

Fund 30020: Infrastructure Replacement and Upgrades

Focus

Fund 30020, Infrastructure Replacement and Upgrades, supports the long-term needs of the County's capital assets to maximize the life of County facilities, avoid their obsolescence, and provide for planned repairs, improvements and restorations to make them suitable for organizational needs. Infrastructure replacement and upgrade is the planned replacement of building subsystems such as roofs, electrical systems, HVAC, plumbing systems, windows, carpets, parking lot resurfacing, fire alarms, and emergency generators that have reached the end of their useful life. Without significant reinvestment in building subsystems, older facilities can fall into a state of ever-decreasing condition and functionality, and the maintenance and repair costs necessary to operate the facilities increase. Fairfax County will have a projected FY 2021 facility inventory of over 11.6 million square feet of space (excluding schools, parks and housing 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Many County facilities have outdated HVAC and electrical systems that are susceptible to failure or are highly inefficient energy users.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

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

HVAC

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

Conveying Systems

Elevator	25 years
Escalator	25 years

Plumbing

Pumps	15 years
Pipes and fittings	30 years
Fixtures	30 years

Finishes

Broadloom Carpet	7 years
Carpet Tiles	15 years
Systems Furniture	20 to 25 years

Site

Paving	15 years
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Roofs

Replacement	20 years
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Each year, the Facilities Management Department (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.

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 pages provides specific project details of the projects that are proposed to be funded at the *FY 2020 Third Quarter Review*.

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FY 2021 Infrastructure Replacement and Upgrade Program

(Projects proposed to be funded as part of the *FY 2020 Third Quarter Review*)

Priority	Project Type	Facility	Category	Existing Conditions/Deficiencies	Estimate
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 Disruption to building operations/end users 	\$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

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Priority	Project Type	Facility	Category	Existing Conditions/Deficiencies	Estimate
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.

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Changes to FY 2020 Adopted Budget Plan

The following funding adjustments reflect all approved changes in the FY 2020 Revised Budget Plan since passage of the FY 2020 Adopted Budget Plan. Included are all adjustments made as part of the FY 2019 Carryover Review, and all other approved changes through December 31, 2019.

Carryover Adjustments **\$56,312,677**

As part of the *FY 2019 Carryover Review*, the Board of Supervisors approved an increase of \$56,312,677 due to the carryover of unexpended project balances in the amount of \$42,181,792 and an adjustment of \$14,130,885. This adjustment includes an increase to the General Fund transfer of \$11,251,187, including: \$750,000 to support the development of phases I and II of the Community-Wide Energy and Climate Action Plan (CECAP), \$4,500,000 to support the second-year investment in the Fairfax County Operational Energy Strategy and \$6,001,187 for the Capital Sinking Fund for Facilities in accordance with recommendations of the Infrastructure Financing Committee (IFC). The Infrastructure Sinking Fund is funded as part of the Carryover Review by committing 20 percent of the unencumbered Carryover balances not needed for critical requirements. In addition, the adjustment includes a transfer from Fund 30070, Public Safety Construction, of \$2,000,000 to support emergency systems failures that occur at aging County facilities throughout the year and a transfer from Fund 30010, General Construction and Contributions, of \$500,000 to support minor repairs and miscellaneous improvements required throughout the year. Lastly, the adjustment includes the appropriation of revenues in the amount of \$379,698 received in FY 2019 associated with reimbursements from the Virginia Department of Transportation (VDOT) and the Virginia State Police for their share of the operational costs at the McConnell Public Safety and Transportation Operations Center (MPSTOC) as well as the state share of future projected capital renewal requirements at this facility.

A Fund Statement and a Summary of Capital Projects are provided on the following pages. The Summary of Capital Projects may include some projects without a Total Project Estimate amount. These projects are considered "continuing" projects or projects for which funding is necessary on an ongoing basis (e.g., a contingency or planning project).

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FUND STATEMENT

Category	FY 2019 Actual	FY 2020 Adopted Budget Plan	FY 2020 Revised Budget Plan	FY 2021 Advertised Budget Plan
Beginning Balance	\$28,857,774	\$0	\$42,561,490	\$0
Revenue:				
MPSTOC Reimbursement ¹	\$379,698	\$0	\$0	\$0
Total Revenue	\$379,698	\$0	\$0	\$0
Transfers In:				
General Fund (10001)	\$26,685,901	\$0	\$11,251,187	\$0
General Construction and Contributions (30010) ²	0	0	500,000	0
Public Safety Construction (30070) ³	0	0	2,000,000	0
Total Transfers In	\$26,685,901	\$0	\$13,751,187	\$0
Total Available	\$55,923,373	\$0	\$56,312,677	\$0
Total Expenditures	\$13,361,883	\$0	\$56,312,677	\$0
Total Disbursements	\$13,361,883	\$0	\$56,312,677	\$0
Ending Balance⁴	\$42,561,490	\$0	\$0	\$0

¹ A total of \$379,698 represents revenue received from the Virginia Department of Transportation (VDOT) and Virginia State Police associated with the state share of operating costs at the McConnell Public Safety and Transportation Operations Center (MPSTOC). These funding reimbursements will be held in projects for future infrastructure replacement and upgrade requirements. State reimbursement is based on actual operational expenditures, eliminating the need to reconcile estimates and actuals each year.

² Represents a transfer from Fund 30010, General Construction and Contributions, to support minor repairs and miscellaneous improvements required throughout the year.

³ Represents a transfer from Fund 30070, Public Safety Construction, to support emergency systems failures that occur at aging County facilities throughout the year.

⁴ Capital projects are budgeted based on the total project costs. Most projects span multiple years, from design to construction completion. Therefore, funding for capital projects is carried forward each fiscal year, and ending balances fluctuate, reflecting the carryover of these funds.

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SUMMARY OF CAPITAL PROJECTS

Project	Total Project Estimate	FY 2019 Actual Expenditures	FY 2020 Revised Budget	FY 2021 Advertised Budget Plan
Building Energy Management Systems (GF-000021)		\$6,341.60	\$28,238.40	\$0
Capital Sinking Fund for Facilities (GF-000029)	27,120,574	2,426,856.65	17,873,234.39	0
Electrical System Upgrades and Replacements (GF-000017)		540,564.00	1,400,215.00	0
Elevator/Escalator Replacement (GF-000013)		61,700.99	2,080,301.60	0
Emergency Building Repairs (GF-000008)		821,592.80	1,708,900.40	0
Emergency Generator Replacement (GF-000012)		168,652.43	1,978,959.60	0
Emergency Systems Failures (2G08-005-000)		1,841,769.23	5,775,878.40	0
Energy Service Companies (ESCO) Contract (GF-000061)	2,363,823	0.00	2,363,823.00	0
Energy Strategy - CECAP (2G02-026-000)	750,000	0.00	750,000.00	0
Energy Strategy Program - EV Stations (GF-000049)	750,000	0.00	750,000.00	0
Energy Strategy Program - FMD (GF-000048)	4,485,377	1,498,162.30	2,987,214.70	0
Energy Strategy Program - Parks (PR-000123)	2,150,800	1,514,606.05	636,193.95	0
Energy Strategy Program-LED Streetlights (GF-000050)	1,800,000	27,234.38	1,772,765.62	0
Fire Alarm System Replacements (GF-000009)		329,991.09	2,683,675.19	0
HVAC System Upgrades and Replacement (GF-000011)		1,116,426.73	7,416,255.35	0
MPSTOC County Support For Renewal (2G08-008-000)		1,156,896.00	2,138,067.20	0
MPSTOC State Support For Renewal (2G08-007-000)		0.00	781,733.00	0
Parking Lot and Garage Improvements (GF-000041)		516,891.69	330,108.31	0
Public Safety Renewal - DPWES (GF-000015)		14,519.47	0.00	0
Roof Repairs and Waterproofing (GF-000010)		1,319,677.21	2,857,113.38	0
Total	\$39,420,574	\$13,361,882.62	\$56,312,677.49	\$0