

Government Facilities

Libraries Goals

- ✓ To continue to provide a modern network of effective, relevant and efficient library services that are convenient and accessible for the changing population of Fairfax County.
- ✓ To locate library facilities to provide service to the greatest number of persons within designated service areas, and provide high visibility, safe and easy access, and ample size for the building, parking areas, landscaping and future expansion.
- ✓ To continually evaluate patron needs and usage, providing a basis for responsible library management decisions in the public interest.

Infrastructure Replacement and Upgrades Goals

- ✓ To provide for a planned series of renovations, improvements, and repairs that will maximize the useful life of County facilities.
- ✓ To modify County facilities and environmental control systems to increase energy utilization efficiency.
- ✓ To provide emergency repairs to County facilities and correct potential safety or structural hazards.

Government Facilities and Programs Goals

- ✓ To provide County vehicle maintenance facilities that are located on adequate and appropriate sites.
- ✓ To provide improvements and redevelopment at County owned facilities.

Environmental and Energy Program Goals

- ✓ To support the Board of Supervisors' Environmental Agenda through annual environmental improvement projects.
- ✓ To support the Board of Supervisors' Operational Energy Strategy and reduce energy use by 20 percent by 2029.
- ✓ Support Environmental Sustainability Strategies for capital projects.

Libraries

PROGRAM DESCRIPTION

Fairfax County Public Library branches differ in size, collection, and customers served. The libraries all have one thing in common: a commitment to provide easy access to a multitude of resources for the education, entertainment, business and pleasure of Fairfax County, Town of Herndon, Vienna and City of Fairfax residents of all ages.

LINK TO THE COMPREHENSIVE PLAN

Fairfax County's Comprehensive Plan, Public Facilities Section includes the following established objectives:

- ✓ Locate library facilities to provide service to the greatest number of persons within designated service areas, and provide high visibility, safe and easy access, and ample size for the building, parking areas, landscaping and future expansion.
- ✓ Library facilities should be compatible with adjacent land uses and with the character of the surrounding community and should be sized to provide adequate space for the population to be served.
- ✓ Library facilities should sustain adequate levels of patronage.

Source: Fairfax County Comprehensive Plan, 2017 Edition; Policy Plan- Public Facilities, Amended through 4-9-2019

PROGRAM INITIATIVES

Changing demographics indicate a growing diversity among residents and among communities within Fairfax County. Expanding technologies offer new opportunities and users demand improved access to information resources and service delivery. The Library must provide a network of facilities that offer library services responding to the needs of the community in which each library is located, and it must provide system-wide mechanisms to share resources among branches. New facilities must be designed to utilize new technologies for information delivery, and existing facilities redesigned and renovated to maximize the use of space and incorporate modern technologies.

The Library Board of Trustees, whose members are appointed by the Board of Supervisors, the School Board and the City of Fairfax Council, are responsible for library policy. Planning is based on "Recommended Minimum Standards for Virginia Public Libraries," published by the Library of Virginia, which sets basic requirements for receiving supplemental State Aid. The priority of construction projects is based on many factors, including the age and condition of buildings, projected population growth in the service area, usage patterns, insufficiencies at existing facilities and demand for library services in unserved areas of the County. Library projects have been primarily financed with General Obligation Bonds.

Funding in the amount of \$25 million was approved by the voters on November 6, 2012 to renovate Pohick Regional Library, Tysons-Pimmit Regional Library, John Marshall Community Library, and Reston Regional Library. The Pohick and Tysons Pimmit Library projects were completed and the libraries opened to the public in 2017. The John Marshall Library is also complete and reopened in October 2018.



John Marshall Library Renovation

CURRENT PROJECT DESCRIPTIONS

1. **Feasibility Studies - Library Facilities** (Countywide): \$477,998 has been previously approved to conduct feasibility studies to determine the scope for renovations of various libraries. Most recently, the Kingstowne Regional Library and the Lorton Library feasibility studies have been completed. A feasibility study for the Patrick Henry Library has been initiated for the initial programming and conceptual design, and to explore a potential partnership with the Town of Vienna for the joint redevelopment of the Library site.
2. **George Mason Regional Library - 2020** (Mason District): \$15,000,000 is estimated to renovate and upgrade building systems and infrastructure that are well beyond the end of their life cycle and meet current and future operational needs of the Library System. While the population in the service area has not grown significantly, usage patterns at this location place it among the busiest six libraries in both door count and circulation. The present configuration is plagued with an antiquated layout that does not adequately reflect modern library design, usage or aesthetics. This location has suffered from recurring issues with the HVAC, inadequate electrical wiring to support device usage by customers, and a myriad of other facility related repairs/incidents. Based on the age and condition of the facility it is difficult to make significant changes to the overall layout or outfit the facility with the infrastructure required to support the technology requested by library customers. This project is proposed as part of the 2020 Library Bond Referendum.
3. **Kingstowne Regional Library - 2020** (Lee District): \$36,500,000 is estimated for the Kingstowne Regional Library which is currently located in leased space within a shopping center. The leased space has significant challenges, including space constraints, ongoing issues with water leakage from tenants on the floor above, disruption to operations due to maintenance, and inadequate parking. A larger collection area, additional meeting rooms, and significant technology infrastructure upgrades are required to meet current and future operational needs of the Library system. The site for a new library was previously purchased by the County to replace the existing leased space with a newly constructed library. Staff is currently developing a conceptual design to co-locate the Kingstowne Regional Library with the Franconia Police Station, the Lee District Supervisor's Office, the Franconia Museum, an Active Adult Center and childcare facility into one comprehensive facility on this site. The design will also include garage parking, a County fueling station, and other potential County uses as identified in the future. Funding of \$2.5 million was previously approved to begin the design of the Library project and \$34 million is proposed as part of the 2020 Library Bond Referendum.

4. **Lorton Community Library** (Mt. Vernon District): \$8,730,000 has been approved to renovate/expand the existing Lorton Community Library which was built in 1990. The existing facility is in need of renovations to meet the community needs and to upgrade building systems and infrastructure to meet current and future operational needs of the Library System. The expansion and renovation of the existing Lorton Library Lorton is now scheduled to be co-located with the Lorton Community Center which was approved by the voters as part of the 2016 Human Services and Community Development Bond Referendum.
5. **Patrick Henry Community Library - 2020** (Hunter Mill District): \$23,000,000 is estimated as the County's share of a proposed joint development project between Fairfax County and the Town of Vienna to renovate the Library and provide additional parking structures for the Library and the town. Patrick Henry Community Library is one of the busiest community locations in the library system, operating at a level of a small regional. Renovation is required to upgrade building systems and infrastructure that are well beyond the end of their life cycle and meet current and future operational needs of the Library System. The building is one of the oldest, resulting in an antiquated layout that does not adequately reflect modern library design and usage. Based on the age and condition of the facility it is difficult to make significant changes to the overall layout or outfit the facility with the infrastructure required to support the technology requested by library customers. This project is proposed as part of the 2020 Library Bond Referendum.
6. **Reston Regional Library - 2012** (Hunter Mill District): \$10,000,000 has been approved for the replacement of the Reston Regional Library. The existing facility was constructed in 1985, and is located within the overall master plan area that reconfigures and provides integrated redevelopment of approximately 50 acres currently owned by Fairfax County and Inova at Reston Town Center North (RTCN). A total of approximately \$39.5 million is proposed for a replacement Reston Library, community space, and common infrastructure at RTCN. The plan addresses the development potential consistent with the needs of the community and in conformance with the Comprehensive Plan Amendment approved in February 2014. Options for procurement and development concepts for the proposed County blocks and the library location are being reviewed. Funding of \$10,000,000 was approved as part of the 2012 Library Bond Referendum for the Library and additional funding of \$29.5 million will be required, including the County share of the library related infrastructure development and a Comprehensive Real Estate and Infrastructure Development Agreement with Inova. This Agreement will provide for the real estate exchange, and design and construction of the campus site infrastructure. Economic Development Authority bond financing is anticipated to fund the remaining \$29.5 million required to implement the plan.
7. **Sherwood Regional Library - 2020** (Mt Vernon District): \$18,000,000 is estimated for the renovation of the Sherwood Community Library. Renovation is required to upgrade building systems and infrastructure that are well beyond the end of their life cycle and meet current and future operational needs of the Library System. This Library is located off a main thoroughfare and is unique in that it services a large middle school population from the Walt Whitman Intermediate School, located next door. This location has suffered from recurring roofing problems, inadequate electrical wiring to support device usage by customers, and a myriad of other facility related repairs/incidents. In its present configuration, it is plagued with an antiquated layout that does not adequately reflect modern library design and usage. Further, a recent rise in incidents has resulted in a Security Site Survey which recommended changes to the layout and significant security enhancements. Based on the age and condition of the facility it is difficult to make significant changes to the overall layout or outfit the facility with the infrastructure required to support the technology requested by library customers. This project is proposed as part of the 2020 Library Bond Referendum.

**PROJECT COST SUMMARIES
LIBRARIES
(\$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 Feasibility Studies - Library Facilities 5G25-011-000	G	\$478						\$0		\$478
2 George Mason Regional Library - 2020 TBD	B				\$465	\$1,800	\$8,565	\$10,830	\$4,170	\$15,000
3 Kingstowne Regional Library - 2020 LB-000012	B	\$925	\$1,575	\$4,600	\$9,000	\$9,000	\$6,800	\$30,975	\$4,600	\$36,500
4 Lorton Community Library LB-000010	G, B	\$1,362	\$4,805	\$2,510	\$53			\$7,368		\$8,730
5 Patrick Henry Community Library - 2020 TBD	B				\$850	\$2,940	\$8,250	\$12,040	\$10,960	\$23,000
6 Reston Regional Library - 2012 LB-000010	B	\$400	\$1,000	\$1,000	\$2,000	\$3,600	\$2,000	\$9,600		\$10,000
7 Sherwood Regional Library - 2020 TBD	B				\$465	\$2,100	\$10,665	\$13,230	\$4,770	\$18,000
Total		\$3,165	\$7,380	\$8,110	\$12,833	\$19,440	\$36,280	\$84,043	\$24,500	\$111,708

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

Infrastructure Replacement and Upgrades

PROGRAM DESCRIPTION

One of the primary roles for facility management in both government and private industry is to provide for the long-term needs of the organization's capital assets. This maximizes the life of the facilities, avoids their obsolescence and provides for a planned program of repairs, improvements and restorations to make them suitable for organizational needs. Infrastructure Replacement and Upgrades is the planned replacement of building subsystems such as roofs, electrical systems, HVAC systems and plumbing systems that have reached the end of their useful life. Major renewal investment is required in facilities to replace old, obsolete building subsystems that have reached the end of their life cycle. Without significant reinvestment in building subsystems, older facilities will fall into a state of ever deteriorating condition and functionality and the maintenance and repair costs necessary to keep them functional will increase. This section also includes the upgrades associated with Americans with Disabilities (ADA) compliance at County facilities.

PROGRAM INITIATIVES

The Facilities Management Department (FMD) currently provides support for evaluating facilities, identifying problems, developing costs estimates, establishing priorities and performing required infrastructure replacement and upgrades. Some of the major work completed annually at County facilities includes the replacement of building subsystems: HVAC and electrical system repairs and replacement, roof repairs and waterproofing, carpet replacement, parking lot and garage repairs, window repairs/replacement, elevator/escalator repairs/replacement, fire alarm replacement and emergency generator replacement. Fairfax County will have a projected FY 2021 facility inventory of over 11.6 million square feet of space (excluding schools, parks, housing and human services residential facilities). This inventory continues to expand with the addition of newly constructed facilities, the renovation and expansion of existing facilities and the acquisition of additional property. With such a large inventory, it is critical that a planned program of repairs and restorations be maintained. In addition, the age of a major portion of this inventory of facilities is reaching a point where major reinvestments are required in the building subsystems.

Many County facilities have outdated HVAC and electrical systems that are susceptible to failure or are highly inefficient energy users. Sites are identified and each individual project involves a two-step process to complete both design and construction. Roof replacement, repairs, and waterproofing are conducted in priority order based on an evaluation of maintenance and performance history. Repairs and replacement of facility roofs are considered critical to avoid the serious structural deterioration that occurs from roof leaks. By addressing this problem in a comprehensive manner, a major backlog of roof problems can be avoided. Carpet replacement and parking lot resurfacing are evaluated annually and prioritized based on the most critical requirements for high traffic areas. In addition, emergency generators and fire alarm systems are replaced based on equipment age, coupled with maintenance and performance history.

Critical emergency repairs and renovations are accomplished under the category of emergency building repairs. These small projects abate building obsolescence and improve the efficiency and effectiveness of facilities and facility systems. The following table outlines, in general, the expected service life of building subsystems used to project infrastructure replacement and upgrade requirements, coupled with the actual condition of the subsystem component:

**GENERAL GUIDELINES FOR EXPECTED
SERVICE LIFE OF BUILDING SUBSYSTEMS**

ELECTRICAL

Service/Power	25 years
Generators	25 years
Lighting	20 years
Fire Alarms	15 years

HVAC

Equipment	20 years
Boilers	15 to 30 years
Building Control Systems	10 years

PLUMBING

Pipes and fittings	30 years
Fixtures	30 years
Pumps	15 years

OTHER

Elevator	25 years
Escalator	25 years
Systems Furniture	20 to 25 years
Roofs	20 years
Paving	15 years
Carpet Tiles	15 years
Broadloom Carpet	7 years

Each year, the FMD prioritizes and classifies infrastructure replacement and upgrade projects into five categories. Projects are classified as Category F: urgent/safety related, or endangering life and/or property; Category D: critical systems beyond their useful life or in danger of possible failure; Category C: life-cycle repairs/replacements where repairs are no longer cost effective; Category B: repairs needed for improvements if funding is available, and Category A: good condition.

In April 2013, the County and School Board formed a joint committee, the Infrastructure Financing Committee (IFC), to collaborate and review both the County and School's Capital Improvement Program (CIP) and infrastructure upgrade requirements. One of the goals of the Committee was to develop long-term maintenance plans for both the County and Schools, including annual requirements and reserves. The committee conducted a comprehensive review of critical needs and approved recommendations to support the development of a sustainable financing plan to begin to address current and future capital requirements. The Committee found the analysis of financial policy, the review of the condition of hundreds of facilities, and the scarce options for financing to be challenging. A Final Report was developed and approved by the Board of Supervisors on March 25, 2014, and the School Board on April 10, 2014. The Report included support for conducting capital needs assessments, new policy recommendations for capital financing, including a capital sinking fund and increased annual General Fund supported funding, the adoption of common definitions related to all types of maintenance, support for County and School joint use opportunities for facilities, and continued support for evaluating ways to further reduce capital costs.

The Board of Supervisors approved the establishment of the Capital Sinking Fund as part of the FY 2014 Carryover Review. To date, a total of \$49,310,128 has been dedicated to capital sinking funds and allocated for infrastructure replacement and upgrades to the following areas: \$27,120,573 for FMD, \$9,862,026 for Parks, \$5,512,585 for Walkways, \$4,931,012 for County-owned Roads and \$1,883,932 for Revitalization. Projects have been initiated in all of these program areas from the sinking fund allocation. FMD has initiated several larger scale projects with the \$27,120,573 allocated to the Sinking Fund, including HVAC system component replacement at the Patrick Henry Library; emergency back-up generator replacements at the Government Center, Herrity Building and Pennino Building; replacement of the reflective coating, flashing and caulking of the roofs at the Pennino Building, Herndon Fortnightly Library and James Lee Community Center; fire alarm system replacement at the Seven Corners Children's Center; windows replacement at the Hollin Hall building; and waterproofing of the exterior building, doors and windows at the Bailey's Community Center.

In addition, as discussed with the IFC, the requirement for County infrastructure replacement and upgrades is estimated at \$26 million per year. This estimate is based on current assessment data, as well as industry standards (2 percent of the current replacement value). Based on current staffing levels, the complexity of many of the projects, and the timeline for completing replacement and upgrade projects, it is estimated that approximately \$15 million per year would be a good funding goal.

Due to budget constraints, there is no funding included in FY 2021 in this fund. However, an amount of \$8,980,000 is proposed to be funded as part of the *FY 2020 Third Quarter Review*. In recent years, it has been the Board of Supervisors' practice to fund some or all of the infrastructure replacement and upgrade projects using one-time funding as available as part of quarterly reviews. These projects, all Category F, will address emergency building repairs, fire alarm system replacement, HVAC system upgrades and building automation, roof repairs and waterproofing, elevator repairs, and parking lot and garage repairs. The table on the following page provides specific project details of the projects that are proposed to be funded at the *FY 2020 Third Quarter Review*.

FY 2021 INFRASTRUCTURE REPLACEMENT AND UPGRADE PROGRAM					
PRIORITY	PROJECT TYPE	FACILITY	CATEGORY	EXISTING CONDITIONS/DEFFICIENCIES	ESTIMATE
PROJECTS PROPOSED TO BE FUNDED AS PART OF THE FY 2020 THIRD QUARTER REVIEW					
1	Fire Alarm	Herrity Building	F	<ul style="list-style-type: none"> Increased maintenance required to keep system operational System has exceeded its useful life Disruption to building operations/end users Elevated potential for loss of property and equipment 	\$200,000
2	Roof	Centreville Regional Library	F	<ul style="list-style-type: none"> Maintenance and repairs no longer feasible Water leaks Disruption to building operations/end users Increased utilities costs 	\$1,130,000
3	Elevators	Courthouse	F	<ul style="list-style-type: none"> Increased equipment failure Old technology Parts difficult to obtain Unreliable equipment Disruption to building operations/end users 	\$2,500,000
4	Site Work	Thomas Jefferson Library (Main entrance canopy and pavement)	F	<ul style="list-style-type: none"> Potential tripping hazard Water leaks Disruption to building operations/end users 	\$115,000
5	Parking Lot	Springfield Warehouse	F	<ul style="list-style-type: none"> Maintenance no longer feasible Potential tripping hazard Surface has failed 	\$600,000
6	Site Work	Gum Springs Community Center (Ceiling tiles, restrooms, lighting fixtures and other interior work)	F	<ul style="list-style-type: none"> Continual maintenance and repairs Restroom fixtures and finishes are in poor condition Increased maintenance costs 	\$360,000
7	Site Work	Government Center (Concrete decking, drains and waterproofing)	F	<ul style="list-style-type: none"> Continued mold growth Water leaks Potential tripping hazard 	\$1,000,000
8	HVAC	Herrity Building	F	<ul style="list-style-type: none"> Increased failures Unreliable equipment Disruption to building operations/end users Increased utilities costs 	\$2,500,000
9	Parking Lot	Courthouse	F	<ul style="list-style-type: none"> Surface has failed Maintenance no longer feasible Potential tripping hazard 	\$110,000
10	Building Automation System	Fairfax City Library	F	<ul style="list-style-type: none"> Increased maintenance costs Frequent Control Board replacements Unreliable equipment Disruption to building operations/end users Increased utilities costs 	\$150,000
11	Building Automation System	Fire Training Academy	F	<ul style="list-style-type: none"> Increased maintenance costs Frequent Control Board replacements Unreliable equipment Disruption to building operations/end users Increased utilities costs 	\$175,000
12	Site Work	Herrity Building (Pavers)	F	<ul style="list-style-type: none"> Potential tripping hazard Disruption to building operations/end users 	\$100,000
13	Elevators	Fire Training Academy (Design phase only)	F	<ul style="list-style-type: none"> Increased equipment failure Old technology Parts difficult to obtain Unreliable equipment Disruption to building operations/end users 	\$40,000
Total					\$8,980,000

In addition to the above projects identified as part of the FY 2021 plan, FMD has identified many additional Category F and D projects. Analysis of these requirements is conducted annually, and projects may shift categories, become an emergency and be funded by the emergency systems failures project, or be eliminated based on other changes, such as a proposed renovation project.

CURRENT PROJECT DESCRIPTIONS

1. **ADA Compliance - FMD** (Countywide): This is a continuing project to support County compliance with the Americans with Disabilities Act at County-owned facilities. Funding for annual ADA projects to support the continuation of improvements is required, as buildings and site conditions age. For example, over time sidewalks or pavers may settle or erosion occurs changing the slope or creating gaps/obstructions, program usage changes can result in new physical barriers, or ADA entrance ramps for pedestrians can fail due to increased usage for the movement of bulk materials and equipment. Funding in the amount of \$300,000 has been included in FY 2021 for this project.
2. **Building Energy Management Systems** (Countywide): This is a continuing project to support the installation of Building Energy Management Systems (BEMS) within existing County facilities. BEMS control facility lighting, HVAC, bay door interlocking, and negative pressure room systems. Older facilities are retrofitted with these systems in order to increase energy efficiency.
3. **Capital Sinking Fund – FMD** (Countywide): \$27,120,573 has been allocated to date for the capital sinking fund for FMD. The Capital Sinking Reserve Fund was established as a direct result of the Infrastructure Financing Committee (IFC). The Board of Supervisors approved the allocation of the Capital Sinking Reserve Fund for capital projects as part of the *FY 2016 Third Quarter Review*. It is anticipated that funding for each sinking fund will be approved annually as part of the Carryover Review and will be allocated based on the following percentages: 55 percent for FMD, 20 percent for Parks, 10 percent for walkways, 10 percent for County maintained Roads and Service Drives, and 5 percent for revitalization.
4. **Carpet Replacement** (Countywide): This is a continuing project for carpet replacement at various County facilities where the existing carpet has deteriorated beyond repair or is in an unserviceable condition.
5. **Electrical System Upgrades and Replacements** (Countywide): This is a continuing project for the repair, renovation and upgrading of mechanical and electrical systems in various facilities throughout the County.
6. **Elevator/Escalator Replacement** (Countywide): This is a continuing project for the replacement and repairs of elevators throughout the County.
7. **Emergency Building Repairs** (Countywide): This is a continuing project to support the critical repair, renovation, remodeling and upgrading of various facilities throughout the County. Requirements include abatement of health or safety hazards and emergency or unanticipated repairs to building exteriors.
8. **Emergency Generator Replacement** (Countywide): This is a continuing project for generator replacements at various sites throughout the County. Requirements are programmed based on equipment age coupled with maintenance and performance history.
9. **Emergency Systems Failures** (Countywide): This is a continuing project to support emergency repairs and replacements to County facilities in the event of a major systems failure, such as a large HVAC system or other unforeseen event. Currently, this is the County's only source to deal with potential emergency system failures. Infrastructure Replacement and Upgrades funding is encumbered quickly because it is earmarked for specific projects. As a result, specific project balances are unavailable for emergencies. If a system failure should occur, there is the potential that a County facility may shut down, suspending services to residents and disrupting County business. Although the County's emphasis on infrastructure replacement and preventative maintenance is intended to ensure these kinds of interruptions are avoided, this funding will enable potential disruptions to be corrected immediately.

10. **Fire Alarm System Replacements** (Countywide): This is a continuing project for the replacement of fire alarm systems based on age, difficulty in obtaining replacement parts, service and overall condition assessment. This program provides for the replacement of fire alarm systems which are 15 to 30 years old, have exceeded their useful life and experience frequent failure when tested.
11. **HVAC System Upgrades and Replacement** (Countywide): This is a continuing project for the repair, renovation and/or upgrading of Heating Ventilation and Air Conditioning (HVAC) systems in various facilities throughout the County. In general, the useful life of HVAC systems is 20 years; however, some systems fail earlier due to wear and tear, and often emergency repairs are costly based on difficulty in obtaining parts and additional code requirements.
12. **MPSTOC County Support for Renewal** (Springfield District): \$2,138,067 is currently in reserve to begin to address future capital renewal requirements at the McConnell Public Safety Transportation Operations Center (MPSTOC). This funding is appropriated at the end of each year and supported by revenues received from the State. This revenue represents funding associated with the state reimbursement for their share of the operational costs at MPSTOC such as security, custodial, landscaping, maintenance, parking lot repairs and snow removal costs. The County pays for all operational requirements and the State reimburses the County annually for their share of these costs.
13. **MPSTOC State Support for Renewal** (Springfield District): \$781,733 is currently in reserve to begin to address future capital renewal requirements at the McConnell Public Safety Transportation Operations Center (MPSTOC). This funding is appropriated at the end of each year and supported by revenues received from the State. This revenue represents the state's annual installment of funds for their share of future repairs and renewal costs in order to avoid large budget increases for capital renewal requirements in the future. This contribution is based on the industry standard of 2 percent of replacement value or \$3.00 per square foot.
14. **Parking Lot and Garage Repairs** (Countywide): This is a continuing project for the repair and maintenance to parking lots and garages at various locations throughout the County. Parking lot surfaces are removed, the base re-compacted and a new surface course installed. In some cases, asphalt paving is milled down and resurfaced.
15. **Roof Repairs and Waterproofing** (Countywide): This is a continuing project for the repair and replacement of facility roofs and waterproofing systems at County buildings. Typically, roofs at County facilities range in warranty periods from 10 to 20 years.
16. **Window Replacement** (Countywide): This is a continuing project for the replacement or repair of windows where water is leaking into County buildings.

PROJECT COST SUMMARIES
INFRASTRUCTURE REPLACEMENT AND UPGRADES
(\$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 ADA Compliance - FMD GF-000001	G	C	\$300	\$300	\$300	\$300	\$300	\$1,500	\$1,500	\$3,000
2 Building Energy Management Systems GF-000021	G	C		\$1,500	\$1,500	\$1,500	\$1,500	\$6,000	\$7,500	\$13,500
3 Capital Sinking Fund - FMD GF-000029	G	\$27,121						\$0		\$27,121
4 Carpet Replacement 2G08-003-000	G	C		\$500	\$500	\$500	\$500	\$2,000	\$2,500	\$4,500
5 Electrical System Upgrades and Replace. GF-000017	G	C		\$500	\$500	\$500	\$500	\$2,000	\$2,500	\$4,500
6 Elevator/Escalator Replacement GF-000013	G	C		\$1,000	\$1,000	\$1,000	\$1,000	\$4,000	\$5,000	\$9,000
7 Emergency Building Repairs GF-000008	G	C		\$500	\$500	\$500	\$500	\$2,000	\$2,500	\$4,500
8 Emergency Generator Replacement GF-000012	G	C		\$1,000	\$1,000	\$1,000	\$1,000	\$4,000	\$5,000	\$9,000
9 Emergency Systems Failures 2G08-005-000	G	C		\$1,000	\$1,000	\$1,000	\$1,000	\$4,000	\$5,000	\$9,000
10 Fire Alarm System Replacements GF-000009	G	C		\$500	\$500	\$500	\$500	\$2,000	\$2,500	\$4,500
11 HVAC System Upgrades and Replacement GF-000011	G	C		\$6,500	\$6,500	\$6,500	\$6,500	\$26,000	\$32,500	\$58,500
12 MPSTOC County Support for Renewal 2G08-008-000	X	\$2,138						\$0		\$2,138
13 MPSTOC State Support for Renewal 2G08-007-000	X	\$782						\$0		\$782

PROJECT COST SUMMARIES
INFRASTRUCTURE REPLACEMENT AND UPGRADES
(\$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
14 Parking Lot and Garage Repairs GF-000041	G	C		\$1,200	\$1,200	\$1,200	\$1,200	\$4,800	\$6,000	\$10,800
15 Roof Repairs and Waterproofing GF-000010	G	C		\$600	\$600	\$600	\$600	\$2,400	\$3,000	\$5,400
16 Window Replacement 2G08-006-000	G	C		\$200	\$200	\$200	\$200	\$800	\$1,000	\$1,800
Total			\$300	\$15,300	\$15,300	\$15,300	\$15,300	\$61,500	\$76,500	\$168,041

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

Government Facilities and Programs

PROGRAM DESCRIPTION

This section includes renovations and expansions of existing County facilities including vehicle service facilities, the Massey Complex, Laurel Hill, the original Mount Vernon High School, and redevelopment plans in North County and the Southeastern portion of the County. This section also includes the County's annual capital contribution to the Northern Virginia Community College, payments associated with the purchase of the Salona property and other planning initiatives.

PROGRAM INITIATIVES

Vehicle Services

The Department of Vehicle Services (DVS) has four maintenance facilities and operates 53 County fuel sites: The Jermantown and West Ox facilities are located in the western part of the County, and the Newington and Alban facilities are in the southeastern part. These facilities provide timely, responsive, and efficient vehicle maintenance, repair and road-side services at competitive prices. Future projects may include a DVS maintenance facility in the north/northwestern part of the County and an alternative fueling site for County vehicles.

Laurel Hill

Laurel Hill, once the location of the former District of Columbia Department of Corrections Facility, was purchased by the County in 2002, and includes approximately 2,340 acres of land. Although some land north and south of Silverbrook Road is developed with residential use, most of the Laurel Hill area is under public ownership and is planned for or being developed with passive park, active recreation, public safety uses, and adaptive reuse of historic structures and spaces with a mix of uses. In addition, land has been developed with public facilities such as public schools, public infrastructure such as roadway widening and improvements, and a major greenway trail system.

Several projects are planned or underway for the Laurel Hill area:

- Fairfax County and the Workhouse Arts Foundation continue to work collaboratively to evaluate and implement initiatives to accelerate the adaptive reuse of the historic Workhouse with a mix of uses that complement and enhance the vibrant arts center activities. On January 25, 2020, the Lucy Burns Museum opened to the public marking another milestone in historic structure rehabilitation at the Workhouse Campus.
- Phase I of the transformation of the historic former Reformatory and Penitentiary buildings is complete (now known as "Liberty"), creating a new residential community on the former prison grounds. Phase I opened in spring of 2017 and residential units are occupied. Phase II construction began in October 2018 and is ongoing. It includes the renovation of prison buildings and construction of neighborhood-serving retail, residential, and office uses for the site.
- The County continues to evaluate and maintain historic structures on the site including the Laurel Hill House and the former Physician's House. The Comprehensive Plan recommends that the Laurel Hill House and its gardens be designated as a heritage resource area within the Countywide Park. The former Physician's House is located on Board property identified for public safety use and plans are under review for construction of the new South County Police Station and Animal Shelter. The Physician's House will be retained as part of the project. The ultimate use and responsibility for both houses is still to be determined.
- The Laurel Hill area contains land designated for public safety and public facility uses. Public safety uses identified include a new co-located Police Station and Animal Shelter. In addition, the Fire Department Urban Search and Rescue training facility at the former Youth Center site was approved in October 2019. Other public facilities could support the needs of solid waste, water, schools, public safety, or other County needs as identified and approved.

The Fairfax County Park Authority continues to work with several interested user groups to plan, develop and utilize some of the large park areas in Laurel Hill as well as provide capital funded improvements in accordance with the publicly adopted Conceptual Development Plan. These include the following:

- On-going maintenance of biking trails and the equestrian facility, mowing, and invasive plant removal.
- Implementation of Central Green Area Site Plan and Natural Resource Management Plan. The Central Green Area Phase 1 project is currently under construction with a projected completion date of March 2020. This project includes the development of an asphalt loop road, parking and trails, 3 picnic shelters and storm water management facilities.
- Building stabilization/repair of historic houses (including Stempson House, a Resident Curator location); removal of dangerous/collapsing structures. The Barret House is now under the Resident Curator program and improvements are currently being made to this historic feature.
- Redesign of the championship disc golf facility due to impacts from Lorton Road widening and adapted Re-Use construction projects. A proposal has been received to install a new relocated disc golf hole and tee pad to mitigate the one that was impacted by the Liberty at Laurel Crest development.
- On-going coordination with Adaptive Re-Use construction projects and with FCDOT for design of roads to access the park. The Lorton Road project has been completed.
- On-going work on the conversion of building W-35 adjacent to the Workhouse Arts Center for use as the Archeological and Museum Collections storage facility.
- Coordination with FCPD and DPWES for the location of the South County Public Safety/Animal Shelter project.
- Coordination with USAR on their proposed permanent location at the Youth Center Complex.
- Collaboration with Solid Waste on the removal of the metal butler buildings at the Nike Site.

Other Government Facilities and Programs

Other Government Facilities and Programs include the County's annual capital contributions to the Northern Virginia Community College, and commitment to the purchase of the Salona conservation easement, as well as planning for several joint venture development projects and economic success planning. Major on-going projects include the concept planning and evaluation of future capital projects such as the Massey Complex and the Original Mount Vernon High School complex.

CURRENT PROJECT DESCRIPTIONS

1. **Economic Success Planning** (Countywide): \$80,000 has been previously approved to support the development of performance measurements associated with the Fairfax County Economic Success Plan. The Economic Success Plan provides a vision of an economically strong Fairfax County, as well as goals and actions to achieve and sustain that vision, focusing on people, places, employment, and governance.
2. **Joint Venture Development** (Countywide): \$650,000 supports negotiations, development agreements, valuation, due diligence work, studies, and staff time associated with projects that are not yet funded, as well as design support, financial consultation, and real estate development for the evaluation of joint venture/public private partnership project proposals. These projects are highly complex and require a significant amount of concept planning prior to the project's acceptance and approval for financing.

3. **Massey Building Demolition** (Providence District): \$19,530,000 has been allocated to demolish the Massey Building. The Massey Building was vacated upon completion of the Public Safety Headquarters. The scope of the project includes removal of asbestos/hazardous materials, demolition of the building (Massey Building, Cooperative Computer Center, and Massey Annex), and the restoration of the site to an open grass area. Construction began in late 2018 and is scheduled to be complete in spring 2020.
4. **Massey Complex Master Planning and Redevelopment** (Providence District): \$1,025,000 has been approved to support a Massey Complex Master Planning effort to evaluate potential land use alternatives for the future of the entire Massey Complex. The County has hired a master planning consultant team and the planning process is underway. The master planning effort will include assessment of priority County uses for the site, including future criminal justice, public safety and human services' needs, as well as City of Fairfax and George Mason University interest in the site. Other County agencies currently in nearby lease space, such as the Health Department and Office for Children are being evaluated for inclusion in the Master Plan. In addition, the Courts and Community Services Board have requested a new Court Diversion First Center. Major areas of consideration will include the Massey Building site, the Old Courthouse, the Burkholder Administrative Center, and existing surface parking lots. The disposition of other County-owned real estate assets within the City of Fairfax at and near the Massey location, may also be evaluated for opportunities, and the potential for public private partnerships redevelopment will be assessed.
5. **NOVA Community College Contribution** (Countywide): \$2,578,450 is included for Fairfax County's capital contribution to the Northern Virginia Community College (NVCC). FY 2021 funding is based on a rate of \$2.25 per capita and represents no change from the FY 2020 Adopted Budget Plan rate. This rate is applied to the population figure provided by the Weldon Cooper Center. Beginning in FY 2021, the NVCC has proposed, and Fairfax County is supportive of, redirecting \$0.50 of the capital contribution rate from the capital program to the operational program to support a new "Grow Our Own" skilled workforce initiative. This initiative is proposed to address the growing shortage of IT workers in the area. This redirection of funds is possible based on current and projected capital requirements and represents the first year of a three-year program. Future year funding beyond this initial FY 2021 investment will require significant increases to the operational budget and will need to be reviewed annually.
6. **Original Mt Vernon High School Building Renovation** (Mt Vernon District): \$86,650,000 is estimated to fully fund the renovation of the existing Mt Vernon High School Building. This project includes building studies, redevelopment master planning, design and construction for interim occupancies and the renovations and adaptive reuse of the historic school facility. The facility was vacated in 2016 at the conclusion of a long-term lease. This building was constructed in 1939 and planning efforts are underway to determine adaptive reuse potential for the building that will provide pathways to opportunity for the community. Immediate occupancy for the use of the gym began in fall 2016. In addition, the Fire Marshal and Fairfax County Public Schools have occupied space since July 2017, to improve service delivery in the south county area. The renovations of space adjacent to the Gym for the relocation of the Teen/Senior Center program from the South County Center is ongoing and will be completed in early 2020. Funding of \$1,250,000 was previously approved and EDA bonds are anticipated to fund the remaining \$85.4 million.
7. **Original Mt Vernon High School Site Development** (Mt Vernon District): This project includes the future redevelopment of the 42-acre Original Mount Vernon High School site, including the adjacent FCPA site and facilities. The planning effort is being coordinated with the Mount Vernon and Lee District communities to serve a wide range of community needs and opportunities that will facilitate the economic success of Fairfax County. The County solicited development proposals in spring 2017, under the PPEA Guidelines, for the development of a Master Plan. The first phase of master planning effort is complete with focus placed on the renovations and adaptive reuse of the historic high school.



8. **Planning Initiatives** (Countywide): \$250,000 has been approved to date to support planning initiatives that arise throughout the fiscal year. This funding will provide for consultant studies associated with planning development projects and potential development opportunities.
9. **Reston Town Center North (RTCN) Library and Community Spaces** (Hunter Mill District): Approximately \$39.5 million is proposed for a replacement Reston Library, community space, and common infrastructure as part of the overall master plan to reconfigure and provide integrated redevelopment of approximately 50 acres currently owned by Fairfax County and Inova. The plan addresses the development potential consistent with the needs of the community and in conformance with the Comprehensive Plan Amendment approved in February 2014. Options for procurement and development concepts for the proposed County blocks and the library location are being reviewed. Funding of \$10,000,000 was approved as part of the 2012 Library Bond Referendum for the Library and additional funding of \$29.5 million will be required. Additional funding will support the County share of the library-related infrastructure development and a Comprehensive Real Estate and Infrastructure Development Agreement with Inova. This Agreement will provide for the real estate exchange and design and construction of the campus site infrastructure. Economic Development Authority bond financing is anticipated to fund the remaining \$29.5 million required to implement the plan.
10. **Salona Property Payment** (Dranesville District): \$787,642 is included to support the annual payment for the Salona property based on the Board of Supervisors' approval of the purchase of the conservation easement on September 26, 2005. The total cost of the property is \$18.2 million with payments scheduled through FY 2026.
11. **Telecommunication/Network Connections** (Countywide): This is a continuing project which provides funding to support telecommunication and I-net connections at new or renovated facilities.
12. **Workhouse Campus Improvements** (Mt Vernon District): \$8,000,000 has been identified for improvements at the Workhouse Campus. Funding of \$3,000,000 was previously approved from the General Fund and \$5,000,000 is anticipated to be supported by EDA bonds. The overarching vision for the 50-acre Campus, located in Lorton, is to establish a unique, widely recognized destination of choice, providing dynamic and engaging arts, cultural, educational, and community building experiences with unique economic development opportunities. The county-owned Campus contains numerous historic buildings formerly used to house and rehabilitate inmates. A number of buildings currently in use on the site have been renovated and are being adaptively reused as an arts center. The County is seeking to further explore the adaptive reuse potential of the remaining vacant campus buildings and is reviewing two buildings, identified as Workhouse-13 and Workhouse-15 for historic preservation and renovations to provide adaptive reuse opportunities.

**PROJECT COST SUMMARIES
GOVERNMENT FACILITIES AND 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 Economic Success Planning 2G30-001-000	G	\$80						\$0		\$80
2 Joint Venture Development 2G25-085-000	G	\$650						\$0		\$650
3 Massey Building Demolition GF-000023	G	\$19,530						\$0		\$19,530
4 Massey Complex Master Planning 2G25-104-000	G	\$1,025						\$0		\$1,025
5 NOVA Community College Contribution 2G25-013-000	G	C	\$2,578	\$2,578	\$2,578	\$2,578	\$2,578	\$12,890	\$12,890	\$25,780
6 Original Mt Vernon HS Building Renovation 2G25-102-000	G, X	\$12,650	\$10,000	\$64,000				\$74,000		\$86,650
7 Original Mt Vernon HS Site Development TBD	B	\$0						\$0		TBD
8 Planning Initiatives 2G02-025-000	G	\$250						\$0		\$250
9 RTCN Library and Community Spaces TBD	X	\$0	\$4,000	\$13,000	\$12,500			\$29,500		\$29,500
10 Salona Property Payment 2G06-001-000	G	\$14,213	\$788	\$761	\$734	\$707	\$680	\$3,670	\$329	\$18,212
11 Telecommunication/Network Connections GF-000004	G	\$4,255						\$0		\$4,255
12 Workhouse Campus Improvements GF-000019	G	\$3,000	\$5,000					\$5,000		\$8,000
		\$55,653	\$22,366	\$80,339	\$15,812	\$3,285	\$3,258	\$125,060	\$13,219	\$193,932

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

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.

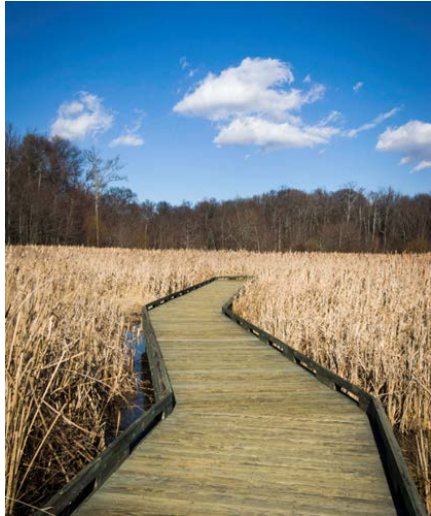


CURRENT PROJECT DESCRIPTIONS

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.
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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 Programs** (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.
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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	<i>\$1,148</i>						\$0		\$1,148
19 Permeable Sports Courts GF-000059	G	<i>\$0</i>	\$156					\$156		\$156
20 Pollinator Meadows GF-000060	G	<i>\$0</i>	\$46					\$46		\$46
21 Watershed Protection/Conservation 2G02-031-000, 2G02-021-000	G	<i>\$525</i>	\$75	\$75	\$75	\$75	\$75	\$375		\$900
22 Zero Waste Certification 2G02-032-000	G	<i>\$0</i>	\$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