asking all Fairfax County Park Authority staff to help where they can.

The intent of the Natural Resource Management Plan – to manage natural resources - can not occur without additional funding and staff.

Resources

To manage all of our park natural areas, it is estimated that $8 million per year and dozens of staff are needed (this includes $3.5 million for natural resource management as well as $4.5 million per year for an invasive plant removal program). A phased approach will allow us to manage the natural resources on at least 10 percent of our parkland. We'll use this first phase to learn how best to set up the program for all parkland.

Phase 1 cost: $650,000 recurring need includes six staff positions in technical and field disciplines, costs for consultant services, equipment and operating costs.

In addition, demonstration projects for forest assessment and management could be conducted in the Sully Woodlands park assemblage per the following:
Minimal Funding (one park): $200,000 to $250,000
Moderate Funding (several parks): $500,000 to $750,000
Full Funding (much of the Sully Woodlands assemblage): $1.5 to $2 million

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EIP13-PT08-03(B). Park Information Systems

Description of Action

The goal of this project is to develop a framework for modeling ecologically significant resources to inform land use and development decisions in Fairfax County. If implemented, the model could help both the Park Authority and the county make more informed land use decisions.

While there are many robust models completed by local, regional and national agencies, many are not applicable to Fairfax County because it is urbanized and traditional conservation biology principles can not readily be applied to the county. In December 2009, a consultant report was completed to include recommendations on data and modeling options for Fairfax County. The Park Authority led this project in collaboration with the Department of Information Technology, the Department of Planning and Zoning, the Department of Public Works and Environmental Services and others.

Environmental Agenda Objectives Supported:

Parks Trails, and Open Space 4, 5 and 6

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Great Parks, Great Communities Plan
Park Authority Strategic Plan
Park Authority Policy Manual
Park Authority Natural Resource Management Plan

Lead Agency:

Park Authority

Status/Plans/Outcomes

The project which was conducted by PlanGraphics, Inc. in partnership with George Mason University (GMU) was completed in December 2009. The final product includes an assessment of other green infrastructure and natural area models, evaluation of existing data, and recommendations for model options including costs of development and data acquisition. Development of the model for the entire county will be considered based upon results of this study and availability of funding. The ideal model would cost up to $2 million and requires dedicated technical staff and funding for model and data maintenance.

Comparison of Three Primary Model Development Options

CATEGORY	ENTRY (Updated POC)	INTERMEDIATE (Model Builder)	ADVANCED (ArcObjects)
Total Costs			
Total Personnel Time	8.0 person-months	11.5 person-months	16.5 person-months
Total Personnel Cost	$26,000	$76,000	$167,000
Total Data Cost	n/a	~ $750,000 (does not include maintenance)	~ $1,500,000 (does not include maintenance)
Advantages			
	• Ease of use • Known quantity	• Terrestrial, aquatic, and priority components • More data incorporated • More robust results • Enhanced data quality	• Terrestrial, aquatic, and priority components • Cost component in priority analysis • Scenario generation • Ease of use
Disadvantages			
	• No aquatic component • Does not Include treeless natural areas (such as meadows, thickets, old fields, and balds) • No priorities (threats, opportunities) • Need experts to assign weights • Poor data resolution	• Need experts to assign weights • Personnel requirements • Incomplete data and poor data quality (accuracy, resolution, currentness) • Potential for misinterpretation/misuse of results • Data development and maintenance cost	• High cost of development • Data development and maintenance cost
Potential Uses			
	• Highlight the location of natural areas • Rank natural areas by importance regarding number of assets	• Locate and prioritize natural resources, both terrestrial and aquatic • Identify and rank threats • Indirectly identify potential restoration areas • Direct identification of areas for restoration if a restoration module is developed	• Locate and prioritize natural resources, both terrestrial and aquatic • Identify and rank threats • Evaluate and compare protection targets based on conservation benefit and land value • Indirectly identify potential restoration areas • Direct identification of areas for restoration if a restoration module is developed
Potential Misuses			
	• The assumption the model identifies ALL significant natural resources • Planning potential park uses at individual sites • Does not include aquatic resources • Does not include treeless natural areas (such as meadows, thickets, old fields, and balds)	• Results are dependent on scope and quality of the data • Potential error in model adjustment	• Misconception that this is the only solution and that the results are not up for interpretation • Potential error in modifying application parameters

Resources

$180,000 funded by the Board of Supervisors
~$2,000,000 and dedicated technical staff needed to develop, test and implement the model.

EIP12-PT09-01(B). Great Parks, Great Communities

Note: this action was previously titled Creation of District-wide Park Plans

Description of Action

The Fairfax County Park Authority initiated the **Great Parks, Great Communities** planning project in February 2007 to develop a comprehensive park system plan to guide park planning in Fairfax County through the year 2020. This effort addresses the need for a comprehensive and integrated approach to planning for parkland acquisition, resource protection and development activities over a ten year period. The comprehensive Great Parks, Great Communities (GPGC) planning process occurred in four phases over four years: Phase I involved the creation of Existing Conditions Reports for each of the county's 14 Planning Districts; Phase II consisted of extensive public outreach, issue identification and analysis; Phase III included report development and internal review and Phase IV, currently under way, involves public review, plan revision and Park Authority Board plan adoption.

The Great Parks, Great Communities project objectives include the following:

- Collect and analyze data relevant to park and recreation resources in Fairfax County to better understand the park system within a local context;
- Work with the community to ascertain public attitudes and preferences with regard to the existing park system; identify issues and develop strategies for sustaining the resources of the park system; and identify changes needed to meet future needs, preferences and demographic shifts:
- Tie together previously established Park Authority objectives, policies, standards, and priorities for the protection and stewardship of natural and cultural resources and the development and management of recreation resources; and
- Create a comprehensive long range park system plan that provides strategies and implementation guidance for balancing the park system to meet existing and future park needs; the plan will also serve to guide park planning efforts at the individual park master plan level.

The GPGC Plan is built around eight themes identified during Phase II public outreach and analysis activities. Those eight themes are: Connectivity, Community Building, Service Delivery, Facility Reinvestment, Land Acquisition, Resource Interpretation, Cultural Resource Stewardship, and Natural Resource Stewardship. The Plan consists of 15 total chapters. The first Countywide chapter provides park system background, planning process overview, public input summary, and description of countywide themes and objectives. The Countywide chapter is followed by 14 District chapters that provide existing conditions information and thematic recommendations specific to the local park system.

During Phase IV activities in 2010, the GPGC team completed draft Countywide and District chapters and published the drafts to the project web site, allowing public review and comment. During the 10-week public comment period staff collected resident input at four public meetings,

citizen group meetings, by phone, by electronic and postal mail, and through the project web site. Close to 300 public comments were received and each was acknowledged upon receipt.

Environmental Agenda Objectives Supported:
Parks Trails and Open Space 2 and 3; Growth & Land Use 2, 4, & 7; Air Quality and Transportation 1

Other Plans or Documents where this action appears or that it supports:
Comprehensive Plan
Great Parks, Great Communities Plan
Park Authority Needs Assessment
Watershed Plans
Park Authority Strategic Plan
Natural Resource Management Plan
Cultural Resource Management Plan
Trails Strategy Plan

Lead Agency:
FCPA

Status/Plans/Outcomes
Underway

Close to 300 public comments were received during the public comment period. Staff processed all comments, developed responses, and recommended changes to the GPGC Plan, as appropriate.

For those public comments that fall within the scope of the GPGC Plan, staff developed responses and recommended specific changes and edits to the appropriate plan chapters. For comments that are outside of the plan's scope (e.g., regarding operations or programs), planning staff is coordinating internally with operational divisions to develop appropriate responses.

Following comment processing, Countywide and District chapters were revised, responses to public comments published and an updated GPGC plan was brought to the Park Authority Board for adoption (June 2011). The GPGC plan will then be used to update the County Comprehensive Plan Area Plans park and recreation recommendations and will guide park planning and resource decision making at individual park sites.

Resources
Using available FCPA staff time currently. As Comprehensive Plan amendment occurs, DPZ staff time will also be used.

EIP13-PT09-03(B). Synthetic Turf Athletic Fields

Description of Action

In 2004, the FCPA developed its first synthetic athletic field turf conversion at Lewinsville Park #2, in partnership with a community user group. In 2005, the FCPA converted and lighted E.C. Lawrence Park #2. In 2006 Mason District Park #4 and Wakefield Park #5 underwent conversions utilizing the Synthetic Turf Field Development Program (STFDP), a matching fund type effort. In the summer of 2007, the conversion of Poplar Tree Park #3 & #4; South Run Park #5 & #6 and Carl Sandburg MS were completed.. The phase one development of Patriot Park which included the construction of a synthetic turf field and low impact stormwater management facilities was completed in the fall of 2007. Synthetic turf conversion projects completed in 2008 include Bryant MS; Franconia Park #4; Spring Hill Park #2 & #3 and a 60' diamond field at Nottoway Park #5. Projects completed in 2009 include the conversion of Lee District Park field #4, Greenbriar Park field #5 and Bailey's ES field #1. Synthetic turf conversion projects for 2010 included field #4 at Pine Ridge Park, field #1 at Linway Terrace, field #1 at Arrowbrook Center and a new rectangular synthetic turf field at Ossian Hall Park. Upcoming synthetic turf projects for 2011-2012 include the conversion of field #7 at Spring Hill Park and two fields at Oak Marr Park. Synthetic turf athletic fields may be utilized by the community nearly year round, during and after most weather events, while maintaining a very high degree of playability and player safety.

The fields are environmentally friendly in a variety of ways. The carpet is perforated and installed on a 8"+ porous aggregate base providing excellent vertical drainage. This helps filter contaminants while slowly releasing storm water through its subsurface drainage system, minimizing peak flows typical of sheet drained fields. Relative to a natural turf field, these fields require reduced overall maintenance. Emissions are greatly reduced as mowing, aeration, top dressing, seeding, and several other natural turf management tasks performed with fuel powered equipment are eliminated. Applications of fertilizers, soil amendments, and pesticides are not needed, eliminating the potential for runoff, volatilization and ground water contamination. Supplemental irrigation is eliminated, saving this resource.

Environmental Agenda Objectives Supported:

Air Quality (general), Parks, Trails, and Open Space (general) and Environmental Stewardship (general)

Other Plans or Documents where this action appears or that it supports:

Air Quality Management Plan
Great Parks, Great Communities Plan
Comprehensive Plan
Park Authority Strategic Plan
Park Authority Policy Manual
Park Authority Natural Resource Management Plan

Lead Agency:
FCPA

Status/Plans/Outcomes

Underway.

Resources

Patriot Park Phase One is funded by the 2004 Bond. Phase Two may include two to three additional synthetic turf fields and is currently not funded.

The 2006 Park Bond included $10M for synthetic turf field development.

The 2008 Park Bond includes $4M for synthetic turf field development.

The 2008 Park Bond includes $2.7M for improvements at Ossian Hall Park.

Additionally, STFDP is supported by use fees collected by Community Recreation Services (CRS) at approximately $500K per year and community partnerships.

Funding also is made available as a result of developer proffers and direct community partnerships.

EIP13-PT07-21(C). Park Authority Natural Resource Management Plan Implementation--Boundary Survey and Marking

Description of Action

The Park Authority has developed an Agency-wide Natural Resource Management Plan (NRMP), which was approved by the Park Authority Board in January 2004 (and renewed in 2009). The plan outlines strategies, actions and policy changes needed to appropriately plan, develop and manage parkland. The first phase of implementation of the Natural Resource Management Plan is focused on strategies that do not require additional resources such as reviewing policies and procedures, building partnerships and expanding education. To continue to implement this plan, funding is needed. In addition, in order to adequately manage and develop our parks, the Park Authority continues to stretch limited resources in the areas of acquisition, planning, development and maintenance.

The Park Authority has almost 23,000 acres of land, most of which is not marked at its boundaries. As a result, boundaries are not clear and park neighbors can have tremendous impacts on park resources through unintended encroachments. A critical component to an effective encroachment program is the ability to survey park boundaries to accurately identify whether adjoining private property owners are encroaching on parkland. Some encroachments cannot be resolved without going to court; accurate survey documents delineating the nature and extent of the encroachment are critical to any legal case. Recent budget cuts now require the Park Authority's survey team to recover more of the cost of their services, and without a dedicated funding source for them to charge to or to contract this work out, the park resources could be significantly damaged.

This program would survey and permanently mark park boundaries. This would make park property lines clear and help to prevent misunderstandings about property lines and discourage encroachments and their negative impacts.

Environmental Agenda Objectives Supported:

Parks Trails, and Open Space 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Park Authority Strategic Plan
Park Authority Policy Manual
Park Authority Natural Resource Management Plan

Lead Agency:

FCPA

Status/Plans/Outcomes

The majority of parkland boundaries are not marked. The continued lack of survey and boundary marking allows undesired use of parkland such as dumping, encroachments and poor land use practices such a off road biking, hunting and natural/cultural resource degradation. This program includes staff to conduct boundary surveying and marking with supplemental survey work by contract.

Resources

Funding: None
Funding Needed: $250,000 (annual cost)
While this effort requires dedicated recurring funding and staff position/s to be fully implemented, significant progress can be made with one-time funding.

EIP13-PT08-05(C). Sully Woodlands Interpretive Center and Resource Management

Description of Action

The Park Authority has developed a regional master plan for all parkland located within the boundaries of the Cub Run and Bull Run watersheds. This Sully Woodlands Regional Master Plan was developed in close coordination with the watershed planning process. The goal was to produce a regional master plan that not only achieves park objectives for land use and resource management, but one that is in direct concert with, and rooted in, similar county watershed management objectives. This model approach will serve the Park Authority well in other areas of the county as well.

An interpretive center and resource management activities are recommended in the plan. Natural resource management research, plans and activities will need to occur to maintain the integrity of the natural resources and to continue to protect the Cub Run and Bull Run watersheds.

Environmental Agenda Objectives Supported:

Water Quality 1, 2, and 3
Parks, Trails and Open Space 1, 2, 3, 4, 5, and 6
Environmental Stewardship 1, 2, 3 and 4

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Great Parks, Great Communities Plan
Park Authority Strategic Plan
Park Authority Policy Manual
Park Authority Natural Resource Management Plan

Lead Agency:

Park Authority

Status/Plans/Outcomes

Not begun

Resources

Amount to be determined.
Funding will be needed for a nature center as well as interpretive staff and resource/land management staff.
$290,000 for a conceptual plan is included in the 2008 bond.

EIP13-PT08-06(C). Implementing Natural Landscaping Practices on County Properties

Description of Action

This action focuses on the implementation of natural landscaping techniques and practices on county properties. On June 21, 2004 the BOS directed staff to identify county properties where natural landscaping could be used to reduce maintenance practices that can cause harmful environmental impacts such as air pollution, and reduce the need and expense of mowing, pruning, edging, and using fertilizers, pesticides, and herbicides. In response, a Natural Landscaping Committee (NLC) was formed to identify practices, policies and a countywide implementation plan. The final report and recommendations of the NCL was presented to the Board's Environmental Committee and approved by the BOS on July 11, 2005. The BOS directed the NLC to implement a five-year natural landscaping plan in an aggressive but cooperative fashion and submit natural landscaping projects to the ECC for possible inclusion into the EIP. The following projects are examples of specific natural landscaping projects that can be implemented on county properties:

- Establishing no-mow-zones and replanting these areas with tree seedlings and other alternative ground covers such as native wild flowers and grasses
- Planting riparian buffers with native trees and shrubs
- Installing Schoolyard Habitat Gardens
- Installing natural landscaping improvements using native plants around schools and governmental buildings
- Refitting stormwater management facilities using natural landscaping techniques
- Removing invasive plants that threaten native plant communities and replace with appropriate species trees and shrubs

Environmental Agenda Objectives Supported:

Parks Trails and Open Space (General)
Air Quality & Transportation (General)
Water Quality (General)
Environmental Stewardship 5

Other Plans or Documents where this action appears or that it supports:

Fairfax County Tree Action Plan
Benefits and Application of Natural Landscaping and Five-year Implementation Plan
Cool Counties Climate Change Initiative

Lead Agency:

DPWES, Urban Forest Management Division

Status/Plans/Outcomes

In alignment with BOS direction to pursue the "aggressive and widespread use of natural landscaping," if funded this action will implement approximately 130 natural landscaping projects on county-owned properties such as governmental centers, libraries, fire stations, parks and schools over the next five fiscal years.

These projects involve practices that will reduce mowing acreage and associated use of fertilizers, pesticides, gasoline and other petroleum based-fuels. Reduction of Volatile Organic Compounds (precursors to the formation of Ozone) emissions from reduced use of mowing equipment will result in improvement to air quality, especially during summer months when ambient Ozone levels become a critical air quality issue. The riparian buffer and stormwater management area projects will help to improve water quality.

Natural landscaping techniques can be used to reduce carbon dioxide emissions because they tend to require less fossil fuel to maintain than conventional landscaping, and they can also be used to provide energy conservation services for adjacent buildings. Most natural landscaping projects can be used to promote the use of natural landscaping on private properties (see related ES08-09(C) Promoting the use of Natural Landscaping).

Resources

FY 2013 funding needed: $100,000

EIP13-PT10-01(C). Weather Stations for Efficient Water Use at Golf Courses

Description of Action

The Park Authority operates seven golf facilities with extensive automated irrigation systems. Providing irrigation water in an efficient manner is our goal not only to save on water costs, but also to reduce our impact to the environment by using less water. At present, we do not have any weather stations in use to assist our managers in their operations. We are requesting funding to allow the installation of a weather station at both Twin Lakes and the Laurel Hill Golf Club. These stations will aid the site superintendent in administering their site specific irrigation programs using advanced technology. These systems will help to measure air temperature, relative humidity, barometric pressure, rainfall, solar radiation, wind direction and wind speed. These stations would assist our Wise Water Use initiatives at our two largest water consumer sites. Water consumption will be reduced as we have the necessary information to modify our watering programs. The data collected by the station will allow us to run shorter irrigation cycles, deliver water to areas in most need and even terminate irrigation cycles during un-staffed times.

Environmental Agenda Objectives Supported:

Environmental Stewardship (General)
Parks Trails and Open Space (General)

Other Plans or Documents where this action appears or that it supports:

Park Authority Strategic Plan
Park Authority Natural Resource Management Plan

Lead Agency:

Park Authority

Status/Plans/Outcomes

This project is ready to be implemented if funded.

Resources

$10,000 (unfunded) for two golf courses

Contracted price quotes have been received from John Deere Landscapes for $5,000 per unit totaling $10,000 for both Twin Lakes and Laurel Hill Golf Club.

EIP13-ES11-06 (A). Window Replacement at Noman M. Cole Jr. Pollution Control Plant

Description of Action

The project creates work for a window replacement company. The project entails replacement of 160 single pane aluminum frame windows with low E double insulated glass with Fiberglass Reinforce Polyester (FRP) or aluminum clad window frame. Ten facilities, nine industrial and one administrative, will be retrofitted with energy efficient windows that will result in a significant cost savings. The current British Thermal Unit (BTU) loss of the ten existing facilities is 468 million BTU per year. The projected loss of the low E double insulated glass with Fiberglass Reinforce Polyester (FRP) or aluminum clad window frame is estimated at 8.0 million BTU per year, a factor of almost 400% energy savings as compared to the current loss from 45-year old aluminum windows.

The project was identified in the Master Plan for the Noman M Cole, Jr. Pollution Control Plant and can proceed right away. The project can be considered part of Fairfax County's Environmental Improvement Initiatives to reduce carbon footprint (ES10-01(A)) and similar to other weatherization initiatives (ES10-10(C)).

Energy Efficiency is expected to yield $4,680 per year in savings - a simple payback period of 13 years.

Environmental Agenda Objectives Supported

Air Quality and Transportation (general)
Environmental Stewardship 5

Other Plans or Documents where this action appears or that it supports

Air Quality Management plan
Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency

DPWES

Status/Plans/Outcomes

This project was completed on November 5, 2010. It was funded through Capital Improvement Project (CIP) funding at a cost of approximately $208,000.

EIP13-ES07-02(B). Volunteer Stream Monitoring Program

Description of Action

The Northern Virginia Soil and Water Conservation District (NVSWCD) sponsors a volunteer stream monitoring program. The program provides training, certification, equipment, on-going support, data processing and quality control. Volunteers conduct biological monitoring to determine the general health of a stream, based on the composition and diversity of benthic macroinvertebrates. They also make observations about the stream physical conditions and surrounding habitat. Approximately 50 certified monitors collect data four times a year at approximately 20 sites throughout the county. Additional data is collected during volunteer training workshops led by NVSWCD staff year round. The volunteer data complements the data that is collected for the DPWES Stream Monitoring Program and provides on-going water quality trend data and may identify emerging problems. Most importantly, the program engages local residents in water resources issues, teaching them about how to lessen their impacts on water quality and reach out to their local community.

Park Authority staff and National Park Service interns also monitor streams in several parks. Staff and an intern conduct the annual Rapid Bio-Assessment II at Huntley Meadows Park.

Environmental Agenda Objectives Supported

Environmental Stewardship 1, 2, 3 and 4
Water Quality 1, 3, 9 and 10

Other Plans or Documents where this action appears or that it supports

MS-4 Permit
Watershed Management Plans
New Millennium Occoquan Watershed Task Force Report
Park Authority Strategic Plan
Park Authority Natural Resource Management Plan

Lead Agency

Northern Virginia Soil and Water Conservation District

Other Agencies

Fairfax County Park Authority
Department of Public Works and Environmental Services

Status/Plans/Outcomes

These programs are part of an on-going effort of the Northern Virginia Soil and Water Conservation District (NVSWCD), and are supported by FCPA and DPWES.

The volunteer data collected serves as important information for determining water quality trends in the county's streams. Volunteer data is included in the Annual Report on Fairfax County Streams.

During 2011, the program's data archive is being digitized and mapped so that it may be displayed on the NVSWCD website.

As part of the stream monitoring program, NVSWCD conducts programs in elementary, middle and high schools, which include stream monitoring training and educational programs about watershed issues. Certified stream monitors from Woodson High School's Science Honor Society collect data from Accotink Creek.

In addition to learning about stream monitoring, many volunteers also become involved in watershed groups, clean-up events, and educational programs. NVSWCD sends newsletters and monthly calendars about watershed events via email to approximately 800 people who are interested in stream monitoring and related issues, many of whom forward the emails to others.

In 2007, the Audubon Naturalist Society ended its stream monitoring program in Fairfax County. Its monitors and sites were integrated into the stream monitoring program coordinated by NVSWCD.

Fairfax County will continue to support the efforts of volunteers in support of the program and for the protection of water quality within the county.

Resources

Staff support for the volunteer stream monitoring program is funded as part of the NVSWCD annual budget.

Monitoring equipment and supplies are funded through grants, which average $2,000 annually. The annual contribution of volunteers who participate in this program is valued at more than $36,514 (65 x 35 hrs x $16.05/hr).

EIP13-ES07-10(B). Storm Drain Marking-Pollution Prevention Program

Description of Action

The Northern Virginia Soil and Water Conservation District (NVSWCD) coordinates a storm drain marking program. The neighborhood-based, volunteer-led initiative focuses on limiting non-point source pollution via storm drains, which lead to nearby streams. The program emphasizes educating the community about how to properly dispose of used motor oil, fertilizer, pet waste, toxic chemicals, yard debris, trash and other pollutants and encouraging environmental stewardship by educating residents about their local watershed. NVSWCD trains volunteers, who then create and distribute brochures and door hangers within their project area and place articles in their community newsletters. NVSWCD provides guidance to ensure accurate information is disseminated. It also coordinates with VDOT for the necessary permits and ensures that the storm drain labels are applied according to the standards and guidelines in the NVSWCD *Storm Drain Marking Project Guidelines*. (http://www.fairfaxcounty.gov/nvswcd/sdeprojectguide.htm). Schools, community organizations, and watershed stewardship groups often are partners in implementing this program. In FY 2006, DPWES formed a partnership with NVSWCD to support this program as part of the county's watershed plan implementation program. DPWES provides the storm drain markers, glue and other supplies. NVSWCD committed more staff time to promote and oversee an expanded program.

Environmental Agenda Objectives Supported

Environmental Stewardship 1, 2, 3 and 4
Water Quality 1, 3 and 10
Solid Waste (General)

Other Plans or Documents where this action appears or that it supports

Watershed Management Plans
New Millennium Occoquan Watershed Task Force Report
MS-4 Permit

Lead Agency

Northern Virginia Soil and Water Conservation District

Other Agencies

Department of Public Works and Environmental Services

Status/Plans/Outcomes

2010 marks the fifth year of the county-wide storm drain marking initiative that is staffed and facilitated by the North Virginia Soil and Water Conservation District with supplies provided by DPWES. Prior to the current expanded program, the average number of projects was six per year. Since expanding the program in FY 2006, NVSWCD coordinates an average of 25 to 45 projects each year, which are carried out by more than 400 volunteers. They educate an average of 18,000 households and label more than 3,000 storm drains annually. Additionally, during FY 2008, the Park Authority marked the storm drains at all of their staffed parks and developed educational materials for their staff and the public as part of this effort. The Park Authority project alone educated another 155,000 Fairfax County residents during FY 2008.

During CY 2010, 636 volunteers educated 19,717 households during 44 projects and placed markers on 4,605 storm drains. In total (not counting the Park Authority's effort in 2008), this brings the impact of the program over the last five fiscal years to: 3,012 volunteers, 175 projects, 126,702 households educated, and 18,092 storm drains labeled throughout Fairfax County.

Since 2005, DPWES has joined with other local jurisdictions and the Northern Virginia Regional Commission to sponsor public service messages on local radio. These messages provide practical tips on how to prevent common pollutants – fertilizer, used motor oil, and pet waste – from entering the storm drains.

Resources

NVSWCD staff time, valued at $35,000 is budgeted as part of its Annual Plan of Work

DPWES provides funding of $12,000 - $15,000 annually for supplies, including the storm drain markers, glue, cleaning supplies, safety equipment, and promotional fliers, as a public outreach project under its watershed plan implementation initiative. Funding is expected to continue at this level.

EIP13-ES08-01(B). Education and Outreach Programs and Activities

Description of Action

Fairfax County sponsors a variety of programs and activities that help to inform the public about watershed and environmental stewardship issues in Fairfax County. They provide the knowledge, and often the tools, needed to help protect streams, promote environmentally responsible behaviors, and conserve natural resources. The programs may be unique to an agency, or they may be carried out in cooperation with a few, or many, partners. They include brochures, newsletters, exhibits, videos, seminars and workshops, on-site and specialty programs, websites, and technical and educational advice. They provide ways that residents can learn about and participate in environmental stewardship.

Environmental Agenda Objectives Supported

Environmental Stewardship 1, 2, 3, 4 and 6
Water Quality 1, 3, 9, and 10
Solid Waste (General)
Air Quality 7

Other Plans or Documents where this action appears or that it supports

Watershed Management Plans
MS-4 Permit
New Millennium Occoquan Watershed Task Force Report
Park Authority Natural Resource Management Plan
Fairfax County Tree Action Plan
Cool Counties Climate Stabilization Initiative
Thirty-Year Tree Canopy Goal
Fairfax County 20-Year Solid Waste Management Program
Fairfax County Energy Policy
Great Parks, Great Communities Plan

Lead Agencies

Northern Virginia Soil and Water Conservation District
Fairfax County Park Authority
Department of Public Works and Environmental Services

Other Agencies

Health Department

Status/Plans/Outcomes

- Fairfax County Park Authority (FCPA) Stewardship brochures and highway cards are distributed county-wide (see ES08-05 (B)). Stewardship issues are highlighted in the Park Authority's quarterly magazine, *Parktakes*, which has 165,000 subscribers; an additional 35,000 copies are distributed in parks and libraries**.**
- Northern Virginia Soil and Water Conservation District (NVSWCD) published *You and Your Land—A Homeowner's Guide for the Potomac Watershed.* This handbook has practical information designed to aid homeowners in the economical care and maintenance of their property. It provides a simple step-by-step approach to solving common problems found in most yards, gardens or common areas. It is available in print from NVSWCD and on the county web site at http://www.fairfaxcounty.gov/nvswcd/youyourland/intro.htm A *Residential Low Impact Landscaping Guide,* developed as part of the Falls Hill residential LID demonstration project, explains a variety of techniques, includes instructions and sources of supplies, and is available in print and on the NVSWCD website. A *Watershed Stewardship Guide*, also available in print and on the website, shows citizens ways they "can make a difference" and protect their local watersheds.
- The FCPA Resource Management Division's newsletter *ResOURces* reaches thousands of people quarterly with articles focusing on natural and cultural resource stewardship. The newsletter's shift from print to online in 2010 helped protect some of those resources.
- *Conservation Currents* is the NVSWCD quarterly newsletter with articles homeowner associations are encouraged to reprint in their own newsletters. The variety of articles includes information about ponds, streams, stormwater management, hazardous waste, disposing of pet waste, proper lawn and garden fertilization, low impact development techniques, erosion and sediment controls on construction sites, native plants, managing invasive species, trees and citizen stewardship activities. Articles can be downloaded from www.fairfaxcounty.gov/nvswcd .
- The FCPA has installed wayside signs along trails and exhibits at parks that educate about watersheds and watershed issues, including streams, buffers and habitat.
- FCPA staffers continue to produce videos that educate the public on significant environmental resources. These videos are shown at nature centers. In 2009, a video that demonstrates a Canada Geese management methodology was produced and is used for training county staff and citizens.
- The *Enviroscape* watershed model is used to demonstrate to both adult and youth groups how a watershed functions and the sources and solutions for nonpoint source water pollution.
- The Fairfax County website contains a broad array of environmental information provided by many different agencies. The FCPA web page (www.fairfaxcounty.gov/parks/resources/stewardship.htm) is a portal to several resources on important issues for Fairfax residents. The NVSWCD web page contains educational and technical information and articles on many environmental topics—from lawn care, erosion and drainage, to recycling and litter, stream restoration ponds, and rain gardens (www.fairfaxcounty.gov/nvswcd). The Department of Public Works and

Environmental Services (DPWES) publishes web pages for each of its programs. The stormwater program web page includes information about stormwater management requirements for construction projects, stormwater quality reports and studies, and volunteer opportunities. The stormwater program also supports the webpage www.fairfaxcounty.gov/dpwes/watersheds with announcements, information and updates on watershed planning efforts, and reports such as the *Stream Physical Assessment,* the *Occoquan Watershed in the new Millennium* and the *MS-4 Annual Report.* Solid Waste Management Program web page provides details about refuse and recycling (www.fairfaxcounty.gov/living/recycling/), as well as information about how to dispose of household hazardous waste. All of the solid waste recycling and disposal services provided at either of the county's two facilities are described on these pages.

- The Solid Waste Management Program participates in the *Know Toxics* program with Northern Virginia Regional Commission, an outreach program designed to educate businesses about proper recycling or disposal of obsolete electronics. The Solid Waste Management Program has instituted *Electric Sundays* at either of the county's two solid waste disposal facilities, when residents can recycle obsolete electronics and televisions and can dispose of their compact fluorescent bulbs at no charge. In CY 2010, more than 1 million pounds of electronic waste was collected for recycling at the *Electric Sunday* events. The Solid Waste Program hosts a web address entitled *Trashmail.* It is an easy way for residents to pose questions about recycling, refuse disposal and household hazardous waste management. In 2010, about 2,500 responses were given.
- The Employee Recycling Committee was re-established as the Fairfax Employees for Environmental Excellence (FEEE). Its area of interest includes not only recycling, but promoting energy efficiency and water conservation as well as other activities and environmentally-conscious practices to county employees. It sponsors an annual Earth Day Expo to raise awareness about county environmental programs, an annual awards program for recycling excellence among county employees, and a website with information for employees to use in their jobs.
- Fairfax County supports litter prevention activities through its partnership with Clean Fairfax Council (www.cleanfairfax.org).
- The Health Department sent notices to 14,866 households in 2010 to remind them to turn their flow diversion value on their septic systems once a year, and to pump out their septic tank every three to five years. In 2010, 5,437 non-compliance letters were mailed to owners of homes that have not pumped out their septic tanks during the 5 year period.
- Reston Association provides watershed education opportunities at its Walker Nature Education Center, with programs for all ages to promote watershed appreciation and conservation, including stream and lake explorations, rain barrel workshops and fishing programs, as well as publications such as *Helping Our Watersheds: Living in the Potomac and Chesapeake Bay Watershed*. Wayside exhibits at lakes educate about flora and fauna supported by the lake, and exhibits along streams describe restoration efforts. A watershed education trunk is available on loan to area school teachers.
- The more than 300 citizens who participated in NVSWCD's two the Neighborhood Ecological Stewardship Training (NEST) programs continue to make positive contributions to protecting the county's natural resources. The program featured a wide range of classes and experiential activities on land and water linked participants to their

natural environment and fostered long-term stewardship. More than 73 partners and 115 activities were linked to the NEST program.

- Many agencies attend town meetings and other community events, which provide an opportunity to take a display and literature and talk with the public. DPWES provides speakers to community events on a regular basis. In 2010, staff made more than 200 presentations.
- The Virginia Department of Forestry regularly works with Fairfax County to conduct watershed and water quality presentations to students, homeowners, professionals and organizations and to provide exhibits and distribute materials at community events. In 2010, VDOF made 49 presentations.
- In 2010, DPWES Stormwater Management staff continued to make regular presentations to various groups throughout the county regarding nonpoint source pollution and other watershed basics. The presentations included an overview of watersheds and stormwater management practices that residents can implement to protect the water quality of local streams, the Occoquan Reservoir, the Potomac River and the Chesapeake Bay.
- NVSWCD's community education programs include workshops on sediments and nutrients in streams, how to spot problems with erosion and sediment controls on construction sites, how to solve erosion and drainage problems around your home, pond management, stream stabilization projects, infiltration techniques such as rain gardens, and preventing pollution from horse-keeping operations. In 2010, 54 presentations were made to more than 2,236 people from industry, government, and the general public. Four of the workshops – two for industry and two for residents – focused on the design and installation of rain gardens.
- Stormwater Management, Solid Waste, Urban Forestry, VDOF, and NVSWCD provide exhibits and distribute literature at county and community events throughout the year.
- The Solid Waste Management Program sponsors the annual Earth Day/Arbor Day celebration, which is produced in conjunction with Clean Fairfax Council. County agencies, businesses and environmental and non-profit groups partner to support and help produce this annual event, which was held at the Government Center in 2011. The Earth Day/Arbor Day event emphasis is on hands-on education and demonstrations related to environmental protection and litter prevention. The event includes a ceremony where Clean Fairfax Council recognizes recycling and other education programs in schools, the Tree Commission presents its *Friends of Trees* awards, and members of the Board of Supervisors plant a tree.
- DPWES-Stormwater Management created a series of education brochures to encourage public involvement in the watershed management planning effort. As part of this effort, stormwater management created Watershed Advisory Groups to advise consultants and county staff on watershed issues in their local watersheds. The general public was invited to meetings to review and comment on the watershed plan and projects developed for their neighborhoods. This effort was completed at the end of 2010.
- Stormwater Management published numerous fact sheets and brochures on topics such as Picking Up Dog Waste, Rain Barrels, how to Discharge Swimming Pool Water and Car Washing the Right Way.
- Several Parks, DPWES-Urban Forest Management Division, and NVSWCD join with Potomac Conservancy, Fairfax ReLeaf, NVCT, and the Virginia Department of Forestry to support the collection of native seeds for the annual *Growing Native* Program.

- Each year, thousands of events (public programs, classes, special events, school programs, scout programs and camps) are conducted in the parks to increase the public's awareness, appreciation and stewardship of the county's natural and cultural resources. Programs are developed for varied audiences, including adults, families and children. Most of these sessions include an outdoor component encouraging direct contact with natural resources. Additional self-guided and naturalist-led activities for children and families at the Park Authority's interpretive sites support the nation-wide "No Child Left Inside" movement. Each year, Park Authority staff also conduct hundreds of outreach programs or prepare outreach exhibits highlighting stewardship-related themes for schools, libraries and other community organizations.
- The annual *Wetlands Awareness Day* at Huntley Meadows Park attracts more than 500 visitors. The year 2010 marked 18 years of this stewardship education event.
- NVSWCD's annual tree and shrub seedling program provided residents a variety of 6,500 inexpensive native plants. Recent themes have featured a *Butterfly Buffet* and *For The Birds, Nature's Palette, Deer Resistant*. This program raises awareness about the benefits of trees and native vegetation, and promotes urban reforestation, habitat enhancement and water quality protection.
- Fairfax ReLeaf, working with volunteers, planted 3,520 trees in 2010. Nearly 30% were riparian buffer plantings. Fairfax ReLeaf also distributed 3,325 trees to county residents.
- Urban Forest Management Division (UFMD) partners with Fairfax Master Naturalists for emerald ash borer (EAB) outreach and education. UFMD staff conduct training for Fairfax Master naturalists about EAB and how it threatens our community. Fairfax Master Naturalists volunteer to give information about EAB at community events and in classrooms.
- Through the Master Gardener program, the Park Authority and Virginia Cooperative Extension have increased outreach to community groups and individuals through public programs, speaking engagements, information displays, via the help line, and at plant clinics, which typically are conducted at libraries and farmers markets. Audiences at the Master Gardener annual EcoSavvy Symposiums at Green Springs Park learn about gardening strategies that conserve natural resources and how to solve problems without harming the environment.
- The Fairfax County Cooperative Extension (VCE) office distributed 4,000 Virginia Tech publications on topics such as lawn fertilization and plant material selection for this area. It also provided lawn care advice to more than 25,000 residents through monthly articles in resident association newsletters. VCE also sponsors a Home Turf Nutrient Management Program. For a small fee ($25), the homeowner receives a visit from a Master Gardener who collects a soil test, measures the lawn area and then prepares a nutrient management plan for the turf with lime and fertilizer.
- The Fairfax County Water Authority includes suggestions for wise water use with its water bills and has two handouts which it distributes: *Wise Water Use Landscaping and Watering Guide* and *Wise Water Use Tips*.
- NVSWCD and NVRC developed a *Residential Low Impact Landscaping Handbook,* as part of the Falls Hill neighborhood demonstration and education project, where many of these practices that control and infiltrate stormwater were installed.

- FCPA and NVSWCD collaborated to publish *Rain Garden Design and Construction: A Northern Virginia Homeowner's Guide,* with step-by-step instructions on how to plan, design, build and maintain a rain garden. Both agencies distribute the guide and it also can be downloaded at www.fairfaxcounty.gov/nvswcd/raingardenbk.pdf .
- NVSWCD staff provide education and technical assistance to homeowners and homeowner associations to help them solve drainage, erosion, and pond management problems, as well as ways to protect and enhance natural resources. In 2010, 326 homeowners and HOAs received technical advice, which included 140 on-site visits. Staff also responded to 1,400 information inquiries and distributed more than 1,876 brochures, publications and other information.
- NVSWCD has extended outreach to multicultural and multilingual audiences, particularly Spanish speakers. In CY 2010, approximately 50 people were reached through parent groups affiliated with schools and exhibits at Hipanaic Heritage events.
- NVSWCD coordinates a regional *Rain Barrel Program.* Its partners include Arlington County, Arlingtonians for a Clean Environment, Falls Church and Alexandria. In 2010, 588 rain barrels were distributed at seven 'build-your-own' workshops and 2 distribution events for pre-made barrels. Volunteers helped with washing the barrels and assembling the barrels that were sold pre-made. 48 free barrels were distributed at teacher and train-the-trainer workshops.
- NVSWCD sponsors bi-monthly *Green Breakfasts*, featuring presentations on timely environmental topics and programs, including many county initiatives, and offers an opportunity for information sharing. Notices about the breakfasts, as well as announcements about other programs and events are emailed to 505 recipients. Also, a monthly *Watershed Calendar* is emailed to 805 volunteer stream monitors and others interested in watershed issues.
- In 2009 and 2011, NVSWCD sponsored a *Watershed Friendly Garden Tour* with 15 sites throughout the county. Knowledgeable guides and literature were available at each site. Approximately 200 visitors each year learned about ecologically-friendly sustainable management techniques.
- Fairfax County participates in the Northern Virginia Clean Water Partners' regional campaign to educate residents about nonpoint source pollution. 2010 marked the sixth year of the campaign. For the 2010 campaign, the partners decided to focus on the issue of pet waste by creating a web blog about dogs (http://www.northern-virginia-dog-blog.com/) featuring articles the included the message about picking up pet waste. Through August 2010, the dog blog had 3,693 views. The *Only Rain* website (www.onlyrain.org) was enhanced with new information and links to the dog blog and had more than 6,300 visits. A new radio public service advertisement was selected and aired in October 2010 entitled *Dog Bleep*, which featured a tagline at the end to remind residents that storm drains flow to local streams and gave the web site address for more information.
- DPWES Stormwater Management participated with regional jurisdictions and the Metropolitan Washington Council of Governments in a public education *Community Engagement Campaign,* which was launched in 2010. The Metro DC Lawn and Garden Blog proved to be the most popular of three blogs that were part of the campaign.
- DPWES podcasts continued in 2010. Subjects included the proper method of discharging swimming pool water.

- DPWES-Stormwater Management posted videos to You Tube on subjects that included picking up dog waste, anti-littering and using recyclable bags for shopping. These videos were viewed more than 500 times.

Resources

These programs are on-going and will continue. They are budgeted and carried out as part of the DPWES, FCPA, VCE, Health and NVSWCD annual work plans.

EIP13-ES08-02(B). Environmental Education Programs Involving Youth

Description of Action

Providing opportunities for youth to learn about and engage in their natural world is key to their becoming life-long stewards of the environment. The County has a variety of programs, many in partnership with schools, which build understanding and respect for the county's natural resources, and further the goal of promoting environmental education and stewardship among youth.

Environmental Agenda Objectives Supported
Environmental Stewardship 1, 2, 3, 4 and 6
Water Quality 1 and 10
Solid Waste 2 and 3

Other Plans or Documents where this action appears or that it supports
Watershed Management Plans
New Millennium Occoquan Watershed Task Force Report
Park Authority Strategic Plan
Park Authority Policy Manual
Park Authority Natural Resource Management Plan
Great Parks, Great Communities Plan

Lead Agencies
Fairfax County Park Authority
Northern Virginia Soil and Water Conservation District
Department of Public Works and Environmental Services

Status/Plans/Outcomes

- Hundreds of environmental education programs are offered each year in parks managed by Fairfax County Park Authority. Parks serve as science labs for thousands of elementary school students annually. These hands-on programs are specifically designed to meet the Virginia Standards of Learning and Fairfax County's Program of Studies. Annually, Park Authority staffers coordinate with the Elementary Science and Social Studies Curriculum Specialists to ensure that park-based school programs meet the needs of teachers and students.
- *Ecosystems* is a Fairfax County Public School curriculum designed to help 4th grade students learn more about the natural world. From the curriculum's inception, Park Authority naturalists have been involved because of the Resource Management Division's solid partnership with Stephanie Roche, Elementary Science Curriculum Coordinator. During summer 2007, naturalists trained and answered questions posed by the curriculum writers (mostly FCPS teachers). When it came time to field test the curriculum in spring 2008, Park Authority naturalists trained the 4th grade teachers

- selected to try out and evaluate Ecosystems. Throughout 2008, paid and volunteer naturalists reviewed curriculum concepts, graphics and text, sometimes raising concerns about accuracy. With spring 2009 as the official countywide launching of Ecosystems, 4th grade teachers were trained at FCPS-sponsored in-services in January. Once again Park Authority naturalists were instrumental in developing and presenting training to more than 500 4th grade teachers at the in-service. To further support this new curriculum, six Park Authority sites developed specific environmental education programs to be offered in parks or at schools.
- In collaboration with the Middle School Science Curriculum Coordinator, park staffers have developed "Meaningful Watershed Experience in Parks" for 7th graders. These advanced environmental experiences were offered on a trial basis in the spring of 2006, and were formally launched at the Middle School In-Service in August, when teachers were able to register their classes for programs at five parks in the spring of 2007. These watershed experiences have reached more than 1,000 students. DPWES-Stormwater and NVSWCD also are partnering with FCPS to implement the *Meaningful Watershed Experience* Program, by training teachers in water quality monitoring techniques, watershed protection policies, and stewardship opportunities.
- In summer 2009, the Park Authority hosted over 60 nature day camps, which included 1,000 children. The goal of the camps is to increase appreciation and sensitivity in campers from pre-schoolers to teens. These camps highlight the rich wildlife and habitats and how children can help protect them. Some camps include stream observation and water testing. The summer camp program has been greatly expanded, with approximately 145 camps offered in 2010. Individual students who serve as park volunteers also conduct park projects to fulfill community service and class requirements. Individual students, who serve as active park volunteers, also conduct park projects to fulfill community service and class requirements.
- The "Roots & Shoots" (R&S) Jr. Volunteer Program at Fairfax County Park Authority RECenters engages young people in active environmental stewardship year-round, including summer day camps. Since 2007, more than 200 three to sixteen year olds have participated at eight RECenters. They participate in watershed cleanups, invasive species management, park beautification projects, community outreach and education, as well as watershed programming. Annually, the Park Authority mentors dozens of Eagle and Golden Circle candidates in a wide rang of stewardship projects.
- *Envirothon* is a local, regional, state and national competition among teams of high school students, which is sponsored locally by NVSWCD. Following study and preparation throughout the year, hands-on events give them an opportunity to demonstrate their knowledge about aquatics, forestry, soils, wildlife. Each year there is a special topic, such as watershed planning, urban runoff, agricultural pollution, or a leaking landfill. In 2010-2011, following several in-school competitions, five teams participated in the county competition; two advanced to the regional competition, which was held at Ellanor C. Lawrence Park. The top finisher from Fairfax County placed second in the state-wide competition.
- Education resource materials, watershed awareness programs (watershed basics), programs about soils, and an interactive watershed model—*Enviroscape*—are part of NVSWCD's outreach program targeted to teachers and youth groups. NVSWCD's programs at high schools and high school environmental clubs highlight stream ecology,

watershed basics, biological monitoring of stream water quality, and soils. Students also receive help with science projects. In CY 2010, the *Enviroscape* model was demonstrated 6 times to 260 students and scout programs. Also, the Park Authority demonstrated the model to hundreds of children as part of interpretive programs.

- Each year, NVSWCD judges environmental projects at the regional science fair and provides awards and recognition. Project summaries are posted on the county's website for other students to read; they receive a large number of hits.
- NVSWCD coordinates approximately 40 *Storm Drain Marking* projects throughout the county each year. The majority of the projects are carried out by Eagle scout candidates (see ES-07-10 (B)).
- Middle and High School students participate in the *Volunteer Stream Monitoring* Program, assessing water quality in streams in their neighborhoods and in parks. (see ES-07-02 (B)).
- Annually, NVSWCD is the local sponsor for a state-wide scholarship program for college students interested in studies related to natural resources.
- Urban Forest Management Division offers two education programs to county schools: *Alien Invaders* and *Trees Please*. *Alien Invaders* introduces the concepts of native and invasive species and reviews examples of invasive species found in Fairfax County and why they are a problem. *Trees Please* focuses on the importance of trees and their significance to people and the environment. Both programs meet Virginia Standards of Learning for 3rd, 4th and 7th grades and high school biology.
- The Reston Association includes watershed education and stream and lake exploration in eight of its summer camp programs for children from ages 3 to 16. During the summer of 2010, these camps were attended by approximately 1,200 children.
- DPWES staff from Stormwater Management, Wastewater and Solid Waste continue to present environmental curriculum for high school students. This is a five-hour series of classes geared to the high school level. In 2010, about 13 *Sewer Science* program presentations were made at county high schools.
- DPWES Solid Waste Management, in partnership with Channel 16, developed a video about recycling and refuse management entitled *Pop-Up Trash*. The video was sent to each school in Fairfax County. Also, DPWES-Solid Waste Management takes recycling programs and activities to the schools. In CY 2010, more than 80 presentations on refuse and recycling were made in the Fairfax County Public Schools. A resource booklet is produced annually for science teachers, called SCRAPbook (Schools/County Recycling Action Partnership), which provides details to teachers about services and presentations available to the schools from DPWES staff.
- DPWES Solid Waste Management, in partnership with Clean Fairfax Council, offers grants (Johnie Forte Junior Memorial grants) to FCPS each year to implement litter prevention, litter control, and recycling projects in schools. This program has been ongoing for about 15 years and to date, over $75,000 in grants has been awarded to Fairfax County Public Schools to fund environmental projects.
- DPWES Stormwater Management expanded its *Stormy the Raindrop* program, teaching children about keeping our land and water clean. In 2009, a coloring book for children younger than five was developed; more than 4,000 copies have been distributed. In 2010, a second activity book was developed for fourth graders, in accordance with Virginia's

Standards of Learning and the county's Program of Study. The program was the Bronze Medal winner of the 2011 Governor's Environmental Excellence Award.

Plans are for these programs and partnership activities to continue.

Resources

These programs are budgeted and carried out as part of the FCPA, DPWES, and NVSWCD annual work plans.

EIP13-ES08-03(B). Stream and Watershed Clean Up Efforts

Description of Action

Trash and debris discarded throughout a watershed often end up in the county's streams and stream valleys. They are collected and carried by stormwater runoff from streets, yards, and parking lots, and enter stormwater inlets that lead to local streams. These streams connect to larger watersheds, the Occoquan and Potomac Rivers, and eventually the Chesapeake Bay. Community-based stream and watershed cleanups provide a valuable environmental benefit to the county. The county supports these efforts in a variety of ways, including helping to initiate, plan and publicize events, participating in projects, and facilitating disposal.

Environmental Agenda Objectives Supported

Environmental Stewardship 1, 2, 3, 4, 5
Water Quality 1, 3, 10
Solid Waste (General)

Other Plans or Documents where this action appears or that it supports

Watershed Management Plans
New Millennium Occoquan Watershed Task Force Report
MS-4 Permit
Great Parks, Great Communities Plan

Lead Agencies

Northern Virginia Soil and Water Conservation District
Fairfax County Park Authority
Department of Public Works and Environmental Services

Status/Plans/Outcomes

Since 1990, the Park Authority has sponsored the biannual Watershed Clean-Up Day, as an opportunity for residents to discover the dynamics of county streams and watersheds and to provide a hands-on experience for them to care for their water resources. Participants include scouts, families, church groups, school groups and civic associations. As they remove debris, they learn how water moves in a watershed and that most of the trash originated elsewhere. Most of the recent Watershed Clean-Up Days in parks were done in collaboration with the International Coastal Cleanup in the fall and the Potomac River cleanup in the spring. Additional stream clean ups are completed year round with individual groups. The Park Authority coordinates with these volunteers and transports collected trash to the appropriate disposal facilities.

NVSWCD, FCPA, DPWES Stormwater Planning and Solid Waste, in partnership with Clean Fairfax Council and numerous other local agencies and groups, support ongoing and semi-annual watershed cleanup efforts. Annually, they assist with county-wide planning for the Potomac Watershed Cleanup in April, coordinated watershed-wide by the Alice Ferguson Foundation (www.fergusonfoundation.org), and the International Coastal Cleanup in September, sponsored by the Ocean Conservancy and coordinated in Virginia by Clean Virginia Waterways (www.oceanconservancy.org/our-work/marine-debris/international-coastal-cleanup-11html). The supporting agencies publicize the events, help volunteers identify and sign up cleanup sites, pick up and deliver supplies to several locations, and facilitate disposal of collected trash. In the spring of 2010, 101 sites were established throughout the county for the annual Potomac River Cleanup. The effort included 2,115 volunteers who removed 29 tons of trash. In the fall of 2010, during the annual International Coastal Cleanup, volunteers removed trash from 32 sites. DPWES Solid Waste supports citizen clean up efforts by waiving tipping fees. DPWES created a floatables page on its website and encourages residents to participate in watershed cleanups and report on results, which are included in the Municipal Separate Storm Sewer System (MS-4) annual report. NVSWCD and Solid Waste partner to provide an annual prize to exemplary cleanup leaders.

The Board of Supervisors (BOS) has joined jurisdictions throughout the Potomac Watershed in signing the treaty for a *Trash Free Potomac by 2013*. The BOS Environmental Chair, DPWPES, NVSWCD, and other groups in the county participated in the 2006 - 2011 Trash Summits in Washington, DC and continue to participate in the working groups associated with this initiative, which is being coordinated by the Alice Ferguson Foundation. These groups focus on education and outreach programs, economic issues, technical measures, and regulatory issues.

Community-based groups, such as the Friends of Little Rocky Run, Friends of Accotink Creek, Friends of Cub Run, Friends of Burke Spring Branch, Friends of the Occoquan, the Mason Neck Lions Club, and many others, sponsor periodic and annual stream and watershed cleanups. The County supports these efforts by publicizing and helping with disposal and often by staff participation.

Community groups are encouraged to participate in stream cleanup activities throughout the year. Clean Fairfax Council provides supplies for many of these events (www.cleanfairfax.org) . Groups can establish ongoing efforts by enrolling in the Virginia Adopt-A-Stream program (www.dcr.virginia.gov/soil_and_water/adopt.shtml). Following a commitment to conduct annual cleanups, groups receive a sign with the program logo and their name, which they can post at a road crossing to help raise awareness about keeping trash out of streams.

Resources

Support for current watershed clean-up efforts are part of the on-going Park Authority, DPWES and NVSWCD work plans.

EIP13-ES08-04(B). Support of Citizen-Based Environmental Stewardship Programs and Activities

Description of Action

The county recognizes that neither government nor residents can solve watershed problems alone, but must work together. It also recognizes the important contributions made by citizen-based initiatives to conserve, protect and enhance the county's natural resources. The county supports these efforts by being a resource for information and technical advice, and identifying and making available county services and programs to support activities.

Environmental Agenda Objectives Supported

Environmental Stewardship 1, 2, 3, 4 and 6
Water Quality 1, 3, 9, 10
Air Quality and Transportation 7

Other Plans or Documents where this action appears or that it supports

Watershed Management Plans
New Millennium Occoquan Watershed Task Force Report
Park Authority Natural Resource Management Plan
Fairfax County Tree Action Plan
Great Parks, Great Communities Plan

Lead Agencies

Northern Virginia Soil and Water Conservation District
Department of Public Works and Environmental Services
Fairfax County Park Authority

Status/Plans/Outcomes

Watershed stewardship groups receive administrative, educational and technical support from NVSWCD and county agencies. Groups include 'Friends of streams' groups for Accotink Creek, Cub Run, Rocky Run, Little Rocky Run, Burke Spring Branch, Sugarland Run, the Occoquan and others, and 'Friends of parks' groups from Hidden Oaks, Huntley Meadows Colvin Run Mill and others. Besides stream monitoring and cleanups, many community, scout, school, homeowner associations, civic groups and environmental organizations organize tree plantings, watershed cleanups, pollution prevention and education activities, riparian and habitat enhancement projects and other environmental stewardship activities on both public and private lands. Also, the Virginia Department of Forestry, Fairfax Trails and Streams, the Mason Neck Lions Club, Northern Virginia Conservation Trust, Potomac Conservancy, Northern Virginia Audubon, Earth Sangha, and Fairfax ReLeaf have coordinated environmental stewardship activities with county and NVSWCD staff. In 2006, DPWES purchased trees for the *2006 Trees in 2006* campaign, which was coordinated by Fairfax ReLeaf. For stewardship activities on parkland, FCPA staff provides technical and logistical assistance, advertising and marketing, education and outreach, and guidance on county regulations. Staff from NVSWCD, FCPA and DPWES often participate in and make presentations at environmental group meetings.

The Fairfax Watershed Network is a group of organizations, agencies, friends of groups, and individuals that support and promote the improvement and protection of Fairfax County's streams and watersheds, primarily through its annual support and participation in the annual Potomac River Clean Up.

Community Advisory Committees are formed as part of each watershed planning effort. The committees are diverse groups of community stakeholders with representatives from homeowners associations, business interests, the development community, environmental groups, churches, schools, and interested citizens. These committees can help to build community support for implementing watershed projects. Also, while initially formed to engage in a planning role, these committees often seek to incorporate stewardship roles. County agencies and partners will continue to provide technical and educational support, and information about stewardship opportunities.

In 2006, Great Falls applied to the National Wildlife Federation to become the 23rd Community Wildlife Habitat in the United States. Official certification was received on April 6, 2007. This means that four schools, three churches, two parks, one commercial cut flower business and 180 homes are officially providing food, water, shelter and safe places to raise young, which are the four essentials for all life. The Friends of Hidden Oaks Nature Center, the National Wildlife Federation and Supervisor Gross worked together to achieve the designation of Community Backyard Habitat for the Greater Mason District Area from the National Wildlife Federation. More than 300 homes were certified as backyard habitats as a part of this initiative. Efforts are now underway to achieve a county-wide Community Backyard Habitat designation.

In 2007, a group of county residents formed the Fairfax County Chapter of the Virginia Master Naturalist Program, a program sponsored by the Virginia Department of Forestry. This effort is supported by county, FCPA and NVSWCD staff. An initial class of 25 completed training in 2007, another 42 in 2008, 39 in 2009m 20 in 2010 and 20 in 2011, for a total of 146 trained Master Naturalists. In 2010, Fairfax Naturalists reported 2,714 hours of service to the community, which included 1,051 hours in education and outreach projects, 410 in citizen scientist projects, and 1,253 hours on stewardship projects.

In 2008, NVSWCD and FCPA partnered with Earth Sangha to design and install a rain garden at Marie Butler Leven Preserve, where Earth Sangha is developing a native plant arboretum.

In 2008, a group of citizens , supported by the Office of Private/Public Partnerships, organized into the Fairfax County Restoration Project (FCRP), which includes Lands and Waters, Eze Solutions, Clean Fairfax Council, DPZ, DPWES, NVSWCD, Virginia Department of Forestry, TransUrban, Northrup Grumman, Friends of Accotink, Audubon Society of Northern Virginia, GMU Office of Sustainability and D. Banzon Design. FCRP's mission is to strengthen the connection between people and nature through community action and to work collaboratively to promote efforts to restore ecosystem function in the county. FCRP Projects have included partnering with NVSWCD and DPWES and to conduct two workshops for homeowners on ways to manage their property using environmentally sound practices. In 2011, NVSWCD and

DPWES collaborated with the Braddock District Supervisor's office to conduct another similar workshop. FCRP secured a $5,000 Transurban-Fluor Capital Beltway Community Grant to assist the Raintree HOA with erosion control and replanting along property that was defoliated by HOT Lanes construction. Another Transurban-Fluor grant is funding a brochure for homeowners on how and why to plant their yards with native plants. A tree gifting program, ReForest Fairfax, is being developed with Fairfax ReLeaf. It includes a web-based program that shows where and when the trees are planted. Future projects include partnering with Reston Association to screen the educational documentary, *Dirt: The Movie*, and collaborating with several stakeholders in the Hot Lanes project (contractors, Transurban, Dranesville District Supervisor's office, and county staff) to implement enhanced detention designs in some of the new Hot Lanes stormwater ponds.

Resources

Staff resources to support these citizen-based efforts are budgeted as part of the DPWES, FCPA and NVSWCD programs.

EIP13-ES08-05(B). Park Authority Stewardship Education

Description of Action
The Park Authority's Stewardship Education project is an outreach and education effort on county stewardship, which includes the development and communication of stewardship messages for staff, partners, and citizens across the county. This project allows the Park Authority to educate both staff and citizens countywide in important stewardship issues and the county's commitment to stewardship and to engage them in practicing good stewardship.

Environmental Agenda Objectives Supported:
Environmental Stewardship (General)
Parks, Trails, and Open Space (General)
Water Quality 1

Other Plans or Documents where this action appears or that it supports:
Comprehensive Plan
Park Authority Strategic Plan
Park Authority Policy Manual
Park Authority Natural Resource Management Plan
Great Parks, Great Communities Plan

Lead Agency
Fairfax County Park Authority

Status/Plans/Outcomes
The Park Authority is implementing the stewardship education initiative through a series of brochures and products related to natural resource stewardship. The brochures include a county-wide stewardship message with a consistent style. Thirteen brochures have been published to date, including "Treasures," "Wildlife," "Invasive Backyard Plants," "Invasive Forest Plants," "Trees," "Spiders, Snakes and Slime Molds," "Wildlife Conflict," "Pets in Parks," and "Native Backyard Plants," "Underground World," "Water," "Night," and "Pollen." Eight Highway Cards about "Trees," "White-tailed Deer," "Canada Geese," "Beaver," Foxes," "Coyote," "Deadwood," and "Bees" have been published. Highway Cards are designed to respond to more seasonal interests, provide contact information, or cover non-evergreen issues. The Park Authority worked with county partners such as Urban Forestry and the Northern Virginia Soil and Water Conservation District to ensure the most up-to-date information is presented. The Park Authority also has published the "Stewardship Primer." Designed to explain the stewardship vision, the primer gives basic information to encourage Park Authority staff to be good stewards of public land. In 2007, the Park Authority's Stewardship Education Team developed media for a storm drain marking initiative in staff parks including a poster, a bottle shaped highway card, buttons for staff to wear and window clings to hang in park entryways. In Spring 2008, the Fairfax County Park Authority released a set of Non-native Invasive Identification and Control cards for 29 of the most commonly found non-native invasive plants

in Fairfax County. These cards were recognized as a Platinum recipient in the MarComm, a national organization that makes Marketing and Communications awards. In 2010, the Park Authority created a series of large, free-standing banners. Based on the themes in the stewardship brochures, these large banners provide a colorful educational and an attractive tool for interpreters to use at educational fairs and events.

In 2009, the Northern Virginia Soil and Water Conservation District and Fairfax County Park Authority collaborated to publish a handbook for homeowners in northern Virginia on how to plan, design, construct and maintain rain gardens in their yards. It is available in print and on line at www.fairfaxcounty.gov/nvswcd/raingardenbk.pdf .

Resources

$135,000 funded at FY 2004 Carryover and $150,000 funded at FY 2006 Carryover, in support of the Environmental Agenda.

$50,000 funded in FY 2008 budget for environmental projects.

Existing resources were used in FY 2009, FY 2010 and FY 2011.

EIP13-ES08-06(B). Invasive Management Program

Description of Action

The Board of Supervisors (BOS) has provided funding for invasive plant removals on parkland over the past few years. The Park Authority used this funding to develop the Invasive Management Area (IMA) pilot program, as well as several other initiatives.

Project Goals

- Capitalize on support and momentum from the public to do something about non-native, invasive plant and animal species; garner community involvement and support.
- Educate the public about the effects of non-native, invasive plant and animal species.
- Participate in outreach opportunities regarding non-native, invasive plant and animal species.
- Develop healthy woodlots with uneven-aged stands of mixed trees, shrubs and ground cover with a floor of leaf litter and debris that are free of invasive plant species.

Partnerships and Consulted Organizations

Northern Virginia Soil and Water Conservation District
Earth Sangha
Fairfax ReLeaf
Fairfax County, Department of Public Works and Environmental Services
Virginia Native Plant Society, Potowmack Chapter
Friends of Riverbend Park
Reston Association
Weed Warriors, The Nature Conservancy
Weed Warriors, Montgomery County Parks
InvasivePlants.org
Audubon at Home
Northern Virginia Conservation Trust
Potomac Conservancy
Fairfax Master Naturalists

The IMA program is a volunteer-led pilot project designed to reduce invasive plants on parklands and to draw attention to the threat invasive plants pose to natural areas. The program is unique in that volunteer leaders must take on coordination responsibility and commit to adopting a site for a year. The program contains a monitoring component for both the ecological impacts as well as the success of this volunteer model. Leaders for up to 42 sites commit to four work-days per year, including both invasive plant removals and re-planting. The Park Authority is carrying out the program in partnership with a number of organizations, including the Virginia Department of Forestry and Earth Sangha and training assistance from the Northern Virginia Soil and Water Conservation District. To date, over 18,000 hours of volunteer service have been contributed by more than 4,500 participants in over 1,000 workdays. IMA expanded in June 2010 with the creation of the Early Detection Rapid Response (EDRR) Program. This program trains volunteers to survey parkland for isolated populations of highly aggressive non-native

plant species. Once identified, IMA coordinated removal of priority species so that these small populations do not become big issues.

In addition to the IMA volunteer program, other priority areas for non-native invasive species were addressed:

1. Invasive Conservation Corps (ICC) – (2007 and 20008) This summer intern program supported 21 IMA, riparian buffer plantings, low impact development demonstration sites, and staffed sites with invasive plant removals. The large crew of summer interns conducted invasive plant removals throughout the county, and demonstrated the effectiveness of staff habitat managers, completing nearly as much work as the year-long volunteer program. The first year of internship included a crew leader and eight field technicians. The ICC team for 2008 had five members and continued to provide necessary staff support to invasive removal projects. The program was discontinued in 2009 due to lack of funding. Individual interns have been supported at staffed parks to complete invasive species maps and removal projects.

2. Non-Native Invasive Plant Assessment of Prioritization (NNIAP) – This consultant project is a comprehensive and independent assessment of the occurrence and threat of invasive non-native plants in parkland. A Fairfax County-specific prioritization scheme and a control program were developed. The consultant provided recommendations on what an invasive plant removal program should look like, including cost estimates. Based upon these recommendations, it is estimated that a program would cost upwards of $3.5 million per year, including a mixture of staff and contracted work. The consultant also made recommendations on 12 best management practices, focusing on prevention strategies, which include the creation of an Early Detection Rapid Response program. The contract was awarded in the spring of 2008 completed in 2009. More than 400 acres of parkland have been assessed with this methodology.

3. Internal Support – Equipment and Contractor Services – Many of the Resource Management Division's sites are now equipped with tools, chemicals and equipment for invasive removal. An internal funding mechanism has been established for these needs. Several interns have been supported in part or in full to develop invasive species maps for individual park sites. In addition, in certain cases, contractor support is used to assist in removals at sites with an ongoing commitment for invasive removal, e.g., IMA sites and staffed sites that have committed to maintenance.

4. Education and Interpretation – This area covers signage, publications, and exhibits related to non-native invasive removal projects.

5. Contractor Support – Contractor support for control of high priority invasive species began in 2008. This contractor support is used in conjunction with other methodologies to assist in removals at sites with an ongoing commitment for invasive removal, e.g., IMA sites, staffed sites, riparian buffer restoration sites, and high priority natural areas.

6. Early Detection Rapid Response – In 2009, a new volunteer program was created to assist with a survey of natural areas and parkland to locate small, local populations of highly invasive/aggressive invasive species before the population becomes large scale. The 13 core

volunteers of Early Detection Rapid Response and several episodic volunteers have surveyed over 200 acres of parkland for several highly aggressive non-native species that are either not present or present in very low quantities in Fairfax County. This program has identified at least one new species to the county and has made new reports of several small populations of several small populations of highly aggressive non-native species so that removal action can occur before the population is too large.

Environmental Agenda Objectives Supported

Parks Trails, and Open Space (General)
Environmental Stewardship 1, 2, 3, 4, 5 and 6

Other Plans or Documents where this action appears or that it supports

Comprehensive Plan
Park Authority Strategic Plan
Park Authority Policy Manual
Park Authority Natural Resource Management Plan
Great Parks, Great Communities Plan

Lead Agency:

Park Authority

Status/Plans/Outcomes

The Invasive Management Area program began in March 2006, and continues in 2011. The Invasive Conservation Corps was offered in 2007 and 2008. The consultant report, the Non-Native Invasive Assessment and Prioritization Plan, was completed in 2009. The IMA program now has 42 sites with over 4,500 participants, many of them youth. More than 18,000 volunteer hours have been contributed to the project since its inception. Significant reductions of non-native invasive species within the IMA sites have been documented (averaging a 36% reduction in cover).

Resources

Funding History:
$100,000 from FY 2005 Carryover, as well as volunteer labor. $50,000 matching grant funding provided by National Fish and Wildlife Foundations' Small Watersheds Grant Program. $500 grant from the Corporate Community Relations Council.

$300,000 additional funding from FY 2006 Carryover, in support of the Environmental Agenda.

$150,000 funded in FY 2008 budget for environmental projects.

$150,000 funded in the FY 2009 budget for environmental projects.

Existing resources were used in FY 2010 and FY 2011.

$70,000 funded in the FY 2012 budget for environmental projects.

The Invasive Management Area Manager Coordinator position was converted to a merit position in FY 2011 and the Department of Management and Budget has committed to funding it in the Park Authority's FY2013 budget. (It currently is funded out of the Environmental Improvement Program funds.)

Funding Need

FY 2013: $200,000. This program can not continue without funding in the FY 2013 budget. These existing projects require a minimum of $200,000 per year to maintain.
Long-term recurring Need: Cost for a non-native invasive plant removal program is upwards of $4.5 million per year.

EIP13-ES08-10(B). Partnering with Non-Profit Tree Planting Groups in Establishing a Countywide Tree Planting Program

Description of Action

This action builds upon the success that has resulted from partnerships formed between Fairfax County and non-profit tree planting groups and complements an existing BOS directive to establish a tree fund and a countywide tree planting program for air quality improvement. This action also supports a June 2007 Board Matter in which the Board officially adopted a 30-year tree canopy goal for Fairfax County (see EIP12-ES09-08 (B).

Each year, non-profits such as Fairfax ReLeaf, Inc. and Earth Sangha grow native trees and organize tree planting and forest restoration projects on public lands and on common open space. These efforts result in thousands of trees being planted on an annual basis; but, just as importantly, these groups provide opportunities for citizens to connect with nature and to learn lessons in civic responsibility and environmental stewardship. These groups connect volunteers such as Girl Scouts, Boy Scouts, student clubs, garden clubs, church groups and homeowners associations with opportunities to collect native seeds, propagate plants, and plant trees. Many of their activities directly support county efforts relating to riparian restoration, forest habitat restoration, and street tree plantings. Here are examples of ways that Fairfax County interacts with non-profit tree planting groups at present:

- Fairfax County provides a small office space, telephone service, and conference area for Fairfax ReLeaf, which serves as that organization's headquarters.
- The Urban Forest Management Division, DPWES provides a staff liaison to attend Fairfax ReLeaf Board meetings and to help support their tree nursery and tree planting activities.
- Fairfax ReLeaf sends representatives to the monthly Tree Commission meetings in order to interact with the Tree Commission on tree-related issues and projects.
- FCPA provides Earth Sangha with a space to operate a native plant nursery at Franconia Park. This nursery produces thousands of native plants per year, many of which make their way to county properties via forest restoration and tree planting projects.
- FCPA and Earth Sangha signed an agreement with the Fairfax County Park Authority to develop a "Native Arboretum" at the 20-acre Marie Butler Leven Preserve in McLean. The development of the arboretum will gradually transform the Preserve into a comprehensive display of plants native to our region.
- In 2007, the Stormwater Business Area, DPWES provided $10,000 to support Fairfax ReLeaf's 2007 Trees Campaign. This project, which is being done in partnership with the Tree Commission and the NVSWCD will result in over 2,000 trees being planted on public property and common open space in Fairfax County.
- In 2009, and again in 2010, the non-profit and canopy goal partners are estimated to have planted more than 9,000 trees.

Non-profit tree planting groups typically struggle to find funding needed to purchase trees and for operating expenses. Out of necessity, the time and energy these groups expend pursuing grants and soliciting donations often exceeds the time and energy they expend on tree planting.

If funded, this project would provide a modest level of financial support to non-profit tree planting groups over a five-year period. In return, the county would gain substantial ecologic and socio-economic benefits associated with the planting of thousands of trees on an annual basis, and with that tree planting program, community involvement in its environmental stewardship efforts. The funding for this project would be administered through the county's Tree Preservation and Planting Fund (TPPF). The TPPF was set up in response to a June 20, 2005 Board Matter directing county staff to establish a funding mechanism for a county-wide tree planting program. Staff was also directed to establish criteria to govern disbursement, tracking and annual reporting for any funds used from the TPPF. This existing mechanism and process would provide for fiscal accountability, and a methodology for the county to evaluate the effectiveness and progress of tree planting programs.

Environmental Agenda Objectives Supported

Environmental Stewardship 1, 2, 3, 4 and 6
Parks Trails and Open Space (General)
Air Quality & Transportation 7
Water Quality 1, 7, 9, 10, 12

Other Plans or Documents where this action appears or that it supports

The Fairfax County Tree Action Plan
30-Year Tree Canopy Goal
New Millennium Occoquan Watershed Task Force Report
Cool Counties Climate Stabilization Initiative
Air Quality Management Plan
Fairfax County Energy Policy
Great Parks, Great Communities Plan

Lead Agency:

DPWES, Urban Forest Management Division (UFMD)

Status/Plans/Outcomes

Instead of establishing a Tree Preservation and Planting Fund (TPPF), funding for this project has been provided through the Contributory Agency Fund in 2011. Three non-profits received $88,000 – Fairfax ReLeaf, Earth Sangha, and Center for Chesapeake Communities – to build organizational capacity in support of a county-wide tree planting program.

It is conservatively estimated that providing up to $100,000 annually to non-profit tree planting groups for the next five years could result in over 25,000 trees being planted in that same time frame (or 5,000 trees per year). The tree cover gains from this project could possibly be used be used as a credited air quality improvement practice in future Washington Metropolitan Air Quality Plans. Expenditures from this project would also be used to help qualify Fairfax County for the annual Tree City USA Award. $100,000 was requested for FY 2009 due to the new tree canopy goal schedule and the need to build non-profit organizational capacity.

Resources

$50,000 was funded in FY 2008
$109,000 was funded in FY 2009
$93,350 was funded in FY 2010
$88,000 was funded in FY 2011
$88,000 was funded in FY 2012

Additional funding of $110,000 needed for FY 2013.

EIP13-ES09-06(B). Joined Energy Star Challenge

Description of Action

The ENERGY STAR Challenge is a national call-to-action to improve the energy efficiency of America's commercial and industrial buildings by 10 percent or more.

Challenge participants and their members are encouraged to:

- Measure and track energy use
- Develop a plan for energy improvements
- Make energy efficiency upgrades
- Help spread the energy efficiency word to others.

The US Environmental Protection Agency (EPA) estimates that if the energy efficiency of commercial and industrial buildings in the US improved 10 percent, Americans would save about $20 billion and reduce greenhouse gases equal to the emissions from about 30 million vehicles. If Fairfax reduced energy consumption in county facilities, it would save approximately $1 million in utility expenses.

Environmental Agenda Objectives Supported

Environmental Stewardship – 2, 5
Air Quality and Transportation - general

Other Plans or Documents where this action appears or that it supports

Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency

Facilities Management Department

Status/Plans/Outcomes

Fairfax County has signed up for the challenge. Energy usage is measured and tracked and there is a plan for energy improvements. Also, energy efficiency improvements are being made during capital renewal projects. Facilities Management is spreading the word to others, through programs like the Change a Light Campaign.

Resources

Existing staffing may be utilized to continue with this effort.
Current staff efforts have been focused on completing capital renewal projects and further progress on this item is awaiting additional staffing availability.

EIP13-ES09-08(B). 30-Year Tree Canopy Goal

Description of Action

This action supports a June, 2007 Board Matter in which the Board officially adopted a 30-year tree canopy goal for Fairfax County. In addition this action also supports: Chesapeake Bay Program's Expanded Riparian Buffer Goals to encourage communities to adopt local goals to increase urban tree canopy cover and encourage measures to attain the established goals: and, recommendations of the Tree Action Plan to "identify maximum attainable and sustainable tree canopy goals"

According to Urban Forest Management Division (UFMD) long-range tree canopy modeling, even if our community, continues to preserve and plant trees at present levels of effort, our tree canopy will still decrease in size from 41% to around 37% over the next 30 years. This loss (10,200 acres) equates in area to seven Huntley Meadows Parks (the largest Fairfax County Park) and will go hand in hand with the loss of significant levels of environmental and social services associated with tree canopy such as air pollution removal, carbon storage; energy conservation; and, stormwater management.

In 2007, in order to reverse the loss and to actually increase canopy levels, the Board adopted a 30-year tree canopy goal of 45%. Reaching this goal requires that we increase our present canopy levels by approximately 20,400 acres by the year 2037. Although canopy gains are expected from natural processes, this goal requires a large-scale tree planting program spread over a 30-year period. At present, our community is estimated to plant 21,000 trees annually. The adopted goal requires that we increase current planting levels to an average of 84,000 trees annually. The total numbers of trees that are needed to reach 45% is estimated at 2.6 million. It is estimated that it will cost our community between 250 to 500 million dollars to install this number of trees depending on the size and species of trees that are eventually planted. However, the benefits provided by the added tree canopy should more than off-set costs associated with planting and maintaining the new canopy (see Status/Plans/Outcomes below for more details).

Environmental Agenda Objectives Supported:

Environmental Stewardship 2, 3, 4, 5 and 6
Air Quality and Transportation (General)
Water Quality 7, 10, 12
Parks Trails and Open Space (General)
Great Parks, Great Communities Plan

Other Plans or Documents where this action appears or that it supports:

Fairfax County Tree Action Plan
Fairfax County's 30-year Tree Canopy Goal
Air Quality Management Plan
Cool Counties Climate Stabilization Initiative
Tree Conservation Measure of the DC/MD/VA Metropolitan Area SIP (air quality plan)
New Millennium Occoquan Watershed Task Force Report
Fairfax County Energy Policy

Lead Agency:

DPWES, Urban Forest Management Division

Status/Plans/Outcomes

Status and Plans: This action is underway. In 2007, UFMD convened a series of stakeholder meetings that identified short, medium and long-term actions, and the resources that are needed to support the community tree planting program. An initial analysis of the tree planting potential of 31,357 acres of county-owned property and 15,500 acres of commonly-owned open space found that only 4,200 acres have potential for additional tree planting. The same analysis found that 33,170 of 107,000 (31%) acres of low-density residential land showed potential to accommodate additional trees. Therefore, the lion's share of tree planting will need to occur on privately-owned residential lots. UFMD will also conduct a Strategic Urban Forests Assessment for each of the 30 major watersheds. This assessment should identify specific areas and properties that have potential for tree planting (see WQ08-09(B) Establishing Tree Cover Goals for Watersheds).

The level of resources needed to obtain this goal, coupled with the geographic distribution of available planting space requires that substantial resources be dedicated towards educating private property owners about the value of preserving and planting trees. Of the estimated average of 84,000 trees planted annually that are required to reach the 30-year tree canopy goal, only about 12 percent is being planted currently by volunteer organizations and on public property. The majority of the balance will need to be planted on private residential property. Educating and engaging the community will be absolutely essential for success in reaching the tree canopy goal. (see ES08-10 (B) Partnering with Non-Profit Tree Planting Groups to Establish a Countywide Tree Planting Program and ES08-11 (C) Promoting Stewardship of Urban Forest Resources).

Outcomes: The stormwater management capacity that is associated with 21,000 acres of mature tree canopy is estimated to cost $510,632,400 to construct. This sum alone offsets the total cost estimated for this 30-year tree planting proposal. The canopy increase also has the capacity to provide an additional 5.3 million dollars of air pollution removal, and 4.7 million dollars of energy conservation services each year for the life of the trees, which could easily reach 70 years or more.

The following table provides details on the monetary values associated with the environmental services provided by 20,400 acres of mature tree canopy.

Service	Per acre value in $	Acreage of trees	Estimate of Annual Benefit (based on 2007 values)
Air Pollution Removal	$261 [1]	20,400	$5,324,400
Carbon Sequestration	$5-$57 [2]	20,400	$102,000 – $1,162,800
Energy Conservation	$231 [3]	20,400	$4,712,400
Stormwater Management	$25,031 [4] (one-time savings)	20,400	$510,632,400 (one-time savings)

Sources:
[1.] American Forests 2002
[2.] Birdsey 2005 / Chicago Climate Exchange 2006 / European Climate Exchange 2006
[3.] USDA Forest Service / UFORE 2004
[4.] US Fish and Wildlife Service 2001

These monetary values are consistent with the average cost benefits ratio associated with tree programs in the Piedmont Region. The USDA Forest Services estimates that over a 40-year period, $3.74 is returned for every $1 that a community invests in planting and maintaining trees. *Piedmont Community Tree Guide: Benefits, Costs, and Strategic Planting November 2006 USDA Forest Service*,

Resources

The short-term resources needed for this action are identified in EIP13-ES08-10 (B) Partnering with Non-Profit Tree Planting Groups to Establish a Countywide Tree Planting Program, and EIP13-ES08-11 (C) Promoting Stewardship of Urban Forest Resources. Long term funding would require $2.6 million over 30 years.

EIP13-ES09-09(B). Development of an Energy Management Program Through the Establishment of a Countywide Energy Coordinator Position

Description of Action

Fairfax County has made progress towards improving the energy efficiency of its facilities. However, with the proper application of resources through a program to coordinate efforts, set reduction goals, and implement renewable energy technologies, the County can make significantly more progress, resulting in saving energy, reducing emissions, and even dollar savings. Fairfax County's commitment to Environmental Stewardship can be supported by extending this program to include outreach and education to citizens and businesses.

The Metropolitan Washington Council of Governments (MWCOG) has recently established a Climate Energy and Environment Policy Committee to develop regional greenhouse gas reduction strategies and goals. Further, the Fairfax County Board of Supervisors (BOS) has taken the lead in developing a National Cool Counties Initiative aimed at encouraging and providing guidance to local governments to develop short and long-term goals to reduce corporate greenhouse gas emissions 80% by 2050.

Energy use for Fairfax County Government is distributed amongst several agencies, including the School Board, Facilities Management Department (FMD), Park Authority, Department of Housing and Community Development, Department of Systems Management for Human Services and Department of Public Works. Consequently, the degree to which each agency pursues energy efficiency and conservation varies widely. For example, Schools, FMD and Parks, being the largest users, have dedicated energy managers that track energy use with database programs in hundreds of buildings, and have specific goals and tactics to lower consumption. As new buildings are designed, it is important that their energy use is carefully evaluated and minimized in the design stages. At the same time, it is critical that existing buildings be retrofitted to obtain increased energy efficiency. With hundreds of buildings operated by multiple agencies, a coordinated effort is necessary to direct the county's energy conservation efforts.

The Countywide Energy Coordinator is necessary not only for cross-organizational coordination, but to coordinate with our regional partners, such as COG, EPA, and National Association of Counties. The countywide Energy Coordinator will also act to facilitate interaction and cooperation with environmental groups, such as the Sierra Club, and other counties, particularly Arlington, Prince William, Loudon, and Montgomery counties, to help our region become compliant with the State Implementation Plan requirements.

The countywide Energy Coordinator would not constitute the county's Energy Management program, in that it is anticipated that energy management will need to be developed within a number of agencies, and that one staff position will prove insufficient to meet what is likely to be a high demand for service. Rather, it is expected that the Countywide Energy Coordinator would coordinate efforts among a number of county agencies to build coordinated, cross-agency efforts to enhance energy conservation. The position would also provide an initial point of focus to support implementation of energy conservation practices in the county. A countywide Energy Coordinator would serve as a central conduit of information to and from agencies and the community to better understand and leverage energy conservation practices employed and lessons learned. This position would take the lead role in the Energy Subcommittee of the Environmental Coordinating Committee. The committee will consist of members of various agencies that have a significant role with energy consumption in their respective agency. The countywide Energy Coordinator will make daily decisions as required to expedite processes; however, decisions that involve inter-agency or governmental commitments will be brought to this committee for discussion.

The establishment of this position is an interim step in development of a county Energy Management program, and would not constitute the program itself. The need for additional staffing and resources would be identified for a more comprehensive county effort. A possible outcome of the inter-agency coordination effort to be led by this new position could be the establishment of an energy efficiency fund, which could, at least in part, defray expenses associated with the establishment of this position.

Environmental Agenda Objectives Supported

Environmental Stewardship 5

Other Plans or Documents where this action appears or that it supports:

Comprehensive Plan
Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency

County Executive's Office

Status/Plans/Outcomes

At the direction of the Board of Supervisors' Environmental Committee in October 2007, the County Executive included within the fiscal year 2009 advertised budget an Energy Coordinator position. In April of 2008, the Board of Supervisors adopted the FY 2009 budget with the Energy Coordinator position authorized in the budget. The position was to be established through the abolishment of a vacant assistant to the County Executive position. Although the County Executive had every intention of filling the position, due to the worsening fiscal crisis in

the county, which included a FY 2010 projected deficit of more than $500 million, and the FY 2009 revenues that were projected down $58.2 million (which equates to a 1.75% decrease in the FY 2009 Adopted Budget), the County Executive concluded that filling the vacant Energy Coordinator position would not be fiscally prudent at this time.

While the current fiscal crisis has created a significant impediment to filling the Energy Coordinator position, after consulting with appropriate staff, the County Executive established an Energy Efficiency and Conservation Coordinating Committee (EECCC), which serves as an interagency forum for cross-organizational collaboration and coordination of energy efficiency and conservation efforts and which functions to fulfill the major roles of the energy Coordinator position as outlined in this action fact sheet.

Deputy County Executive Dave Molchany will act as the central point of coordination from the County Executive's office. Steve Sinclair from the Utilities Branch of the Department of Cable and Consumer Services will provide staff support for the committee. Kambiz Agazi will provide coordination between the committee and the county environmental efforts.

The EECCC functions in a similar capacity as the county's Environmental Coordinating Committee (ECC), which is interwoven into the county's strategic plan as it related to the environment. The ECC, among its many other accomplishments, produces the award-winning Environmental Improvement Program (EIP) that supports implementation of actions to support the Board's Environmental Agenda.

While the EECCC would not constitute the county's Energy Management Program, in that it is anticipated that energy management will need to be developed within a number of agencies, this committee ensures an appropriate level of coordination and review of the county's energy efficiency policies and initiatives and establishes priorities and manages capacity to create opportunities for implementation of cost and emissions-avoidance actions.

The EECCC will consist of members of various agencies that have a significant role with energy consumption in their respective agencies. Agencies that participate in the EECCC include: Department of Cable Communications and Consumer Protection, Department of Public Works and Environmental Services, Park Authority, Department of Housing and Community Development, Facilities Management Department, Department of Vehicle Services, Public Schools, Department of Information Technology, Department of Purchasing and Supply Management, Department of Management of Budget, Department of Planning and Zoning, and the Environmental Coordinator.

The EECCC has already begun to enhance the county's existing energy efficiency efforts by providing a more focused process for the integration and implementation of energy management efforts countywide to include the development and administration of projects to be funded through the county's federal Energy Efficiency and Conservation Block Grant process as well as providing technical support for energy related proffers associated with current and future Tyson's Corner zoning applications..

Resources

While the Board of Supervisors approved funding for this position in the adopted FY 2009 budget, the position was never filled and as a consequence of the fiscal crisis, the position was later eliminated as part of the FY 2010 budget.

Countywide Energy Coordinator Definition

Under the general direction of the county's Environmental Coordinator, the countywide Energy Coordinator is responsible for planning and formulating energy policy and programs for Fairfax County, including:

- Supporting the development of proposed legislation
- Representing the county on local, State and regional energy related task forces and committees
- Overseeing the implementation of energy policies in Fairfax County
- Planning and directing energy efficiency monitoring and reporting
- Coordinating public outreach
- The countywide Energy Coordinator recommends legislation, but is empowered by the County Executive to dictate and implement cross-agency policy, goals, and standards
- Define the roles and responsibilities, as well as qualifications, of a **future** Community Energy Outreach coordinator or team. As directed, assist in the implementation of this team

TYPICAL TASKS

1) **Plans and coordinates the county's energy policy and programs.** 50%
   - Develops plans, policies, and new programs to implement and achieve improved energy efficiency.
   - Supports the development of energy legislation, along with supporting budget and other documentation relating to its impacts on the county's policy and operations.
   - Reviews existing county ordinances to ensure conformity to proposed and existing legislation.
   - Works with code officials and design professionals to revise, modify, and update building codes to encourage energy efficiency.
   - Administers multi-county agency efforts to implement energy efficiency.
   - Responsible for oversight and assurance that all county agencies are implementing their respective tasks.
   - Participates in and directs studies, research, tests, and evaluations of new energy efficiency approaches, measures, practices, and equipment.
   - Develops new and innovative goals, policies, and objectives in response to arising energy concerns and issues in the county.
   - Sets countywide energy conservation goals. Expands the use of alternative energy sources (wind power, solar, methane, etc).

2) **Represents the county on energy advisory committees and task forces**. 20%
   - Provides advice and guidance.
   - Presents and discusses policy recommendations.
   - Leads the county's energy subcommittee.
   - Provides staff support to technical committees, including coordinating meetings and workshops
   - Serves as the county's representative to the Metropolitan Washington Council of Governments regarding all energy related issues.
   - Coordinates an interagency energy subcommittee of the Environmental Coordinating Committee that would develop recommendations for strengthening energy efficiency efforts in Fairfax County. Staff from the Facilities Management Department, Department of Public Works and Environmental Services, Park Authority, Public Schools, and Department of Housing as well as the Environmental Coordinator and other agencies as needed, would serve on this subcommittee.
   - The subcommittee would prepare recommendations for consideration by the Board regarding staffing, resources, and training needed to strengthen public and private sector-related energy efficiency efforts in Fairfax County as well as policy, regulatory and legislative considerations. The review would include a consideration of the extent to which the county could/should offer incentives for energy efficient design development.
   - Coordinate energy purchases of gas and electricity with the various agencies.

3) **Develops and oversees public education and outreach programs.** 10%
   - Meets with citizens, community leaders, elected officials, attorneys, and industry regarding the interpretation of regulatory requirements and implementation of energy conservation measures.
   - Serve as a liaison to county residents who are interested in incorporating energy efficiency into home renovation and addition projects.
   - Develop or compile available energy efficiency resource guidance for use by interested homeowners and businesses, and publicize the availability of this guidance.
   - Coordinate outreach with citizens groups to collect and disseminate information.
   - Develop a plan to provide free or reduced cost energy audits to citizens.

4) **Plans and directs energy efficiency monitoring and reporting.** 10%
   - Reviews multi-agency energy efficiency performance to ensure effective enforcement in relation to energy regulations and policies, along with applicable engineering standards and principles, and State and Federal laws.
   - Prepares reports, technical memoranda, and policy recommendations to improve energy efficiency.
   - Tracks Federal and State regulations and guidance issued to implement state Executive Order 48.
   - Presents testimony at county and Board Environmental Committee meetings relating to the county's Energy Programs.

- Responds to staff and Board of Supervisor requests for detailed information, data and technical reports.
- Tracks energy usage for the county as a whole.
- Participates and coordinates Federal, State and local energy management programs and initiatives
- Develops a plan for energy audits for county buildings and uses results to prioritize and facilitate energy conservation projects for county agencies.
- Based on changing budget constraints and new technologies, analyzes previous fiscal years expenditures and plans for development of energy conservation projects.
- Makes recommendations for cost-effective use of resources and contracts.

5) **Oversees Energy Management Program budget preparation and responsibilities**. 5%
   - Researches and prepares proposals for energy program work, such as implementing renewable energy sources.
   - Develops standard operating procedures for the energy program.
   - Develops recommendations for the establishment and funding of an energy conservation fund that would be used to support energy efficiency efforts in Fairfax County.

6) **Supervises program staff, interns, or contractual agreements**. 5%
   - Recruits and selects staff; evaluates performance, develops training plans, and recommends personnel actions.

EIP13-ES09-10(B). Energy Outreach Program

Description of Action

This program is intended to make the citizens of Fairfax County more aware of their personal energy consumption and to educate them on how they can help reduce usage. The program was the subject of a Request for Proposal (RFP) that was drafted and released by a subcommittee of the county's Energy Efficiency and Conservation Coordinating Committee (EECCC) in May 2011. The RFP solicited proposals to develop and implement a branded residential energy education and outreach program that educates citizens about their home energy consumption, explains the home energy assessment (audit) process, and encourages residents to undertake energy-savings measures. To achieve these objectives, the RFP envisions the use of multiple platforms and approaches, such as:

- An outreach and marketing program targeting community organizations, such as homeowners associations (especially of single-builder developments), civic associations and faith-based groups, that supports residential energy efficiency and conservation initiatives with presentations, templates for action and peer-to-peer problem solving,

- A social media and marketing program that uses the electronic tools available to the county, such as an Environment Facebook page, in addition to the county's Facebook and Twitter accounts and its *NewsWire* feeds, to share success stories and communicate with residents,

- A compilation of sample energy audits from representative homes located in Fairfax County, with the audit process, assessment and improvements available both online and in print,

- A user-friendly interactive website with opportunities for visitor engagement.

Environmental Agenda Objectives Supported:

Environmental Stewardship 2 and 3
Air Quality and Transportation (general)

Other Plans or Documents where this action appears or that it supports:

Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agencies:

Department of Cable and Consumer Services – Public Utilities Branch

Office of Public Affairs
Energy Efficiency and Conservation Coordinating Committee (EECCC)

Status/Plans/Outcomes

A subcommittee of the county's Energy Efficiency and Conservation Coordinating Committee drafted an RFP for the development and implementation of a residential energy education and outreach program. One or more awards should be issued by September 2011, with the program expected to be operational in early 2012. The Environment Facebook page was launched in 2011. A number of energy-related webpages have been added to the county's website, including those addressing green buildings and energy efficiency and conservation. The county's energy outreach webpage also is being developed. It is anticipated that this program will continue to evolve over time.

Resources

$421,297 for the energy education and outreach program will be funded by a portion of the county's Energy Efficiency and Conservation Block Grant (EECBG), which is a federal grant funded by the American Recovery and Reinvestment Act of 2009. The county's EECBG award term ends on October 25, 2012 and all activities funded by the EECBG grant must be concluded before that date. The RFP asked respondents to explain whether or not and how the county could continue some or all of the residential energy education and outreach program beyond the end of the EECBG award period.

EIP13-ES09-12(B). Government Center HVAC Component Replacement

Description of Action

1) The Government Center currently houses three 900-ton chillers, with associated cooling towers and pumps. This equipment is original to the facility and is approaching the end of its useful life. The chillers are becoming more difficult to repair as replacement parts are limited. At the same time, the refrigerant used by the chillers is no longer in production as it is not "environmentally friendly". New chillers would be more efficient and would use a more environmentally appropriate refrigerant. Associated pumps and cooling towers should be replaced at the same time.
2) The kitchen heat recovery equipment is approaching the end of its useful life and needs replacement.
3) The VAV boxes throughout the facility are pneumatic and should be replaced with the DDC version to take full advantage of the building automation system. Pneumatic systems historically consume more energy due to the system being prone to air leaks.

Environmental Agenda Objectives Supported

Environmental Stewardship 5
Air Quality and Transportation (General)

Other Plans or Documents where this action appears or that it supports

Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency

Facilities Management Department

Status/Plans/Outcomes

These are necessary for planned capital renewal efforts to prevent emergency replacements; however, all three equipment replacements would result in energy savings. The chiller plant replacement project (Action item 1) was completed in March 2011.

Resources

The $4,400,000 need to pay for this capital renewal work was requested under Facilities Management CIP FY2009. The Board of Supervisors approved the FY 2009 budget to include the chiller replacement for $2,200,000. The contract for the chiller plant has been awarded and will be done in FY 2011. Other items remain unfunded at this time (kitchen heat recovery equipment and VAV boxes throughout the building).

EIP13-ES09-13(B). Install Energy Management Control Systems in Remaining County Facilities

Description of Action

At the June 11, 2007 Board of Supervisors (BOS) Environmental Committee meeting, a demonstration was provided on the energy management control systems (EMCS) that Facilities Management Division (FMD) uses to manage energy consumption in county facilities. Currently, there are only 77 of 180 facilities that have EMCS installed. The BOS requested a cost to install systems in the remainder of county facilities. It is not necessary to install systems in all facilities, only ones that the county owns and maintains, and ones that are not about to undergo capital renewal or expansion.

Environmental Agenda Objectives Supported

Environmental Stewardship 5
Air Quality and Transportation (General)

Other Plans or Documents where this action appears or that it supports

Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency:

Facilities Management Department

Status/Plans/Outcomes

Installation of EMCS in facilities could be started in FY2009, but would take several years to complete.

Resources

The estimated cost to install EMCS in approximately 100 facilities is $4,000,000. The two facilities that installation of EMCS would have the greatest impact need to be considered, even if funding is not available for all of the facilities. Cost of installation at Gum Springs Community Center and Bailey's Community Center would be an estimated $400,000 combined. (This amount has been included in the estimate for all the facilities).

Funding to install EMCS at Gum Springs Community Center, Lillian Carey and Bailey's Community Center was funded through EECBG. Installation will be performed in FY 2012.

EIP12-ES09-14(B). Increase Energy Conservation Code Compliance

Description of Action
Building Plan Review (BPR) Division of DPWES Land Development Services (LDS) has increased compliance to the current International Energy Conservation Code (IECC) through focused training and improved resources. As the state adopts each successively more energy efficient code, the DPWES/LDS BPR Division is working to move designers and inspectors to more energy efficient, code compliant buildings. County efforts include:

- Building design details being required on architectural plans to show code compliant insulation R-values for plan review and field verification.
- Use of the DOE ComCheck Envelope Compliance to meet the IECC/ASHRAE 90.1 requirements for thermal envelope certified by the design professional for plan review.
- Heating, ventilating and air conditioning (HVAC) load calculations for sizing mechanical systems to show compliance with IECC and match the construction plans submitted for plan review.
- Continuing electrical compliance with the IECC through an Electrical Energy Compliance Certification Form completed by the design professional, electing compliance with IECC or ASHRAE 90.1.
- County staff training, improved resources and training of design professionals in the county PEER review program.

Environmental Agenda Objectives Supported:
Environmental Stewardship 5
Air Quality and Transportation (General)

Other Plans or Documents where this action appears or that it supports
Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency:
DPWES/LDS/BPR

Status/Plans/Outcomes

Residential and commercial Energy Code Enforcement committees have been formed in 2011 to determine if the 2009 code requirements can be done by plan review or inspections. Some energy code requirements are integral control software requirements. The committee will determine what is practical and what is not practical to enforce by either plan review, inspections or certified by a design professional.

County plan reviewers, PEER reviewers and designers attended training on the use and requirements of a newly created Energy Code Compliance Certification/checklist form

developed by Building Plan Review. Additional staff training is being developed targeting specific energy code issues for plan review and inspection. As new codes are adopted, update training will be provided. The 2009 energy code adoption is scheduled for fall 2010; update training is required by the state for all inspectors and plan reviewers.

BPR and inspection emphasis on insulation R-values has resulted in improved construction compliance by designers and contractors. A plan review emphasis for code compliant equipment sizing for commercial buildings has highlighted a previous lack of compliance by designers. Both commercial designers and residential HVAC tradesmen understand the 2006 energy code requirements better. Educating them on the 2009 energy code will take more time.

Approved building alteration plans are increasingly more thermally energy efficient to be code compliant. Based on requested calculations to support equipment sizing, projects are having lower initial equipment cost due to the smaller, correctly sized HVAC units.

Resources

DPWES/LDS/BPR spent $648 on IECC illustrated pocket guides for field inspectors and plan reviewers.

Staff time is planned for development of training and for training classes**.**

Code update training in the past has required travel, but local government staff have suggested to state that update training be provided on line. This would reduce time and travel costs. As yet, the state has not provided a training plan.

No additional resources are required.

EIP13-ES10-03(B). Implement Environmental Management System for Wastewater Management Program

Description of Action

The Wastewater Management Program (WWM) has an initiative to develop and implement an Environmental Management System that meets the requirements for certification within the Department of Environmental Quality's Virginia Environmental Excellence Program (VEEP). The WWM aspires to acquiring the highest level of recognition within the VEEP Program, which is the Extraordinary Environmental Enterprise level.

Environmental Agenda Objectives Supported

Water Quality (general)
Environmental Stewardship 5

Other Plans or Documents where this actions appears or that it supports

The Cool Counties Climate Stabilization Initiative
MS-4 Permit
Public Works and Environmental Services Strategic Plan
Fairfax County Energy Policy

Lead Agency

DPWES

Status/Plans/Outcomes

In March 2004 the Wastewater Management Program received the Environmental Enterprise (E2) certification. In July 2007, The WWM received Exemplary Environmental Enterprise (E3) certification. In June 2010, WWM received the Extraordinary Environmental Enterprise (E4) certification. This is the highest level of certification for an Environmental Management System at the state level in the VEEP Program. As the EMS program has been developed and implemented the following objectives have been attained:

- The Wastewater Management Division (WWM) received the Businesses for the Bay Award Environmental Excellence twice (2005 and 2006) for Outstanding Achievement for Nutrient (Phosphorus and Ammonia/nitrogen).

- Carbon Footprint of the Noman M. Cole, Jr. Pollution Control Plant (NMCPCP) was calculated and validated by an independent third party).

- The NMCPCP installed a solar powered mixer in one of the ponds in the summer of 2006.

- The Industrial Waste Section of the Wastewater Planning and Monitoring Section requested the replacement of zinc corrosion inhibitors with a zinc free formulation from Fairfax Water. This action will result in a reduction of zinc in the Noman Cole Plant's influent. The agreement was a culmination of 2 years work involving staff from VADEQ, Health Department, WPM & Fairfax Water.

- The Lab reduced deionized water usage by 8,040 gallons per year. Water conservation was accomplished as a result of an EMS initiative by the Lab.

- The Lab eliminated approximately 90% of Lab mercury waste (~90 g/yr). Mercury reduction was achieved by using alternate methods and reagents where possible.

- The Lab implemented electronic submittal of the DMR known as eDMR. Wastewater was one of the initial users of the new DEQ program. Electronic reporting of the monthly DMR can be accomplished from remote locations and eliminates mail or delivery time.

- Wastewater Management staff participate annually in the Potomac Watershed Cleanup.

- The Wastewater Collections Division is on the EPA website as a Case Study Agency Nationally Recognized Collection System.

- Wastewater Management is a sponsor for the Water Environment Federation Sewer Science Program providing mentors to go into 25 Fairfax County High Schools for a week to help with a lab that teaches about wastewater treatment and protection of the waster environment.

- The Wastewater Treatment Division provides tours for the public, including schools, scouts, foreign delegation and colleges. In 2007 the treatment plant led 34 tours for over 700 people.

- Staff from Wastewater Management participated in many different outreach events including Celebrate Fairfax, town hall meetings and Earth Day festivals.

- A lawn irrigation system was installed at the NMCPCP that incorporates water reuse by using finished plant effluent.

- The NMCPCP incorporates reuse of plant's final effluent into many daily plant operations instead of using county potable water.

- The NMCPCP incinerator is fueled by methane gas captured at the I-95 landfill and piped to the plant.

- NMCPCP staff promptly repaired a large 36-inch pipe that had reduced the plant's capacity by 60-percent. WCD provided materials for the effort.

- Gunston Cove was nationally and internationally recognized for eutrophication recovery. The Environmental Monitoring Branch has monitored the water quality of Gunston Cove in conjunction with George Mason University to evaluate ecological changes and impacts for the past 24 years. In order to conduct the monitoring, the Branch maintains and operates a 17 foot Boston Whaler for sample collection expeditions

- At the request of Chairman Connolly's office, Wastewater Collection Division's (WCD) Pipe Repair Section removed seven (7) sections of 42" diameter concrete drainage pipes from Little Rocky Run, restored the stream's banks with rip-rap, and seeded the adjacent work zone. These drainage pipes were installed by a developer over 15 years ago, and the community had wanted them removed for nearly one year, before WCD was contacted and the work was completed immediately.

- NMCPCP staff found and fixed leaking gates that were returning 2 million gallons per day back to the head of the plant. The wastage was equivalent over 1 percent of the plant's capacity.

Resources

Resources required for this initiative include staff hours from the EMS coordinator for WWM and other support staff, funding through Basic Ordering Agreement for EMS consultant services and funding for various upgrades and equipment specified in EMS objectives, funded through the operational and maintenance budget and Basic Ordering Agreement funding.

EIP13-ES10-06(B). Maintain Potable Water Savings and Additional Opportunities for Reduction in Potable Water Use at Noman M. Cole Jr. Pollution Control Plant

Description of Action

This initiative focuses on maintaining potable water savings at the Noman M Cole, Jr. Pollution Control Plant above 1.5 billion gallons per year as the capacity of the plant increases over time. This includes finding more ways to reduce potable water usage at the plant.

Environmental Agenda Objectives Supported

Environmental Stewardship 5

Other Plans or Documents where this actions appears or that it supports

Public Works and Environmental Services Strategic Plan

Lead Agency

DPWES

Status/Plans/Outcomes

The Operations staff in the Wastewater Treatment Division work hard to incorporate water reclamation into their daily processes the Noman M Cole, Jr. Pollution Control Plant. Both secondary plant effluent, as well as, advanced plant effluent water have been incorporated where appropriate in the plant processes. To date, reclaimed water is used for backwashing filters, seal water, wash down, foam control sprays, generator cooling, air scrubber, polymer makeup, chemical carrier water, and onsite irrigation. Staff at the plant continues to look for other areas at the plant where the plant water can be incorporated into plant processes. The staff in WTD continues to look for ways to conserve potable water at the plant by reusing plant final effluent.

Resources

Resources required for this initiative include Wastewater Treatment Division staff time and plant upgrades to allow for the water reclamation upgrades. These usually are incorporated into overall plant upgrades as they occur.

EIP13-ES10-07(B). Establish a Rain Garden at the Noman M. Cole Jr. Pollution Control Plant.

Description of Action

In order to reduce storm water runoff, the Noman M. Cole, Jr. Pollution Control Plant is considering the design and installation of a rain garden on site at the plant.

Environmental Agenda Objectives Supported

Water Quality 7
Environmental Stewardship 5

Other Plans or Documents where this action appears or that it supports

Comprehensive Plan
Watershed Management Plans
MS-4 Permit
Public Works and Environmental Services Strategic Plan

Lead Agency

DPWES

Status/Plans/Outcomes

Staff in the Pretreatment section of the Wastewater Planning and Monitoring Division (WPMD) worked with the Northern Virginia Soil and Water Conservation District (NVSWCD) to design a rain garden at the Noman M. Cole, Jr. Pollution Control Plant and to prepare a cost estimate for its installation. Construction of the rain garden is planned for the fall of 2011.

Resources

This initiative will require employee time from the Pretreatment section of WPMD and NVSWCD for design of the structure. In addition, employee time and effort from the Building and Grounds Section of the Wastewater Treatment Division will be used for the installation of the structure. Additional funding, as determined by the cost estimate, will be required for purchase of plants and the related supplies. Funding for this project will be provided from existing resources.

EIP13-ES10-09(B). Park Authority Athletic Fields Lighting Improvement

Description of Action

A more efficient lighting system for the athletic fields requires fewer fixtures to produce the appropriate light levels on the field and consumes less energy so it could reduce electricity usage while meeting the viewing needs. Using appropriate energy efficient technology for athletic field lighting systems could provide better quality of light, constant light levels, and reduced maintenance costs.

The Fairfax County Park Authority (FCPA) has several athletic fields that are using old and inefficient lighting systems. Upgrading these systems will provide an opportunity to reduce energy consumption and reduce energy bills. One result of less energy consumption would be reduced CO2 emissions to the atmosphere.

Environmental Agenda Objectives Supported:

Environmental Stewardship 5
Air Quality and Transportation (general)

Other Plans or Documents where this action appears or that it supports:

Cool Counties Climate Stabilization Initiative
FCPA policy Manual
Fairfax County Energy Policy

Lead Agency:

FCPA

Status/Plans/Outcomes

Several athletic fields lighting systems have been upgraded with Musco green lighting. However, there still are several other athletic fields with old lighting systems that need to be upgraded.

Resources

$700,000 (unfunded)

EIP13-ES11-04(B). Wastewater Treatment Division's Participation in Energyconnect's Demand Response Program

Description of Action
The Wastewater Treatment Division (WTD) volunteered to participate in the Energyconnect's Demand Response Program beginning in the summer 2009 season and renewed its commitment to participate for the summers of 2010, with an option to renew for subsequent years. The WTD will participate in the program in two ways to offer load reductions to the grid. The first is Economic Demand Response, where the WTD will reduce electricity use when demand and prices are high in lieu of additional energy generation. The second is Emergency Demand Response, where WTD will reduce electricity at the request of PJM, a regional transmission organization that coordinates the movement of wholesale electricity in all of or part of 13 states and Washington DC, when the grid is unstable. The WTD will earn money from Energyconnect for meeting the required curtailment.

Environmental Agenda Objectives Supported
Air Quality and Transportation (general)
Environmental Stewardship 5

Other Plans or Documents where this actions appears or that it supports
Air Quality Management Plan
Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency
DPWES

Status/Plans/Outcomes
The WTD staff has renewed active participation in the program for the summer 2011 season. The Operation's and Electrical staff worked together to develop an appropriate curtailment strategy to meet the requirements of the Energyconnect program. On June 10, the WTD joined with other local Energyconnect participants for a curtailment test exercise that was very successful. Starting in the summer 2011 season, the Wastewater Collections Division (WCD) joined the WTD in the voluntary participation in the program.

The WTD Operation and Electrical staff worked together to develop a plan for energy curtailment to meet the requirement of the Energyconnect program while not compromising the treatment of wastewater. The WCD also are working to develop a strategy of curtailment.

Resources
Existing resources are being used.

EIP13-ES11-05(B). Cast-iron and Asphalt Recycling by the Wastewater Collections Division of the Wastewater Management Program

Description of Action

Wastewater Collection Division's Manhole Raising Section is recycling cast-iron and asphalt as a part of its operations.

Environmental Agenda Objectives Supported

Air Quality and Transportation (general)
Environmental Stewardship 5

Other Plans or Documents where this actions appears or that it supports

Air Quality Management Plan
The Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency

DPWES

Status/Plans/Outcomes

Wastewater Collection Division is recycling 30 tons of asphalt a year which saves approximately $1,600.

Resources

The asphalt is taken to National Asphalt or Branscome Paving for recycling. The cast-iron is stored in 40-ton dumpster which Davis Industries picks up.

EIP13-ES11-07(B). Calculate and Validate the Wastewater Collections Division Carbon Footprint

Description of Action

This initiative was designed to determine the carbon footprint of the operations by the Wastewater Collections Division (WCD) to define its baseline greenhouse gas emission. To ensure accuracy, the calculations may be validated by an independent third party. The footprint will be calculated based on the World Resources Initiative and the World Business Council for Sustainable Development (WRI/WBCSD) protocol. Results from this analysis will be used to establish a baseline for reduction credits, identify areas to target reductions, and comply with the Board of Supervisors (BOS) Cool Counties Climate Stabilization Initiative.

Environmental Agenda Objectives Supported

Air Quality and Transportation (general)
Environmental Stewardship 5

Other Plans or Documents where this actions appears or that it supports

Air Quality Management Plan
Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency

DPWES

Status/Plans/Outcomes

The WCD staff is planning to work with Wastewater Treatment Division (WTD) Plant Operations Branch Manager to learn the method for calculating the Carbon Footprint for the WCD per the WRI/WBCSD protocol. These calculations will be sent to a consultant for third party validation. These calculations can then be used to generate new WCD initiatives to target areas of greenhouse gas reduction.

Resources

The effort required for performing the calculations will be provided by WCD staff. The third party validation may be funded through Basic Ordering Agreement task order funding of approximately $9,000.

EIP13-ES11-08(B). Establish a Rain Garden at Robert P. McMath Facility

Description of Action

In order to reduce storm water runoff, the Robert P. McMath Wastewater Collections Division (WCD) Facility is considering the design and installation of a rain garden onsite.

Environmental Agenda Objectives Supported

Water Quality 7
Environmental Stewardship 5

Other Plans or Documents where this actions appears or that it supports

MS-4 Permit
DPWES Strategic Plan

Lead Agency

DPWES

Status/Plans/Outcomes

Currently the Wastewater Management Program is in the initial phase of considering the feasibility of the design and installation of a rain garden at the Wastewater Collections Robert P. McMath facility. Staff in the Wastewater Collections Division (WCD) plans to work with the Northern Virginia Soil and Water Conservation District (NVSWCD) on the design of the structure and preparation of a cost estimate for its installation.

Resources

This initiative will require employee time from the WCD and NVSWCD for design and installation of the structure. Additional funding, as determined by the cost estimate, will be required for purchase of plants and the related supplies.

EIP13-ES11-09(B). Wastewater Management Program IT Computer Server Virtualization

Description of Action

Beginning FY2009, the Wastewater Management IT branch started server virtualization to lower the number of physical servers in the server room, reduce power consumption of the physical servers and improve the efficiency of the Data Center, as well as lower the cost of ownership, and create high availability for critical systems.

Per pilot testing, when x86 servers ran at about 15% central processing unit (CPU) usage, they consumed about 35% of their total power capability, and at 40% CPU usage, they used about 75% of their potential power draw. This means that the last 60% of a computer's CPU capability requires just an additional 25% of its maximum operating power, so two computers running at 40% utilization each will require more energy than one computer running at 80%. Hence, if there are two servers that average 40% CPU utilization each, it can save money by virtualizing them onto a similar machine, which then would run at about 80% utilization.

Wastewater Management's goal is to reduce the 30 SCADA servers to around 15 servers, which can save 50% of the physical server costs ($300,000) and also save about 47% of the power energy consumption of all 30 physical servers running at the same time. The electrical savings would be approximately 149,000 kilowatt hour per year and $11,000 per year.

The proposed Energy Efficiency and Conservation Block Grant budget would use $500,000 for a virtual network line and $37,500 for server licensing and support. The Wastewater IT branch would use $300,000 in WWM capital funds for server purchase.

The savings in server costs and energy would equal the EECBG budget funds within 20 years.

This project is consistent with Fairfax County's Environmental Improvement Initiatives to reduce carbon footprint (ES10-01 (A)), and implement actions identified in the Wastewater Treatment Division's Environment Management System (ES10-03(B)).

Environmental Agenda Objectives Supported

Air Quality and Transportation (general)
Environmental Stewardship 5

Other Plans or Documents where this actions appears or that it supports

Air Quality Management Plan
Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency

DPWES

Status/Plans/Outcomes

This project is ongoing for the Noman M. Cole, Jr. Pollution Control Plant. Currently, the EIM system servers have been consolidated and the SCADA servers are in the process of being consolidated. Work will proceed as rate-payer funding allows.

It was approved for Energy Efficiency and Conservation Block Grant stimulus funding, but it was not funded. Work will proceed as rate-payer funding allows.

Resources

This project is estimated to require funding of approximately $837,500.

EIP13-ES11-10(B). Site Lighting Upgrades for Monomedia Filters at Noman M. Cole Jr. Pollution Control Plant

Description of Action

As part of the environmental and energy conservation initiatives set forth by the Fairfax County Board of Supervisor's, the Wastewater Treatment Division is proposing an area-wide lighting replacement program to minimize off-site lighting impacts (reduce light pollution), conserve energy by decreasing the amount of energy used, and ensure that lighting is more appropriately directed to assist plant operators in completing their necessary tasks safely. Existing plant site lighting provides a "blanket" overall coverage at the plant. This type of lighting, while adequate for performing outdoor tasks, has created unnecessary light pollution to nearby communities. Due to outdated and energy wasteful units, the existing lighting illuminates both the plant and many of the surrounding homes, thus using energy to light areas not used by plant personnel. This upgrade includes eliminating light trespass from the buildings and the site, improves night sky access and reduces development impact on nocturnal environments. This change will provide 64% reduction in lighting power densities. Electric energy savings will be 19,804 kilowatt hours per year. Greenhouse gases would be reduced by 10.6 metric tons of CO2 equivalents per year using an emission factor of 1,176.91 lbs per megawatt hours (19,804/1000*1176.91/2.2/1000=10.6)

Environmental Agenda Objectives Supported
Air Quality and Transportation (general)
Environmental Stewardship 5

Other Plans or Documents where this actions appears or that it supports
Air Quality Management plan
The Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency
DPWES

Status/Plans/Outcomes
This project has been proposed for the Noman M. Cole, Jr. Pollution Control Plant and is waiting for funding. The project will be funded by rate-payer funds as they become available.

Resources
This project is estimated to require funding of $42,791. $25,000 is needed for equipment. The plant maintenance staff would perform the required labor.

EIP13-ES11-11(B). Mercury Vapor Lighting Replacement at Noman M. Cole Jr. Pollution Control Plant

Description of Action

As part of Fairfax County's Environmental Improvement Initiatives to reduce carbon footprint (ES10-01 (A)), improve energy efficiency in lighting (ES09-06(B)) and implement actions identified in the Wastewater Treatment Division's Environment Management System (ES10-03(A)), the Wastewater Management Program has developed a project to replace 43 mercury vapor fixtures with T5 fluorescent lighting fixtures. This project was developed as part of the Master Plan for the Noman M. Cole Jr. Pollution Control Plant. The project was not funded because of its size. The simple payback is 2 years.

Environmental Agenda Objectives Supported

Air Quality and Transportation (general)
Environmental Stewardship 5

Other Plans or Documents where this actions appears or that it supports

Air Quality Management plan
Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency

DPWES

Status/Plans/Outcomes

This project has been proposed for the Noman M. Cole, Jr. Pollution Control Plant and is waiting for funding. The project has been initiated and currently is ongoing. It will be funded by rate-payer funds as they become available.

Resources

This project is estimated to require funding of approximately $15,000. If the project receives funding the equipment would be procured and the work would be performed by plant electrical staff.

EIP13-ES11-13(B). Installation of Lighting Control Systems at Athletic Fields

Description of Action

The Fairfax County Park Authority (FCPA) has installed programmable lighting control systems on numerous athletic fields to control lights remotely with a high degree of accuracy. Control systems energize athletic field lighting only when needed, and turn the lights off when not needed. Convenience and control are maximized by features that may include key switches, push-button switches, automatic timers, desktop scheduling, and/or remotely controllable devices that turn the lights on and off. Curtailing unnecessary field lighting minimizes light trespass, which reduces complaints from neighbors. It also reduces FCPA's electricity usage, thereby freeing funds for field maintenance, and reduces fossil fuel emissions, which furthers the FCPA's environmental stewardship objectives.

Additional background information is available in the "Athletic Field Lighting Technical Report" prepared in 2005 for FCPA by Shaffer, Wilson, Sarver & Gray (SWSG) in Reston. (http://www.fairfaxcounty.gov/parks/gmp/athletic_lighting_rpt.pdf).

Project Scope:
FCPA plans to upgrade lighting control systems at the following facilities, listed in priority order:

- Mason District Park, 6621 Columbia Pike, Annandale - Fields 1, 2, and 3
- Wakefield Park, 8101 Braddock Road, Annandale - Fields 1, 2, 3, 4, 5, and 6
- Alabama Drive Park, 1100 Alabama Drive, Herndon - Fields 1 and 2
- Ossian Hall Park - 7900 Heritage Drive, Annandale - Fields 1 and 2
- Westgate Park, 7550 Magarity Road, McLean - Fields 1 and 2
- Byron Avenue Park, 6500 Byron Ave, Springfield - Fields 1 and 3
- Fred Crabtree Park, 2801 Fox Mill Road, Herndon - Fields 1 and 2
- Trailside Park, 6000 Trailside Drive, Springfield - Fields 1 and 2
- Howery Park, 5100 Glen Park Road, Annandale - Fields 1, 3, and 4
- Sandburg Middle School, 8428 Fort Hunt Road, Alexandria - Field 1
- Lake Fairfax Park, 1400 Lake Fairfax Drive, Reston - Fields 1 and 4

Objectives include reducing energy usage and fossil fuel emissions and creating or retaining jobs. Approximate cost for this project, based on prior FCPA experience and considering additional features compared to existing systems, is $330,000.

Anticipated Results:
Based on historical savings for similar projects, the county estimates that the project will result in annual energy savings of 1,707 million BTUs and annual reductions in greenhouse gas (GHG) emissions of 275 metric tons CO2e.

Environmental Agenda Objectives Supported:
Environmental Stewardship 5
Air Quality of Transportation (general)

Other Plans or Documents where this action appears or that it supports:

Cool Counties Climate Stabilization Initiative
FCPA Policy Manual
Air Quality Management Plan
Fairfax County Energy Policy

Lead Agency:

FCPA

Status/Plans/Outcomes
This action has been submitted for DOE as one of the EECBG Fairfax County projects.

Resources
Assessment Cost: $330,000 funded by EECBG
This project has been funded by EECBG.

EIP13-ES11-14(B). Outdoor Lighting and Control System Retrofits at Park Facilities

Description of Action

In 2008, the FCPA conducted a study to analyze over 300 existing FCPA outdoor lighting systems for the purpose of identifying those systems that would most benefit from energy efficiency improvements. Several of the existing lighting systems are old and inefficient and especially the light fixtures could be replaced with more efficient fixtures. The sites selected for inclusion in the a priority list in this project were among the high-priority sites identified in that study.

Project Scope:

FCPA plans to upgrade outdoor light fixtures (including poles, if necessary, but not the bases) and, if appropriate, install control systems at the facilities in following priority list. ("Courts" may refer to tennis and/or multi-purpose courts.)
- Mason District Park, 6621 Columbia Pike, Annandale - Parking Lot
- Lee District Park, 6601 Telegraph Road, Franconia - Courts
- South Run Park, 7550 Reservation Drive, Springfield - Parking Lot
- George Washington Park, 8426 Old Mount Vernon Road, Alexandria - Parking Lot
- Nottoway Park, 9537 Courthouse, Vienna - Courts
- Burke Lake Park, 7325 Ox Road, Fairfax Station - Courts and Maintenance Shop
- Backlick Park, 4516 Backlick Road, Annandale - Courts
- Wakefield Park, 8101 Braddock Road, Annandale - Courts and Maintenance Shop

All facilities in the priority list currently have a total of 283 lighting fixtures. There are 85 fixtures with 1500 watt bulbs, 74 fixtures with 1000 watt bulbs, 102 fixtures with 400 watt bulbs, and 22 fixtures with 175 watt bulbs. Facilities are chosen from the priority list, depending on the actual scope of work and cost for each facility, which is based on an evaluation in first step of the project. The project objectives include reducing energy usage and fossil fuel emissions and creating or retaining jobs.

Anticipated Results:

Based on historical savings for similar projects, the County estimates that the project will result in annual energy savings of 1,109 million BTUs and annual reductions in greenhouse gas (GHG) emissions of 178 metric tons CO2e.

Environmental Agenda Objectives Supported:

Environmental Stewardship 5
Air Quality and Transportation (general)

Other Plans or Documents where this action appears or that it supports:

Cool Counties Climate Stabilization Initiative
Air Quality Management Plan
FCPA Policy Manual
Fairfax County Energy Policy

Lead Agency:

FCPA

Status/Plans/Outcomes

This project has been funded from EECBG.

Resources

Assessment Cost: $220,000, funded by EECBG.

EIP13-ES08-07(C). Neighborhood Ecological Stewardship Training (NEST) Program

Description of Action

The Neighborhood Ecological Stewardship Training (NEST) program was initiated in the spring of 2006 by the Northern Virginia Soil and Water Conservation District, as a pilot project and as part of a doctoral studies project for a student at George Mason University. It was held again in 2008. NEST teaches citizens about their local environment through a series of experiential workshops and hands-on outings that explore local stream ecology, plants, soil, resource efficient behaviors and personal connections to the region. In 2006, more than 40 agencies, organizations and companies partnered with the NEST program, and more than 145 adults participated in the program. The program was well-received and extensive documentation illustrates the effectiveness of this approach to stewardship education.

Program Goals

- Capitalize on support and momentum from the public to get involved with their local environment through watershed and invasive species issues – to garner community involvement and support.
- Educate the public about how their actions impact their water resources, the local forests and the Chesapeake Bay Watershed.
- Create an environmental community with the skills, knowledge and commitment to make a positive impact on their "place" (neighborhood), by enhancing their "sense of place."

Program Overview

I. Stream Valley Ecology – Watersheds and Streams
II. Stream Valley Ecology – Soil and Native and Invasive Plants
III. Land-based Exploration
IV. Water-based Exploration
V. Outdoor Arts
VI. Connecting with Nature Series

Environmental Agenda Objectives Supported

Environmental Stewardship 1, 2, 4 and 6
Water Quality 1, 9 and 10

Other Plans or Documents where this action appears or that it support:

Watershed Management Plans
New Millennium Occoquan Watershed Task Force Report
Park Authority Natural Resource Management Plan

Lead Agency

Northern Virginia Soil and Water Conservation District

Other Agencies

Program support from DPWES, FCPA and 26+ additional agency, private, and non-profit partners.

Status/Plans/Outcome

In 2008, 261 participated in the program. 73 organizations, writers, artists and scientists partnered with the NEST program to provide a wide range of classes and activities from watershed explorations by land and water, to soils art, bat habitat and stream ecology. More than 115 activities were linked to the NEST program.

NEST demonstrated that there is extensive interest in adult natural resources programs. The program filled to capacity and many participants claimed it "changed their outlook on natural resources in the area." Pre and post-program surveys document the success of this hands-on approach to raising awareness, increasing knowledge and promoting stewardship.

The NEST program is an effective way to foster environmental stewardship and can become a national model for adult stewardship education.

Resources

The program's formal budget was $0. The program coordinator's time was funded by the Northern Virginia Soil and Water Conservation District. All program funding and support were provided in-kind by its partners.

To continue the NEST program, funding is needed for both staff support and resources. (The program coordinator's position was eliminated in FY 2010, due to funding cuts.) $35,000 would fund a part-time person to carryout the program.

(A full-time person could be used effectively to help implement the NEST and to carry out other technical and outreach programs, such as ES10-15 (C), Environmental Stewardship Matching Grants for Watershed Protection and Energy Conservation.

EIP13-ES08-09(C). Promoting the Use of Natural Landscaping Practices by Private Sector

Description of Action

This action focuses on efforts to promote the use of natural landscaping practices by the private sector. On June 21, 2004 the BOS directed staff to identify county properties where natural landscaping could be used to reduce maintenance practices that can cause harmful environmental impacts such as air pollution, and reduce the need and expense of mowing, pruning, edging, and using fertilizers, pesticides, and herbicides. In response, a Natural Landscaping Committee (NLC) was formed to identify practices, policies and a countywide implementation plan. An initial report and recommendations of the NCL was presented to the Board's Environmental Committee and approved by the BOS on July 11, 2005.

The NLC realize that implementation of natural landscaping practices by citizens on privately owned properties has significantly more potential to deliver positive environmental benefits than implementation on public property alone; according, two major goals of the NLC report focus on:

1. Public Education – Promoting the use of natural landscaping on private property by providing opportunities to observe the application of specific natural landscaping practices that have been deployed and explained via signage on the grounds of highly-trafficked governmental facilities.
2. Community Engagement – Increasing neighborhood pride and environmental stewardship by encouraging civic or student groups that have interest in implementing natural landscaping practices on common open space, and by encouraging public involvement in the maintenance of landscaping projects installed at libraries, recreational centers, schools and governmental centers.

The following activities could be used to educate and engage the community about the value of implementing natural landscaping:

- Development of educational materials such as brochures, web pages, videos and desktop exhibits that highlight the use of natural landscaping on county property and promote its use on private property
- Incorporate interpretive signage into multi-function natural landscaping exhibits
- Develop public service announcements for various news and media outlets
- Promote natural landscaping at Fairfax County's Earth Day/Arbor Day Celebration and similar events
- Encourage gardening groups such as the Virginia Cooperative Extension Master Gardeners to attend Natural Landscaping workshops
- Encourage local landscape businesses to participate in Natural Landscaping workshops to encourage the development of natural landscaping services for private landowners
- Develop programs that encourage individual or groups interested in planting and maintaining natural landscape gardens and exhibits on county property

Environmental Agenda Objectives Supported

Environmental Stewardship 1, 2, 3, 4, 5, 6
Parks Trails and Open Space (General)
Air Quality & Transportation 7
Water Quality 1, 7, 9, 10

Other Plans or Documents where this action appears or that it supports

The Fairfax County Tree Action Plan
Benefits and Application of Natural Landscaping and Five-year Implementation Plan (The report prepared for the BOS by the NLC)
New Millennium Occoquan Watershed Task Force Report
Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency:

DPWES, Urban Forest Management Division

Status/Plans/Outcomes

This action complements the implementation of natural landscaping projects on county-owned properties such as governmental centers, libraries, fire stations, parks and schools over the next five fiscal years (FY 2008 through FY 2013) and is largely hinged on the funding of natural landscaping projects identified in: Implementing Natural Landscaping Practices on County Properties (PT08-06(C)); and Planting Trees for Energy Conservation at County Facilities (formerly PT08-07(C) and now part of AQ08-05(B), Tree Planting at Governmental Buildings and Parking Facilities). Emulation of natural landscaping practices by citizens could greatly amplify the level of environmental benefits derived from public natural landscaping projects. Funding for this project would be used to produce educational materials, produce and install interpretive signs, and to host workshops featuring natural landscaping practices.

Resources

Funding needed: $50,000

EIP13-ES08-11(C). Promoting Stewardship Of Urban Forest Resources

Description of Action

This action builds on goals from the Tree Action Plan to foster an appreciation for trees and urban forests by the residents of Fairfax County, and to encourage residents to protect, plant and manage their trees. This action also supports a June 2007 Board Matter in which the Board officially adopted a 30-year Tree Canopy Goal for Fairfax County (see ES09-08 (B)).

During the BOS Environmental Committee review of the Tree Action Plan recommendations, several Board members noted concern about a growing number of complaints relating to the removal of healthy, mature trees on private properties. As a result, the Board's Environmental Committee requested that the Tree Action Plan Work Group pay extra attention in the development of educational and outreach actions in order to minimize the unnecessary removal of trees by private citizens. Accordingly the Tree Action Plan contains the following strategies to accomplish these goals:

- Develop an outreach and education plan with clear targets and measurable results.
- Fund and implement an outreach and education program.
- Provide technical assistance and training to the public.
- Develop incentives and an awards and recognition program and pursue grants.
- Provide examples via demonstrations on public lands.

In addition, as noted in ES09-08 (B), a 30-year Tree Canopy Goal, educating and engaging private property owners will be absolutely critical in all efforts to obtain that goal.

Environmental Agenda Objectives Supported

Environmental Stewardship 2, 3, 4 and 6
Air Quality and Transportation 7
Water Quality 1, 7 and 10

Other Plans or Document where this action appears or that it supports

Fairfax County Tree Action Plan
Watershed Management Plans
Agricultural and Forestal District Ordinance
New Millennium Occoquan Watershed Task Force Report
Cool Counties Climate Stabilization Initiative
Air Quality Management Plan
Thirty-Year Tree Canopy Goal
Fairfax County Energy Policy

Lead Agency

DPWES-Urban Forest Management Division

Status/Plans/Outcomes

The Tree Action plan provides the following actions to promote stewardship of the County's urban forest resources by residents:

- Form an inter-agency team for education related to urban forestry.
- Inventory existing outreach efforts and publications.
- Develop a scope of work for the education and out reach plan. Determine budget and timeline for in-house and outsourced options
- Identify and propose potential demonstration projects.
- Develop an education and outreach plan (funding required).
- Identify staff and budget needs to implement the education and outreach plan
- Outline an outreach and technical assistance program and identify resource needs.
- Define role of UFMD in outreach and training for HOAs and residents.
- Define role of UFMD in providing consulting and technical assistance for tree management on county land.
- Inventory existing awards and recognition programs.
- Compile list of applicable grants.
- Initiate demonstration projects on public property
- Develop informational brochures and expand the county's web page section regarding trees and urban forestry.
- Quantify and publish the environmental and economic benefits of trees and forests

This action also complements efforts of the Natural Landscaping Committee.

Resources

Funding needed: $100,000
Funds will be used to develop an education and outreach plan and to develop and print educational materials

EIP13-ES09-15(C). Government Center Energy Project

Description of Action

The Government Center is a central hub and would be an opportunity to showcase energy conservation concepts to the public. Technologies such as green roofs on the terraced roof sections and solar panels on the main roof could be investigated for incorporation. These would offer energy savings from the green roof, and provide energy production on-site from the solar panels. At the same time, this offers an opportunity for outreach and education. High school students could conduct studies on the performance of the technologies, increasing their knowledge and providing feedback to the county on the results of the installation. In addition, the Government Center lobby and atrium area would be ideal for educational displays (green roof, solar panels, lighting retrofits, energy management control systems, etc), as well as real-time touch displays of what the solar panels are doing, for residents to come in and learn about.

Environmental Agenda Objectives Supported

Environmental Stewardship 5
Air Quality and Transportation (general)

Other Plans or Documents where this action appears or that it supports

Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agencies

Facilities Management Department
County Executive's Office

Status/Plans/Outcomes

A study is necessary to determine the feasibility of solar and green roof installations at the Government Center. Currently, solar panels are not cost effective for the county because the county is exempt and can not take advantage of tax incentives. This may be an opportunity for an additional outreach program through a partnership with a private organization as a third party investor. It could claim the tax incentive, while the county would be able to take advantage of the lower energy costs.

Resources

TBD

EIP13-ES09-16(C). Feasibility Study for Renewable Energy Technologies

Description of Action

Virginia Executive Order 48 calls for periodic assessment of the cost effectiveness of incorporating a photovoltaic power system or a green roof in any roof renovation for state buildings over 5,000 gross square feet in size. If the projected energy savings over a 15-year period can pay for the additional cost of installing photovoltaic or green roof system, then plans for state buildings are required to address that design option. The county is interested in emulating this idea because of its Cool Counties leadership, as well as consideration of life cycle cost savings.

Environmental Agenda Objectives Supported

Environmental Stewardship 5
Air Quality and Transportation (General)

Other Plans or Documents where this action appears or that it supports

Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agencies:

Facilities Management Department
County Executive's Office
Capital Facilities

Status/Plans/Outcomes

Independent consultants that specialize in renewable energy technologies would be needed to evaluate county facilities and conduct the necessary analysis to determine the cost effectiveness. FMD needs a leading role in accepting new installations of technologies into the facilities it maintains, since there already is a large burden to keep up with necessary capital renewal needs. It is recommended that FMD and the consultant work in conjunction with the countywide Energy Manager, or Energy Efficiency and Conservation Coordinating Committee, to determine which facilities would be suitable for installation. The Capital Facilities Division is reviewing new facility designs and incorporating green roofs where feasible, such as Dolly Madison Library.

Resources

TBD

EIP13-ES09-17(C). Perform Energy Audits for County Facilities

Description of Action

Energy audits involve both physical inspection and testing at facilities to determine their energy efficiency or lack thereof. Currently, FMD targets energy projects based on utility consumption combined with capital renewal projects. Energy audits would provide a more in depth analysis and address more energy issues than what can be accounted for in equipment types and systems.

Environmental Agenda Objectives Supported

Environmental Stewardship 5
Air Quality and Transportation (General)

Other Plans or Documents where this action appears or that it supports

Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency

Facilities Management Department

Status/Plans/Outcomes

Qualified testing agencies would need to be consulted for this service to maximize the results. The length of time to conduct these audits needs to be determined.

Resources

The estimated cost to conduct energy audits in approximately 100 facilities is $500,000. EECBG funding awarded for this project was reallocated; project is now unfunded.

EIP13-ES10-08(C). Park Authority RECenters Lighting Improvement for Swimming Pools and Racquetball Courts

Description of Action

A more efficient lighting system for the RECenters would consume less energy to produce the appropriate light levels on the field and would significantly reduce electricity usage while improving the viewing needs. Using appropriate energy efficient fluorescent and LED fixtures along with appropriate control systems and energy efficient ballasts for lights at swimming pools, racquetball courts, gymnasiums, and other activity rooms could provide considerable savings, better safety, and better quality of light. Installing control systems help provide more efficient scheduling and switching lights on and off only when needed. Additionally, golf courses provide good opportunities for lighting upgrades.

The Park Authority has nine RECenters with indoor swimming pools, fitness centers, racquetball courts, classes and activity rooms, and seven golf courses with club houses and maintenance shops. Upgrading lighting and control systems in these facilities will significantly reduce energy consumption and reduce energy bills. Lighting and control systems in three of these RECenters have been upgraded, resulting in good savings. One benefit of less energy consumption would be reduced CO2 emissions to the atmosphere.

Environmental Agenda Objectives Supported

Environmental Stewardship 5
Air Quality and Transportation (general)

Other Plans or Documents where this action appears or that it supports

Cool Counties Climate Stabilization Initiative
FCPA policy Manual
Fairfax County Energy Policy

Lead Agency:

FCPA

Status/Plans/Outcomes

This action has not yet begun. This project relates to the results of an energy survey that was done in the FCPA facilities.

Resources

Retrofit Cost: Estimate $400,000 (unfunded)

EIP13-ES10-10(C). Building Envelope Assessment and Improvement for Park Authority Facilities

Description of Action

The building envelope is a critical component of any facility since it plays a major role in regulating the indoor environment. Consisting of the building's roof, walls, windows, and doors, the envelope controls the flow of energy between the interior and exterior of the building. The building envelope can be considered the selective pathway for a building to work with the climate, responding to heating, cooling, ventilating, and natural lighting needs. A better building envelope can help make a building energy efficient and environmentally friendly.

The Park Authority has different types of facilities. Some of these facilities have old buildings that need to be evaluated in terms of building envelop and the control of air flow between indoors and out doors, which significantly affects the building energy efficiency and energy use by HVAC systems.

This action will save energy uses in HVAC systems, reduce CO2 generation, and reduce energy bills.

Environmental Agenda Objectives Supported

Environmental Stewardship 5
Air Quality and Transportation (general)
Great Parks, Great Communities Plan

Other Plans or Documents where this action appears or that it supports

Cool Counties Climate Stabilization Initiative
FCPA Policy Manual
Fairfax County Energy Policy

Lead Agency:

FCPA

Status/Plans/Outcomes

This action has not yet begun

Resources

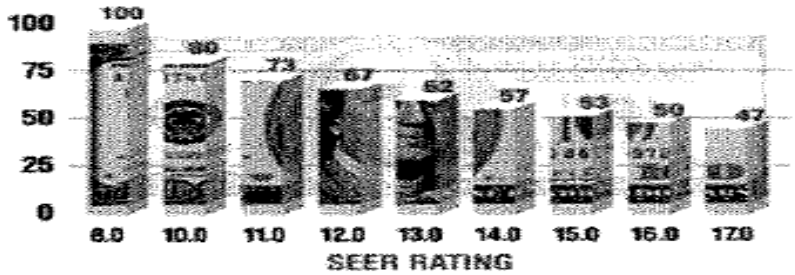
Assessment Cost: $300,000 (unfunded)

EIP13-ES10-11(C). Park Authority Facilities Small HVAC Systems

Description of Action

The critical systems of any facility are its HVAC systems, since they play a major function in regulating the indoor environment. They consist of heating, ventilating, and air condition systems. Using appropriate energy efficient equipment leads to less energy consumption, thereby reducing the environmental impact and reducing operational cost.

The Park Authority currently has 33 units (including 15 units in golf courses and 10 units for nature centers and historic properties and 11 units in tenant rental houses) that need to be upgraded to be more energy efficient and to comply with the federal mandates for the use of HCFC's. Most of these units are more than 10 years old. Currently the Park Authority plans to replace 8 units a year with high efficiency units from 8/10 to 14 SEER rating. The chart below indicates the operational/electricity costs based on Seasonal Energy Efficiency Ratio (SEER) rating.



Environmental Agenda Objectives Supported
Environmental Stewardship 5
Air Quality and Transportation (general)

Other Plans or Documents where this action appears or that it supports
Cool Counties Climate Stabilization Initiative
FCPA policy Manual
Fairfax County Energy Policy

Lead Agency
FCPA

Status/Plans/Outcomes
This action has not yet begun.

Resources
Retrofit Cost Estimate: $500,000 (unfunded)

EIP13-ES10-13(C). Master Watershed Stewards Certification Program

Description of Action

The Master Watershed Stewards Certification Program is intended to provide training to Fairfax County citizens interested in participating in implementing watershed management plans and other initiatives, watershed improvements, and activities to protect the streams and natural resources in their watersheds. It provides an intensive introduction to watershed issues and watershed management during eight 2 ½ hour workshops on technical and organizational topics including: the consequences of poor watershed management; measuring watershed health; stormwater management; best management strategies and practices, including the low impact development concept and practices; and organizing to take action (forming or strengthening community watershed organizations). Participants also conduct a visual assessment of stream corridors in their own watersheds. Participants must carryout at least 24 hours of watershed-related community service, which may include a project or activity, organizing a community watershed organization, or participating in a community group involved in implementing a watershed plan or other watershed activities. Upon completion of the workshops and the community service, participants are certified as Master Watershed Stewards.

This program builds on the successful Master Watershed Stewards Program conducted in 2004 (ES07-02 (A)), when 66 Fairfax County residents were certified as Master Watershed Stewards by the Potomac River Greenways Coalition (compared to the program's target of 30). In addition, 52 other citizens attended one or more of the Master Watershed Stewards Program workshops.

Environmental Agenda Objectives Supported

Environmental Stewardship 1, 2, 4, 6
Water Quality 1, 3, 5, 7, 10
Growth and Land Use 5

Other Plans or Documents where this action appears or that it supports

Watershed Management Plans
MS-4 Permit
New Millennium Occoquan Watershed Task Force Report

Lead Agency

Northern Virginia Soil and Water Conservation District

Other Agencies

Department of Public Works and Environmental Services, Stormwater Planning Division

Status/Plans/Outcomes

The Potomac River Greenways Coalition, NVSWCD and DPWES-Stormwater Planning collaborated on re-starting the program, should funding become available. An evaluation instrument was under development by the Potomac River Greenways Coalition, which would be used to measure the long-term impact of the initial Master Watershed Stewards Program. The Potomac Greenways Coalition planned to conduct a survey during 2009 and 2010 to assess the overall utility of the 2004 Master Watershed Stewards Program on post-program participant involvement in watershed management-related activities. The survey would be used to make adjustments to the curriculum, based on feedback from participants. In addition, the curriculum will be adjusted to incorporate new research and developments, as well as the results and findings of the on-going Fairfax County watershed management planning effort, and measures to facilitate program implementation. The program would be facilitated by a coordinator provided by the Potomac River Greenways Coalition who would plan, promote, organize, lead and administer the program. In addition, an environmental educator would be hired to help carryout the program. Major expected outcomes of this program would be: (1) to prepare a significant number of committed and well-trained residents who can exercise leadership in the implementation of watershed plans and watershed improvements; and (2) to institutionalize the program as a tool to provide knowledge, influence attitudes, and encourage practices to empower Fairfax County residents to make a positive difference as stewards of their watersheds. These planning measures were put on hold in 2010, primarily because of other commitments by the principal participant from Potomac River Greenways, which took him out of the country. Hence, a revised Master Watershed Stewards Certification Program may not be ready for implementation in FY 2013. Once the planning effort is re-started, the program would be on track to be ready to implement the following year.

Resources

The Potomac River Greenways Coalition, the principal citizen counterpart organization for this program, would provide program coordination and management as an in-kind contribution. The Coalition also will seek grant funding from the Chesapeake Bay Small Watersheds Grants Program or other funding sources to facilitate program organization and curriculum revision.

An additional $40,000 in grant and/or county funding is needed to fund the environmental educator position, honoraria and travel for topic matter specialists, and for program supplies.

Other staff resources to support this effort are budgeted as part of the NVSWCD and DPWES programs. County facilities will serve as the venue for the workshops.

EIP13-ES10-14(C). Water Conservation Education and Device Distribution Program

Description of Action

Fairfax County, Virginia, is a growing community whose primary source of drinking water is the Potomac River and the Occoquan Reservoir.

Much of the Washington Metropolitan Area experienced a drought in 1999, 2002, 2007 and 2010. The Metropolitan Washington Council of Governments, of which Fairfax County is a member jurisdiction, in cooperation with local water utilities, including Fairfax Water adopted the national "Water, Use it Wisely" program in 2004 to demonstrate simple wise water use practices. There are 100 water saving tips that are easy to incorporate into daily practices, from turning the water off while brushing teeth, to properly adjusting landscape planning and watering throughout the year. With awareness and a little effort, it is possible for everyone to find ways to use water wisely.

In 2010, average household consumption in Fairfax Water's retail service area was 236 gallons per day (gpd) for single-family residences and 170 gpd for townhouse residences. Please note that this is per residence and not per capita. Multi-family residence data is more difficult to calculate as many are not individually metered, skewing the number of true accounts served. On a per unit basis, it is likely to be close to the townhouse numbers on a per account basis.

In addition to protecting and preserving our regional water resources, the "Water, Use it Wisely" information brochures will help county residents to reduce their carbon footprint by reducing greenhouse gas emissions associated with the electricity required to collect and treat the water. For example, based on a review of Fairfax Water's average energy use, about 2,000 kilowatt hours (kWh) is used to pump, treat, transmit and distribute water per million gallons delivered. For wastewater collection and treatment, Fairfax County uses about 3,000 kWh per million gallons.

Based on our electricity grid, approximately 1.2 lbs of carbon dioxide (CO_2), a greenhouse gas, is produced per kWh. This says nothing about the traditional pollutants associated with electricity generation. The Environmental Protection Agency estimates that letting a faucet run for five minutes uses almost as much energy as letting a 60-watt bulb run for 14 hours.

This action is a plan to promote pro-active water conservation practices in Fairfax County by influencing area business and county resident water usage. "Water, Use It Wisely" color brochures along with a faucet aerator would be mailed to select homes within the county where survey or research findings show there would be the most beneficial outcomes.

Environmental Agenda Objectives Supported
Environmental Stewardship (general)
Air Quality and Transportation (general)

Other Plans or Documents where this action appears or that it supports

Lead Agencies
Environmental Coordinator
Fairfax Water

Status/Plans/Outcomes

In 2010, Fairfax Water produced, on average, 160 million gallons of potable water daily to meet the demand of nearly 1.7 million residents and businesses in the region, including over 800,000 within the county. Both Fairfax Water and the county currently participate in the regional ***Water: Use it Wisely*** campaign.

With consistent water conservation measures in place, drought conditions can be more effectively handled and the severity of a water shortage can be reduced. The education and distribution plan seeks to both educate county residents and area businesses on simple measures that can be taken at home or in the office, and provide one small device that can be easily installed to further facilitate water conservation and cost savings.

For example, using a single faucet aerator in the kitchen sink can save, on average, a typical household nearly 280 gallons of water per month. By this saving alone, the faucet aerator will pay for itself in a matter of a few months.

Brochures and faucet aerators should be distributed along with a public education and outreach campaign and targeted to those county residences/organizations or communities where market research has shown to be most receptive. Aerators can be handed out by science teachers for distribution to students along with the brochure and/or distributed by county agencies or board member offices at select events. The details of the campaign and distribution will need to be further developed in a future year EIP.

Water: Use it Wisely color brochures is available electronically (pdf) through the Metropolitan Washington Council of Governments. Printing and distribution can be accomplished through a county vendor in a similar manner that was done for the Tick and Mosquito Brochure that was recently distributed to all county residents by the Health Department.

Resources
Bulk rate for faucet aerator: $1 each

Water, Use it Wisely **brochure specifications:** Print ready PDF's will be provided by Fairfax County; 8.5" x 11" flat size, folding to #10; Print full color on both sides (4/4); 80# coated text stock. PRINTING - 50,000 copies: $3,943. DISTRIBUTION - cost is approximately 15 cents per mailing.

EIP13-ES10-15(C). Environmental Stewardship Matching Grant Program for Watershed Protection and Energy Conservation

Description of Action

A fundamental barrier to the implementation of watershed protection and energy conservation actions by Fairfax County residents is funding. Homeowners, HOAs or schools desiring to manage their properties and landscapes for environmental sustainability are often deterred by a lack of funding. Other jurisdictions, including Montgomery and Arlington counties are taking steps to overcome this barrier. Montgomery County has implemented its Rainscapes Rewards Rebate Program http://www.montgomerycountymd.gov/dectmpl.asp?url=/Content/dep/water/rainscapes.asp and Arlington County has offered free home energy audits to its residents.

NVSWCD proposes offering an environmental stewardship grant program for watershed protection and energy conservation actions by Fairfax County residents, HOAs and schools. Green living workshops focusing on how to save energy, create sustainable landscapes, protect local water quality and conserve water would be used to introduce the grant program to residents. Residents attending the workshops would become eligible for matching grants for specific projects such as installation of permeable pavers, rain gardens, cisterns, green roofs and tree canopy, riparian buffer or shoreline enhancement, energy efficiency or water conservation updates, and conservation. NVSWCD would provide technical assistance, and would assemble resources from other agencies to offer technical assistance where possible, in the design and implementation of the projects.

The matching grant program would fulfill multiple county goals including: minimizing impacts to local water quality and the Chesapeake Bay by reducing pollutants, increasing biodiversity and habitat including urban forest resources, minimizing runoff, counteracting global warming, conserving water, and stimulate local environmental stewardship and enhance community by empowering citizens to enact positive change locally.

Program Goals:

- Provide technical information on alternatives to highly resource consumptive residential living and landscape practices.
- Provide financial incentives to enable on-the-ground projects that demonstrate environmental stewardship and provide for ongoing environmental education.
- Improve water quality, conserve water and reduce greenhouse gas emissions and conserve energy within Fairfax County.

Environmental Agenda Objectives Supported:

Growth and Land Use 5
Air Quality 7
Water Quality 1, 7, 9, 10
Parks, Trails and Open Space 2
Environmental Stewardship 1, 2, 3, 4 and 6

Other Plans and Documents where this action appears or that it supports:

Watershed Management Plans
New Millennium Occoquan Watershed Task Force Report
MS-4 Permit
Fairfax County Tree Action Plan
Fairfax County 30-Year Tree Canopy Goal
Benefits and Application of Natural Landscaping and 5-Year Implementation Plan
(A report prepared for the Board of Supervisors by the Natural Landscaping Committee)
Cool Counties Climate Stabilization Initiative
Fairfax County Energy Policy

Lead Agency:

Northern Virginia Soil and Water Conservation District

Status/Plans/Outcome

Related programs include rain garden, rain barrel and the Livable Neighborhoods Water Stewardship program. NVSWCD participates in all three of these programs in cooperation with partners including DPWES stormwater planning, the Northern Virginia Regional Commission, the Fairfax County Park Authority, and other local jurisdictions including Arlington County, City of Alexandria, City of Falls Church and non-profits such as Arlingtonians for a Clean Environment.

In FY 2009, NVSWCD, working with partners from DPWES, NVRC and the Providence Supervisor's office, used a $12,000 grant from the Chesapeake Bay Restoration Fund to support implementation of an LID demonstration project to improve stormwater management at one home in the Falls Hill neighborhood, and to conduct a community education program that included technical assistance and small grants (up to $500) to several homeowners to implement stormwater improvements on their properties. The Falls Hill project addressed only one component (stormwater) in the proposed Stewardship Matching Grant Program, but is noteworthy because the well-attended workshops and active interest shown by the neighborhood suggests the broader Matching Grant Program would be well-received by county residents.

Resources

$90,000 would be needed to fund a program that would include a full-time person to conduct the outreach and education, provide technical assistance, and manage Stewardship Grants for $300 to $2,500 for private homeowners and $2,500 or more for schools, community groups and HOAs. Additional staff would be provided by NVSWCD, with assistance from county agencies if possible.
$45,000 would be needed to fund a pilot project with fewer grants and hiring a temporary, part-time coordinator.

EIP13-ES11-12(C). Establish a Green Roof at the Noman M. Cole, Jr. Pollution Control Plant

Description of Action

The Wastewater Treatment Division (WTD) is researching the potential of installing a Green Roof on a building at the Noman M. Cole, Jr. Pollution Control Plant.

Environmental Agenda Objectives Supported

Water Quality 5 and 7
Environmental Stewardship 5

Other Plans or Documents where this actions appears or that it supports

Cool Counties Climate Stabilization Initiative
MS-4 Permit
Public Works and Environmental Services Strategic Plan
Fairfax County Energy Policy

Lead Agency

DPWES

Status/Plans/Outcomes

Currently the Wastewater Management Program's WTD is in the very initial phase of researching the feasibility of the design and installation of a green roof at the Noman M, Cole, Jr. pollution Control Plant.

Resources

In this initial phase, staff is calculating the cost of the design and implementation of this project. A Basic Ordering Agreement may be used to procure professional consulting services for the research. When the cost of this project is determined, the WTD will look into potential funding options to implement the design and installation of a green roof.

EIP13-ES12-01(C). Second Phase of Outdoor Lighting and Control System Retrofits at Park Facilities

Description of Action

In 2008, the FCPA conducted a study to analyze over 300 existing FCPA outdoor lighting systems for the purpose of identifying those systems that would most benefit from energy efficiency improvements. Several of the existing lighting systems are old and inefficient and the light fixtures could be replaced with more efficient fixtures and control systems could be installed for ore efficient operations. The sites selected for inclusion in the priority list in this project were among the high-priority sites identified in that study. This project is a continuation of the EECBG outdoor lighting retrofits project, in order to complete those facilities outdoor lighting retrofits and to include more facilities with good opportunities for savings and outdoor lighting improvement.

Project Scope

FCPA plans to complete upgrading outdoor light fixtures (including poles, if necessary, but not the bases) and install control systems at the facilities mentioned in the EECBG outdoor lighting project and to include other facilities which were excluded from that project because of limited available funding.

Anticipated Results

Based on historical savings for similar projects, the county estimates that the project will result in annual energy savings of 1,200 MMBtus and an annual reduction in greenhouse gas (GHG) emissions of 195 metric tons of CO2e.

Environmental Agenda Objectives Supported

Environmental Stewardship 5
Air Quality and Transportation (general)

Other Plans or Documents where this action appears or that it supports

Cool Counties Climate Stabilization Initiative
Air Quality Management Plan
County Energy Policy
FCPA Policy Manual
Fairfax County Energy Policy

Lead Agency:

FCPA

Status/Plans/Outcomes

This action has been submitted to DOE as one of the EECBG Fairfax County projects.

Resources

Assessment Cost: $220,000 is funded by EECGB; $300,000 is unfunded

The original cost estimate for the EECBFG outdoor lighting project was $500,000, but only $220,000 was funded.

EIP12-ES12-02(C). Park Authority Solar Thermal Systems for RECenters

Description of Action

This project will install solar thermal systems in the FCPA RECenters to partially provide hot water in these facilities. In addition to energy savings, this project will provide other environmental benefits, such as using clean and renewable energy, reducing greenhouse gases, and providing directions to extend solar energy use in FCPA facilities. An estimated payback period for this solar thermal project would be 10-15 years, which is much better than regular solar electricity generation projects, which are more than 20 years.

Environmental Agenda Objectives Supported:

Environmental Stewardship 5

Other Plans or Documents where this action appears or that it supports:

Cool Counties Climate Stabilization Initiative
FCPA Policy Manual
Fairfax County Energy Policy

Lead Agency:

FCPA

Status/Plans/Outcomes
This action is awaiting funding

Resources
Retrofit Cost Estimate: $400,000