Environmental and Energy Programs

PROGRAM DESCRIPTION

This section includes Environmental and Energy Strategy projects and describes the on-going sustainability policy for building construction.

LINK TO THE COMPREHENSIVE PLAN

Fairfax County's Comprehensive Plan Policy Plan Environment Section includes the following established objectives:

- ✓ Improve the identification and mitigation of environmental impacts, and the monitoring and enforcement of environmental policies as applied to land disturbing activities.
- ✓ Design and construct buildings and associated landscapes to use energy and water resources efficiently and to minimize short- and long-term negative impacts on the environment and building occupants.

Source: 2017 Edition of the Fairfax County Comprehensive Plan, Policy Plan - Environment, Amended through 12-3-2019

PROGRAM INITIATIVES

The Fairfax County Board of Supervisors has set the framework for the county's environmental initiatives through its vision, goals, policies and ordinances and has dedicated considerable resources to support implementing these initiatives. The county's Environmental Vision helps to guide environmental sustainability initiatives, strategies, policies and programs. Two key principles direct the vision: the conservation of limited natural resources, and a commitment to providing the resources needed to protect the environment. The vision is connected to how the county provides services, and it focuses on seven core service areas: Land Use, Transportation, Water, Waste Management, Parks and Ecological Resources, Climate and Energy, and Environmental Stewardship.

Environmental Initiatives

The county established two committees to facilitate collaboration and coordination regarding environmental initiatives, the Environmental Coordinating Committee (ECC) and the Energy Efficiency and Conservation Coordinating Committee (EECCC). Both committees develop recommendations on policy and practice related to the environment and energy efficiency. Recognizing that federal and state legislation and administrative proceedings may affect county policies, the ECC and EECCC keep abreast of the status of relevant legislation and administrative proceedings. Both committees also coordinate closely with the county's Environmental Quality Advisory Council (EQAC), which is an independent, board-appointed advisory committee. EQAC is tasked with reporting the state of the environment in Fairfax County and in recommending a variety of policy and programmatic actions that the board can take in support of the environment.

Each year Environmental Improvement Plan (EIP) projects are selected based on a project selection process supported by the Environmental Quality Advisory Council (EQAC), which includes the application of specific project criteria, review of proposals from county agencies, and identification of projects for funding. Some of the programs approved for funding have previously included the Park Authority's Invasive Management Area (IMA) Program, the Green Purchasing Program, the Watershed Protection and Energy Conservation Matching Grant Program, outreach and education programs, the installation of web-based smart technologies to limit water consumption, and natural landscaping projects.

Operational Energy Strategy

In July 2018, the Board of Supervisors adopted an Operational Energy Strategy. This Energy Strategy is intended to further the objectives of the Board's Environmental Vision by providing goals, targets, and actions in each of the following 10 focus areas: Energy Use and Efficiency, Water Use and Efficiency, Green Building, Innovative Energy Solutions, Electric Vehicles, Goods and Services, Waste Management, Awareness and Engagement, Utility Cost Management, and Reporting and Collaboration. The Energy Strategy promotes cost effective solutions and an energy-conscious culture for county government agencies and employees. The resulting reductions in energy use will help mitigate escalating energy costs and promote a more sustainable future for Fairfax County.

The Energy Strategy is designed to move the county toward its goal of reducing energy use by 20 percent by 2029. This reduction in energy use will help mitigate escalating energy costs and promote a "greener" future for the county. Some of the projects being implemented through the Energy Strategy Program include replacing incandescent or fluorescent lighting with LED lighting, reducing water use at county facilities, installing solar panels at county facilities, and optimizing resource conservation by increasing recycling rates. All of these projects are designed to reduce greenhouse gas emissions, lower utility bills for county buildings and promote an energy-conscious culture within the county's workplace. The 10-year investment for this goal is approximately $45 million, however, by year seven, savings generated by the investment will essentially pay for the projects. The annual energy savings are 264 million kBtu and the simple Return on Investment is $82 million over 10 years. The first set of funded projects included lighting retrofits at existing county and park facilities to LED lighting and the conversion of streetlights throughout the county to LED lighting. In addition to saving electricity, the benefits of LED lighting retrofit projects include reductions in greenhouse gas emissions and the need for less frequent lighting maintenance and replacement.

Sustainable Development Policy

The Board of Supervisors also adopted a green building and sustainable development policy for county facilities in 2008. The purpose of this policy is to demonstrate a commitment to environmental, economic, and social stewardship through sustainable development practices for county facilities and buildings. The policy also provides a framework within which to yield cost savings to county taxpayers through reduced operating costs; to provide healthy work environments for county employees and visitors to county facilities; to protect, conserve and enhance the region's environmental resources; and to help establish a community standard of sustainable development for Fairfax County.

This policy directs appropriate departments to incorporate the use of the Leadership in Energy and Environmental Design (LEED) rating system into the design, construction, renovation, and operation of county facilities and buildings. New facility construction, additions, and renovations with an occupied area greater than 10,000 square feet shall be designed and built under the LEED program, shall be guided by a LEED Accredited Professional, and shall strive to achieve LEED certification of at least the Silver rating level under the most recent version of the LEED rating system. Design and project management teams are encouraged to meet LEED ratings beyond the Silver level, if practicable.

- Thirty-one county buildings have been designed and constructed under this policy, and the LEED® program of the U.S. Green Building Council. Of these 31 buildings, 15 are certified as LEED Gold buildings, with the remaining 16 certified as LEED Silver, all meeting or exceeding the policy goal of LEED Silver.
- There are currently 30 CIP projects in the design, construction or post-construction phase that have the goal of achieving LEED Silver certification.

LEED provides a holistic approach to sustainability. Some of the key benefits of LEED include:

- **Financial:** Lower operating costs, lower life cycle costs, and increased building value.
- **Environmental:** Greenhouse gas emission reductions, energy and water savings, waste diversion from landfill, conservation of natural resources, air and water quality improvement, biodiversity and ecosystem protection.
- **Social / Cognitive:** Increased cognitive function, focused and applied activity level, crisis response, increased user productivity and satisfaction, public relations and community benefits.

In addition, the county tracks infrastructure projects under the Envision Rating System for sustainable practices. The Huntington Levee project received Bronze Certification, and the Disinfection System Replacement project received Gold Certification under Envision. Additional building sustainability rating systems like Parksmart and WELL are also currently being pursued.

While the Fairfax County Sustainable Development Policy remains at a minimum goal of LEED Silver Certification for projects over 10,000 square feet, the U.S. Green Building Council (USGBC) has recently instituted the LEED 4.0 program. LEED 4.0 significantly raises the level of sustainability achievement necessary to achieve LEED Silver Certification. In addition, the Board of Supervisors has provided guidance for staff to revise the Sustainable Development Policy, with a likely target of LEED 4.0 Gold Certification for projects in the planning and early design phases. The first cost increment associated with LEED 4.0 Gold Certification is approximately 4.0-6.0 percent, in addition to the upgraded resources necessary to maintain optimized, lifecycle performance.

Sustainable Strategies for Capital Projects

Energy Conservation

Early in the design phase, the county addresses energy and explores cost-effective opportunities to reduce energy consumption and greenhouse gas emissions in four holistic interconnected elements: Energy Demand, Energy Efficiency, Renewable Energy and Ongoing Energy Performance.

- **Energy Demand** – County strategies that are utilized to reduce the building's energy demand include the following:

  - Design and Energy Goals: Set targets to establish building performance indicators.
  - Size the Building Appropriately: The building serves its function and reduces unproductive energy demand.
  - Utilize Free Energy: Orient the building to reduce the building envelope losses and gains, utilize natural ventilation, solar and daylighting.
  - Building Envelope: Design buildings with a well-designed envelope assembly that reduces heating or cooling losses through the thermal envelope, thereby reducing energy demand. Furthermore, the building envelope performance for some county projects may include Envelope Commissioning which verifies that the performance meets the design requirements.
  - Monitor Building Energy Consumption: Buildings are provided with advanced energy metering via the building automation and energy management system(s) to capture real-time performance data.

- **Energy Efficiency** – The efforts to reduce building energy demand provide the foundation for energy efficiency within the supporting systems and end users. County strategies to achieve energy efficiency improvements include the following:

  - Utilize Passive Design Opportunities: The use of natural resources from sun and wind to heat, cool and illuminate a building without additional energy.
  - Install High Performance Building Systems**:** During the design, decisions are made to invest in energy efficient technologies. To date, such systems have been implemented in county buildings as follows: Variable Air Volume (VAV) HVAC Systems with Control Strategies, Variable Refrigerant Flow (VRF) HVAC Systems, Energy Recovery Systems, Geothermal Systems, Indoor and Outdoor LED lighting systems and Lighting controls (Systems that actively track building occupancy lighting needs and harvest nature daylighting to reduce lighting fixture demand and energy consumption via sensors and can communicate to central lighting controls.) Recent projects that have incorporated high efficiency VRF systems are Lewinsville Center and Woodrow Wilson Library.

Advanced lighting control systems have been installed in Tysons Pimmit Library and Public Safety headquarters.
- Specify High Efficiency Appliances: All county appliances are specified as Energy Star Certified.
- Utilize Energy Simulation: Energy Modeling software is used during the design to determine and prioritize energy efficiency measures and system types.
- Monitor and Verify Building Performance: Commissioning and or Enhanced Commissioning is a project requirement for the county which provides an independent authority to verify the operation of all systems meets the design, installation requirements, and future operation.

- **Renewable Energy** – Efforts to reduce demand and increase efficiency to meet the building's energy needs.

  - All projects are analyzed early in design to determine the feasibility of solar photovoltaic systems.
  - The county has awarded contracts to vendors for solar Power Purchase Agreement (PPA) services and is working with the vendors on the implementation and O&M phases.
  - A solar photovoltaic (PV) system was installed on the roof of the Stringfellow Park and Ride facility. There are nine buildings currently in design with infrastructure for PV systems.
  - Infrastructure for EV Charging Stations is being phased into the building design which will provide stations for building occupants, and visitors.

- **Ongoing Energy Performance/Post Occupancy –** To maintain all efforts made during design and construction, it is critical to be mindful of the post occupancy activities that maintain energy performance targets.

  - Continuous and Retro Commissioning: Continues to confirm the building is performing as designed or to support future occupancy changes by the end user.
  - Provide Staff Training: O&M personnel are trained properly on new building system technologies.
  - Create Incentives for Occupants: Promote energy efficient strategies with occupants.

Water Conservation

The conservation and creative reuse of water are important in addressing overall water use reduction in buildings and on sites. The following strategies are evaluated early in the design process:

  - **Plumbing Fixtures:** Fixtures such as showerheads, toilets and faucets are specified as low flow, since they utilize low gallons per minute of water. The low flow requirement has been incorporated in the design guidelines for all current and future projects. Some recently completed projects with low flow fixtures are Lewinsville Center, Tysons Pimmit Library, John Marshall Library, McLean Community Center and Reston Police Station and Governmental Center.
  - **Rainwater Harvesting:** Storage tanks or cisterns can hold rainwater that can be utilized for non-potable uses, such as irrigation. The feasibility of incorporating a rain water harvesting system is evaluated during the design of new construction projects**.**
  - **Water Re-Use:** Strategies to reuse wastewater for non-potable uses will be evaluated for new construction projects that are in early design**.**
  - **Natural Landscaping:** New construction projects are designed to follow the county's natural landscaping policy, with a goal to minimize resource consumption, reduce stormwater runoff, increase the habitat value of the site and increase soil and plant health. A few projects currently in design that incorporate natural landscaping are Lorton Community Center and Library, Sully Community Center, Lorton Fire Station and Stormwater Wastewater facility**.**

- **Irrigation:** The use of natural landscaping and native species reduces the need for irrigation, thereby reducing outdoor water usage. Exterior hose bibs are provided at strategic places around the building in lieu of an automatic irrigation system, in all new construction projects.
- **Green Roofs:** An early feasibility study of the use of green roofs is included in each project scope. Green roofs have been installed at the West Ox Bus Operations Center, Merrifield Center, Dolley Madison Library, Great Falls Volunteer Fire Station, Providence Community Center, Herndon Fire Station and the Public Safety Headquarters. Green roofs minimize heating and air conditioning costs, in addition to reducing stormwater runoff.

Sustainable Sites

Focusing on sustainable strategies is key to maintaining the environment surrounding the building, vital relationships among buildings and ecosystems, restoring project site elements, integrating the site with local and regional ecosystems, and preserving the biodiversity that natural systems rely on.

- **Parking Reduction and Public Transportation:** Reducing the parking footprint can minimize the environmental harms associated with impervious areas, including automobile dependence, land consumption and rainwater runoff. Location and available alternate transportation options are evaluated for each project site during design. Potential reduction in parking requirements are developed, depending on user needs. Parking reduction was recently sought and approved for the Lorton Community Center and Library project.
- **Low Impact Development (LID):** Green Infrastructure and LID reduce rainwater runoff volume and improve water quality by replicating the natural hydrology and water balance of the site. Approaches and techniques for LID involve minimizing disturbed areas on the site, limiting the amount of impervious cover on the site and infiltrating, filtering, storing, evaporating or detaining rainwater runoff at or close to its source. Strategies for stormwater management including bioswales, dry ponds and infiltration trenches, going above and beyond minimum code requirements, are analyzed early in the design process. Recent examples include Sully Community Center, Stormwater Wastewater facility, and South County Police Station and Animal Shelter.

Indoor Environmental Quality

Green buildings with good indoor environmental quality promote the health and comfort of building occupants. High quality indoor environments also enhance productivity, decrease absenteeism and increase the building value.

- **Low VOC:** Design guidelines for all projects require use of products that have low volatile organic compounds.
- **Green Cleaning:** Green cleaning products and procedures are practiced to minimize negative impact and protect the health of employees.
- **Daylighting:** All new projects strive to optimize natural daylighting strategies to enhance the indoor lighting quality.

Materials and Resources and Waste Management

Sustainably produced materials and waste reduction, reuse and recycling strategies help in minimizing embodied energy and impacts associated with the extraction, processing, transport, maintenance and disposal of building materials. Project requirements emphasize the use of locally produced materials and staff must develop and implement a construction and demolition waste management plan with a goal to reduce waste disposed of in landfills and incineration facilities by recovering, reusing and recycling materials.

Innovation in Design

Other sustainable strategies employed on projects include options such as bird friendly design, involving articulation of facades and a combination of opaque and transparent materials to reduce bird collisions.

The county's green building policy is intended to reduce the consumption of non-renewable resources, reduce greenhouse gas emissions, minimize waste, and foster healthy, productive environments. Some examples of recently completed CIP projects that have achieved many of the green building policy objectives include:

- ***The Huntington Levee project***: Achieved Envision Bronze certification. The Huntington Levee is designed to protect the community that falls within the FEMA-designated flood plain from extreme 100-year flooding events – floods that have a one percent chance of occurring in any given year. This system has a 2,800 foot long levee that consists of an earthen embankment and steel reinforced concrete I-wall, as well as a two-stage pumping station. The project also includes a collection drain system to control ground water seepage, new storm drains to connect the existing storm drains to the pump station and vegetated swale to divert stormwater collected behind the levee to the pumping station. Included in the project is a trail system for pedestrians and cyclists which will connect to a large network of trails, thereby improving access to recreational opportunities for residents.

- ***The Public Safety Headquarters (PSHQ):*** Achieved LEED Gold certification. The PSHQ accommodates both Police and Fire and Rescue Department administrative staff to maximize shared resources among first responder agencies that often work together in the field. This building uses LED lighting throughout. Other sustainable design strategies include: Green roofs, permeable pavements and stormwater management features that work together to slow down, filter, absorb and purify rain water as it leaves the site, a 25,000-gallon tank that harvests water runoff and reuses it for on-site irrigation, daylight harvesting sensors that take advantage of natural lighting and adjust indoor light levels depending on the amount of sunlight available, use of low-flow plumbing fixtures and recycled materials, and the use of low VOC emitting materials to improve interior air quality.

CURRENT PROJECT DESCRIPTIONS

1. **Community-wide Energy and Climate Action Plan (CECAP)** (Countywide): $750,000 has been approved to date, to support the development of phases I and II of the Community-Wide Energy and Climate Action Plan (CECAP). This funding will provide for consulting services and outreach materials. The consulting services will support community outreach and engagement, including facilitating up to 27 meetings and developing an interactive, online web presence. In addition, the consulting services will provide for technical analysis and plan development. The community-wide greenhouse gas inventory will be updated, climate mitigation actions tied to inventory and community priorities will be developed, and a long-form technical report, summary documents and online resources will be produced.

2. **Composting at Government Facilities** (Countywide): This program will support a Composting Pilot Program at Fairfax County government offices. It will be managed by an employee volunteer group and each department participating in the pilot will receive a compost bin to place in its office kitchenette. On a weekly basis, a private composting company will remove the bins for off-site composting and provide clean bins. An amount of $12,000 is included in FY 2021 for the pilot program.

3. **Energy Efficiency at Historic Houses** (Countywide): This program will provide for efficiency improvements at vacant historic houses maintained by the Park Authority. These historic houses are among 30 properties being considered for the Resident Curator Program. HVAC inefficiencies and building envelope issues in these houses are challenging for two reasons: they lead to excessive utility bills and increased maintenance needs while the houses remain unoccupied; and the cost of undertaking the energy improvements is expected to discourage potential curators from program participation. Making energy improvements in these houses prior to inclusion in the Resident Curator Program addresses both issues. Energy improvements could include upgraded HVAC and controls, added insulation to crawlspaces and attics, and/or weather-stripping and interior storm windows. An amount of $50,000 is included in FY 2021 for this program.

4. **Energy Masters Program** (Countywide): Energy Masters trains volunteers to perform simple energy efficiency upgrades in apartments and coordinates with volunteers to make these upgrades in low-income housing. In addition to making housing units more energy and water efficient, volunteers provide energy efficiency training for residents to help them continue saving energy and water in the future. The program also provides energy education to students with presentations and age-appropriate content. An amount of $91,385 is included for this program in FY 2021.

5. **Energy Service Companies (ESCO) Contract** (Countywide): $2,363,823 of the Operational Energy Strategy funding will support a pilot ESCO contract at select county facilities. ESCOs offer comprehensive energy saving solutions by performing building assessments, identifying energy saving upgrades, estimating potential savings, implementing the upgrades, and verifying the savings.

6. **Energy Strategy Program - FMD** (Countywide): $4,485,377 has been approved to date to support cost-effective, energy-efficient, innovative technologies at county facilities. A reduction in energy use will help mitigate escalating energy costs and promote a "greener" future for the county. Some of the projects identified to date include replacing incandescent or fluorescent lighting with LED lighting, reducing water use at county facilities, installing solar panels at county facilities and optimizing resource conservation by increasing recycling rates. All of these projects are designed to reduce greenhouse gas emissions, lower utility bills for county buildings and promote an energy-conscious culture within the county's workplace. The Board of Supervisors endorsed the goal of reducing energy use 20 percent in the county by 2029. The 10-year investment for this goal is approximately $45 million, however, by year 7, savings generated by the investment will essentially pay for the projects. The annual energy savings are 264 million kBtu and the simple Return on Investment is $82 million over 10 years.

7. **Energy Strategy Program - Parks** (Countywide): $2,150,800 has been approved to date to support cost-effective, energy-efficient, innovative technologies, at park facilities. This project represents the Park Authority portion of the Board of Supervisors endorsed goal of reducing energy use 20 percent in the county by 2029. The 10-year investment for this goal is approximately $45 million, however, by year 7, savings generated by the investment will essentially pay for the projects.

8. **Electric Vehicle Stations** (Countywide): $750,000 has been approved to date to support the first year of a two-year plan to create Electric Vehicle (EV) ready charging stations at county facilities. This funding will support up to 40 EV-ready charging stations at up to 10 county sites. The average cost per site is $75,000 and includes a site plan, design and review, permitting and construction. Sites will be identified at publicly accessible county office buildings, commuter parking lots, RECenters, Community Centers or Libraries. The EV charging stations will provide the capability to charge both county government and private vehicles.

9. **Environmental Initiatives** (Countywide): Annual funding has been approved for a variety of environmental initiatives over the years including but not limited to: installation of water smart web-based irrigation controllers, the LED lightbulb exchange program, energy efficiency and renewable energy systems at both county and park facilities, propane extraction equipment to recover unused propane from cylinders that are disposed of as part of the county's Household Hazardous Waste Program, LED Solar parking lot lighting, stream bank and meadow restorations, and others. This project represents funding approved over several years; however, beginning in FY 2021, each individual project will be reflected separately.

10. **Green Purchasing Program** (Countywide): $10,000 is included annually for the Green Purchasing Program. This program is designed to support limited term staff to assist in clearly specifying environmental attributes during the county's procurement process. Fairfax County maintains an electronic Contract Register of over 2,000 active contracts and emphasizing environmental attributes such as recycling, energy efficiency, durability and reduced toxicity during the procurement process can contribute to the purchase of green products, creating fiscal and environmental savings.

11. **HVAC Controls at Unstaffed Parks** (Countywide): This project supports the purchase and installation of HVAC controls at park facilities that are not staffed. These controls will prevent heaters and ventilation fans from working at the same time, will establish set points for heating and cooling, and will prevent the public and unauthorized employees from adjusting the settings. In FY 2019, a pilot installation of HVAC controls at Poplar Tree Park resulted in electricity use dropping by approximately 25 percent in the five-month period following installation. An amount of $110,000 is included for this project in FY 2021.

12. **LED Streetlights** (Countywide): $1,800,000 has been approved to date to support the first year of a five-year LED streetlight conversion plan, totaling $9,000,000. The goal of the plan is to convert more than 56,000 existing mercury vapor, high pressure sodium and metal halide fixtures to Light Emitting Diodes (LED) streetlights. The new LED streetlights are "Smart City Capable" with features being incorporated through added hardware and software upgrades. This cost of the conversion plan is expected to be partially offset by projected savings in utility costs. It is anticipated that after conversion is completed on all streetlights, approximately $1.4 million in savings will be realized annually. In addition, conversion of these streetlights will remove 32.4 million pounds of carbon dioxide equivalent emissions annually. Finally, conversion will result in reduced maintenance costs given the longer life of LED lighting, result in higher quality lighting, and allow for dimming and automated outage reporting once smart technologies are implemented.

13. **Magnolia Bog Restoration** (Mason District): This project will support restoration of 1.25 acres of wetland at Green Springs Garden, specifically the restoration of a magnolia bog. This type of bog is a rare geologic feature known to occur only in Virginia, Maryland, and the District. The magnolia bog at Green Springs Garden is one of only 11 known occurrences in Virginia, making its restoration and preservation of particular significance. This bog is located adjacent to a pedestrian trail, offering unique interpretative and educational opportunities for visitors. Restoration activities will include the design and installation of a rock structure to stabilize soil and protect the bog's hydrologic integrity, as well as the removal of non-native invasive plants and the installation of native plants. Project partners will include Friends of Green Springs, Earth Sangha, and the Potowmack chapter of the Virginia Native Plant Society. An amount of $86,000 is included for this project in FY 2021.

14. **Meadow Restorations** (Countywide): This program supports the restoration of meadows. The restorations will establish native plant diversity and provide support to pollinators and native birds by removing non-native invasive plants, remedying prior inappropriate management choices, and improving habitat. FY 2021 funding will support the restoration of the Park Authority's highest-priority project, Poplar Ford Park, in its entirety. Funding of $272,000 is included in FY 2021 to fund the restoration of 12.5 acres of meadows.

15. **Natural Landscaping** (Countywide): This project envisions a multi-phase, multi-year demonstration project that reimagines the Government Center grounds while creating inviting, comfortable and aesthetically pleasing outdoor spaces with ample shade and a unifying plant palette. Phase I involves converting 5,600 square feet of mowed lawn to perennial beds, planting up to 40 canopy trees, and adding interpretative signage. An amount of $130,000 is included for Phase I of a natural landscaping initiative at the Government Center.

16. **Spring Outreach Program**s (Countywide): This is an annual program that supports the award-winning spring outreach programs. These programs reach thousands of people and have a deep impact on many youth and adults. Programs supported by spring interns include classroom presentations, outdoor learning experiences, outreach events and festivals, high school Envirothon competitions, rain barrel workshops, seedling sales, high school science fair project judging, stream monitoring, Enviroscape trainings, storm drain marking, the Sustainable Garden Tour and more. In FY 2021, an amount of $7,115 has been included for this program.

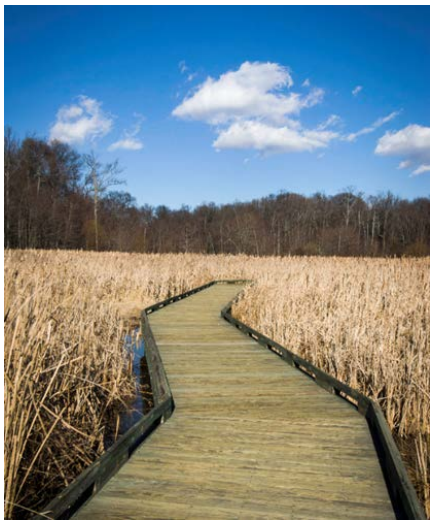
17. **Parks Invasive Management Area Program** (Countywide): This annual project supports the Park Authority's Invasive Management Area (IMA) program. The Park Authority manages this volunteer program, which supports the restoration of hundreds of acres of important natural areas and protects the tree canopy. Currently more than 20,000 trained volunteer leaders have contributed 67,000 hours of service since the program's inception in 2005, improving over 1,000 acres of parkland. This funding level is consistent with the FY 2020 Adopted Budget Plan funding level and will continue to support the ecological integrity of natural areas and prevent further degradation of their native communities. Funding of $250,000 is included in FY 2021 for the IMA.

18. **Parks Lighting and Energy Retrofits** (Countywide): This project supports lighting retrofits and upgrades at Fairfax County Park Authority facilities for energy efficiency and conservation. Lighting will be upgraded to LED fixtures and lighting controls will be installed to manage operating hours more efficiently. These energy saving retrofits will reduce approximately 80 percent of energy usage, improve lighting, reduce greenhouse gas emissions and contribute to the dark skies initiative.

19. **Permeable Sports Courts** (Mason District): This project supports the installation of a permeable basketball court at the Baileys Community Center. The outdoor basketball court is regularly used by Head Start students and community members. Replacing the existing worn and cracked court surface with a permeable asphalt surface will support stormwater planning goals, while also establishing an educational resource about watersheds and stormwater planning. The proposed funding supports all costs related to the court replacement, including the installation of the permeable surface and equipment for a full basketball court. Funding of $156,000 is included in FY 2021 for this project.

20. **Pollinator Meadows** (Countywide): This project provides for the conversion of gravel surfaces to pollinator meadows where possible. FY 2021 funding will provide for Phase II of the DVS Pollinator Meadow at the Alban Road maintenance facility, a 5.5-acre site within the lower Accotink Creek watershed. This second phase will convert a 16,000 square foot area of highly compacted gravel surface to a pollinator meadow, thereby reducing stormwater run-off, sediment and other pollutants while extending the native habitat for birds and other pollinators. Phase I of this project received funding in FY 2018. Funding of $45,500 is included for Phase II of the DVS Pollinator Meadow at the Alban Road maintenance facility.

21. **Watershed Protection/Conservation** (Countywide): $75,000 annually is included for the Watershed Protection and Energy Conservation Matching Grant Program. This program, managed by the Northern Virginia Soil and Water Conservation District (NVSWCD), is intended to support energy education and outreach initiatives and promote community engagement regarding sustainability and conservation issues. The program will provide financial incentives to empower civic associations, places of worship and homeowners to implement sustainability projects. The initiative will build on current programs that provide technical assistance, hands-on support, outreach and education to homeowners and residents. Projects will improve water quality, reduce greenhouse gas emissions and conserve energy and water. This funding level will support printing and materials, matching grants and one limited term full-time position to conduct outreach and education, site assessments, and inspections.



22. **Zero Waste Certification** (Springfield District): This project supports a Zero Waste Certification for the Springfield Warehouse, a 63,000 square foot facility with a single source for waste disposal in the form of a roll-off dumpster. The certification process serves as a foundational element from which facilities can achieve cost avoidance, support sustainable initiatives, and improve material life cycles. The program is assessor-based and rates how well a facility minimizes its solid waste and maximizes resource management. Zero Waste Certification is a one-time effort that requires significant documentation and third-party certification. The Department of Purchasing and Material Management's preliminary analysis indicates that "Silver" certification could be earned at existing operational levels. Funding of $5,000 is included for this project in FY 2021.

PROJECT COST SUMMARIES
ENVIRONMENTAL AND ENERGY PROGRAMS
($000's)

	Project Title Project Number	Source of Funds	Budgeted or Expended Through FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total FY2021-FY2025	Total FY2026-FY2030	Total Project Estimate
1	Community-wide Energy and Climate Action Plan (CECAP) 2G02-026-000	G	***$750***						$0		$750
2	Composting at Government Facilities 2G02-027-000	G	***$0***	***$12***					$12		$12
3	Energy Efficiency at Historic Houses PR-000128	G	***$0***	***$50***					$50		$50
4	Energy Masters Program GF-000057	G	***$0***	***$91***					$91		$91
5	Energy Service Companies (ESCO) Pilot GF-000061	G	***$2,364***						$0		$2,364
6	Energy Strategy Program - FMD GF-000048	G	***$4,485***	$3,000	$3,000	$3,000	$3,000	$3,000	$15,000	$9,000	$28,485
7	Energy Strategy Program - Parks PR-000123	G	***$2,151***	$1,500	$1,500	$1,500	$1,500	$1,500	$7,500	$4,500	$14,151
8	Electric Vehicle Stations GF-000049	G	***$750***	$750					$750		$1,500
9	Environmental Initiatives 2G02-001-000	G	***$2,092***						$0		$2,092
10	Green Purchasing Program 2G02-028-000	G	***C***	***$10***	$10	$10	$10	$10	$50		$50
11	HVAC Controls at Unstaffed Park Facilities PR-000129	G	***$0***	***$110***					$110		$110
12	LED Streetlights GF-000050	G	***$1,800***	$1,800	$1,800	$1,800	$1,800		$7,200		$9,000
13	Magnolia Bog Restoration PR-000130	G	**$0**	**$86**					$86		$86
14	Meadow Restorations PR-000131, PR-000117	G	***$62***	***$272***					$272		$334
15	Natural Landscaping GF-000058	G	***$0***	***$130***					$130		$130
16	Spring Outreach Programs 2G02-030-000	G	***$0***	***$7***	$7	$7	$7	$7	$35		$35
17	Parks Invasive Management Area Program 2G51-032-000, 2G02-029-000	G	***$1,682***	***$250***	$250	$250	$250	$250	$1,250		$2,932

PROJECT COST SUMMARIES
ENVIRONMENTAL AND ENERGY PROGRAMS
($000's)

	Project Title Project Number	Source of Funds	Budgeted or Expended Through FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total FY2021-FY2025	Total FY2026-FY2030	Total Project Estimate
18	Parks Lighting and Energy Retrofits PR-000067	G	***$1,148***						$0		$1,148
19	Permeable Sports Courts GF-000059	G	***$0***	**$156**					$156		$156
20	Pollinator Meadows GF-000060	G	***$0***	***$46***					$46		$46
21	Watershed Protection/Conservation 2G02-031-000, 2G02-021-000	G	***$525***	***$75***	$75	$75	$75	$75	$375		$900
22	Zero Waste Certification 2G02-032-000	G	***$0***	***$5***					$5		$5
	Total		$17,809	$8,350	$6,642	$6,642	$6,642	$4,842	$33,118	$13,500	$64,427

Notes: Numbers in ***bold italics*** represent funded amounts. A "C" in the 'Budgeted or Expended' column denotes a continuing project.

Key: Source of Funds

B	Bonds
G	General Fund
S	State
F	Federal
X	Other
U	Undetermined