

Fund 317

Capital Renewal Construction

Focus

This fund 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. Capital renewal is the planned replacement of building subsystems such as roofs, electrical systems, HVAC, plumbing systems, carpet replacement, parking lot resurfacing, fire alarm replacement and emergency generator replacement 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 2012 facility inventory of over 8.5 million square feet of space throughout the County (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Many County facilities have outdated HVAC and electrical systems that are susceptible to failure or are highly inefficient energy users.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 repairs and waterproofing are conducted in priority order after all roofs at County facilities are evaluated. Based upon the results of that evaluation, critical requirements are prioritized and a five-year plan is established. 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 capital renewal requirements, coupled with actual condition of the subsystem component:

General Guidelines for Expected Service Life Of Building Subsystems

<u>Electrical</u>		<u>Plumbing</u>	
Lighting	20 years	Pumps	15 years
Generators	25 years	Pipes and fittings	30 years
Service/Power	25 years	Fixtures	30 years
Fire Alarms	15 years		
<u>HVAC</u>		<u>Finishes</u>	
Equipment	20 years	Broadloom Carpet	7 years
Boilers	15 to 30 years	Carpet Tiles	15 years
Building Control Systems	10 years	Systems Furniture	20 to 25 years

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Conveying Systems

Elevator	25 years
Escalator	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 capital renewal 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.

For several years staff has identified an estimated requirement of \$22 to \$26 million in capital renewal investment annually for the current building inventory. This estimate was based on two factors:

- In 2004, a comprehensive facilities condition assessment was conducted on 92 selected Fairfax County facilities (approximately 4.2 million square feet of space), representative of older facilities anticipated to have the most immediate capital renewal requirements. The assessment included a complete visual inspection of roofs and all mechanical and electrical components for each facility. Maintenance and repair deficiencies were identified and funding requirements estimated. Results from the survey indicated that approximately \$13 million per year would be required to repair and meet expected equipment replacement needs for these 92 facilities. The number of facilities evaluated represents approximately 50 percent of the current inventory, indicating a total current level of approximately \$25 million annually.
- The industry standard for capital renewal investment is currently 2 percent of replacement value. Based on average replacement values of \$150 per square foot, 2 percent equates to capital renewal requirements of \$3.00 per square foot. Budgeted renewal funds in the County have not reached this level. This may be due to the fact that much of the square footage added in the early 1990s was in the form of new facilities and thus has not yet required major capital renewal and subsystem replacement. However, this infrastructure is now aging and appropriate action must be taken to avoid system failures leading to potential disruptions in County services. Applying a \$3.00 per square foot industry standard to the 8,494,171 of square feet currently maintained would result in approximately \$25.5 million required annually for capital renewal expenses.

In September 2009, it was estimated that a backlog of approximately \$35 million in capital renewal projects existed. In order to address this backlog and to plan for a more sustainable and reasonable annual funding level, as part of the FY 2011 Adopted Budget Plan, the Board of Supervisors approved a 3-year plan of short-term borrowing. FY 2012 is the second appropriation for capital renewal projects supported by short-term borrowing. In FY 2011, \$5 million was appropriated and in FY 2013 another \$15 million is anticipated for a total of \$35 million. Eliminating this \$35 million backlog will allow for a more preventative and proactive maintenance program, increase the life cycle of County buildings, and enable the renewal program to reach a fairly consistent level of annual funding requirements. Borrowing will be based on actual project completion schedules and cash flow requirements and will be achieved through the establishment of a variable rate line of credit in order to take advantage of very low short-term interest rates. The payback of both principle and interest on the short-term borrowing program will be provided by the General Fund in the County's debt service fund. Staff will maintain an even level of General Fund support by increasing debt service funding and decreasing General Fund transfers to Fund

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317 during the next 10 years. Short-term borrowing for capital renewal is included in the debt capacity estimates in the Capital Improvement Program (CIP) and can be accommodated within established debt limits for General Fund supported debt.

In addition, staff continues to supplement the General Fund supported capital renewal program by increasing bond referendum amounts associated with specific purposes. For example, the voters approved \$5 million in the fall 2004 bond referendum for library and human service facility capital renewal requirements and another \$5 million in the fall 2006 bond referendum associated with public safety facility capital renewal requirements. This practice is expected to continue where appropriate.

The FY 2012 capital renewal plan by category is outlined below:

Category	Amount
Category F Projects	\$14,725,000
Facility Condition Assessment	215,000
Category D Project	60,000
FY 2012 Funded	\$15,000,000

This identified level of funding does not include significant estimated requirements at several County facilities which are under review for replacement, including the Massey Building. In addition, this does not include any green building initiatives such as green roofs, enhanced lighting software, Americans with Disability Act (ADA) retrofits, or energy audit work. FY 2012 funding, as detailed below, will provide for the entire category F (urgent/safety related, or endangering life and/or property) projects and one Category D project. Specific funding levels in FY 2012 include:

HVAC/Electrical Systems

This project provides for the planned replacement of HVAC systems at prioritized County facilities, based on the severity of problems including overloaded systems, fire hazards, and costly repairs. FY 2012 funding of \$5,570,000 will provide for HVAC replacement and electrical repairs at a variety of County facilities. In general, the useful life of HVAC/Electrical systems is 20 years; however, some systems fail earlier due to wear and tear, and often emergency repairs are costly based on difficulty obtaining parts and additional code requirements.

Funding of \$4,000,000 is included to replace antiquated HVAC system components at the Old Courthouse which was built in the 1800's. The last HVAC replacement was in 1990 and the system is now beyond its useful life. It is consistently at risk of failure and is requiring increased maintenance efforts due to age and stress on the system. Replacement components include chillers, air handlers, cooling towers and steam boilers which will all need to be replaced and upgraded to meet current code requirements. The Old Courthouse is currently undergoing other renewal efforts which are supported by \$6.5 million in General Obligation bonds approved as part of the 2006 Public Safety Bond Referendum. This renewal work is focused on the structural envelop of the building, including securing the foundation to alleviate water damage, repairing and upgrading the masonry around the perimeter of the building and renovating existing space in order to house the County's historic archives. The building has been experiencing leaking, moisture accumulation, and mold issues which can compromise the foundation and structural frame. This work is expected to be completed in the next two years and additional repairs such as additional electrical work, replacement of the generator and security systems will be required in future years.

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Funding of \$900,000 is provided to replace the electrical distribution system and the uninterruptible power source (UPS) that protects backup Emergency-911 equipment, including the Computer Aided Dispatch system, and other computers and data centers at the 51 year old Pine Ridge facility. The Pine Ridge facility houses the critical Emergency-911 back-up center, and several Police Department operations such as the Police Motorized Division, SWAT team and other tactical teams. The UPS system protects mission critical computer systems in the event of a power surge or failure and enables the systems to keep running, avoiding disruptions in service. The UPS system is able to assume immediate power during power outages by maintaining operations until backup generators are activated.

Funding of \$450,000 is included to replace HVAC system components at the 17 year old New Beginnings facility, and funding of \$35,000 is included to replace the air handling unit which regulates air conditioning at the 18 year old Herndon Library. All of these repairs have been classified as safety risks in need of imminent repairs or critical systems beyond their useful life and in risk of failure. In addition, repairs at these two sites are no longer cost effective.

Lastly, funding is provided for replacement batteries to support the UPS systems at two critical facilities. UPS systems are battery operated and in general, the life expectancy of the batteries is 3 to 5 years. Often, frequent system disruptions, power surge events and prolonged battery usage, can result in more frequent battery replacement. FY 2012 includes the planned replacement of batteries at the Jennings Courthouse in the amount of \$60,000 and the McConnell Public Safety and Transportation Operations Center (MPSTOC) in the amount of \$125,000.

Emergency Generator Replacement

This project provides for the planned replacement of emergency generators at mission critical County facilities that have outlived their useful life of 25 years. Generators are critical to the mission and operation of County facilities by providing backup power when power outages occur. Generators are maintained at police stations, fire stations and other operationally critical County facilities. FY 2012 funding of \$1,350,000 includes: \$700,000 for replacement of two generators at the 51 year old Pine Ridge facility, \$500,000 for replacement of the 21 year old system at the Jermantown Garage; and \$150,000 for replacement of the 22 year old Chantilly Fire Station generator. Generators are critical at these facilities due to potential power outages and a disruption in critical operations for staff and the public. In general, these systems last 25 years, but replacement requirements can vary based on wear and tear, frequency of repair requirements, and other signs of imminent failure.

Elevator/Escalator Replacement

This project provides for planned elevator or escalator replacement and upgrades for systems that have outlived their useful life and are experiencing frequent breakdowns. FY 2012 funding in the amount of \$2,375,000 includes funding of \$2,000,000 to address escalator replacement at the 19 year old Jennings Courthouse which is experiencing significant increases in maintenance resulting from a fracture in the escalator track and a large gap between the step and side panel. The escalator is requiring frequent repairs and causing a disruption in service and severe safety concerns for patrons of the Courthouse.

In addition \$300,000 is required to support design work for elevator replacement at the 19 year old Pennino and Herrity Buildings; and \$75,000 is required for the Herrity and Pennino Garage elevators which are both used by employees and the public and could create safety concerns for patrons. Both elevator and escalator replacements will satisfy all current code requirements and provide for the safety of users. Construction funding for upgrades and replacement at the Pennino and Herrity campus will be required once design work is complete.

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Fire Alarm Systems

This project provides for the planned replacement of fire alarm systems throughout the County. Fire alarm systems are replaced based on age and difficulty in obtaining replacement parts and service. FY 2012 funding in the amount of \$1,185,000 is included for the replacement of the obsolete and aged fire alarm systems at the following County facilities: Pine Ridge, Clifton Fire Station, Sherwood Library, Mason Government Center, Whitman Annex, Lorton Library, Franconia Government Center and the Old Jail portion of the Historic Courthouse.

Roof Repair and Replacement

This project provides for the planned replacement or repair of facility roofs and waterproofing systems in County buildings. Maintenance and repairs are required to stop rapid deterioration and damage due to water penetration. As roofs age, repairs are no longer cost effective and replacement is required. Roofs at County facilities range in warranty periods from 10 to 20 years. The warranties on all of the roofs slated for replacement in FY 2012 have expired. In FY 2012, funding in the amount of \$1,095,000 is included for roof repairs and replacement including: \$250,000 for the 22 year old Gum Springs Community Center, \$150,000 for the 13 year old Woodlawn Fire Station, \$150,000 for the 23 year old George Mason Library, \$150,000 for the 23 year old Baileys Community Center, \$120,000 for the 17 year old Sherwood Library, \$100,000 for the 24 year old McLean Fire Station, \$100,000 for the 51 year old Penn Dawn Fire Station; and \$75,000 for the 11 year old roof at the Alban Garage. In general, roof replacement is required every 20 years; however, leaking and damage caused by water infiltration to facilities can require more immediate attention.

Parking Lot and Garage Repairs

This project provides for the planned repair and maintenance of facility parking lots and garages throughout the County. In FY 2012, funding of \$660,000 is included for re-paving and repairs to three parking lots. Funding of \$350,000 is required to repave the Jermantown Department of Vehicle Services (DVS) Garage based on rapid deterioration of the asphalt. This DVS garage is a heavy traffic facility supporting large volumes of public safety vehicles, trucks and maintenance vehicles entering and exiting the facility daily. With such a large volume of vehicle traffic, the asphalt is deteriorating more rapidly. In addition, repaving and replacement of parking lots and concrete ramps is required at the Pohick Fire Station in the amount of \$160,000; and the McLean Fire Station in the amount of \$150,000. Parking lots at fire stations tend to deteriorate more rapidly based on the frequent use of heavy apparatus vehicles. In general paving will last 15 years; however, heavy vehicle use, temperature changes, water penetration, chemicals used for snow removal, and fuel leaks from vehicles under repair can cause the asphalt to deteriorate more rapidly.

Emergency Building Repairs

This project provides for emergency repairs, minor renovations, and critical upgrading at various buildings and facilities throughout the County. Projects include emergency repairs to buildings and building equipment, plumbing repairs, minor renovations to electrical and mechanical systems, structural repairs, vandalism abatement, and other non-recurring construction and repair projects. A total of \$2,765,000 is included in FY 2012.

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Funding in the amount of \$1,500,000 is included for critical work at the 60 year old Willston Center including repairs and renovation of restrooms, plumbing fixtures and flooring. The Willston Center building was constructed in the 1950s as an elementary school with much of the original fixtures and systems still in place. The Willston Center is a multi-cultural center offering drop-in recreational programs designed for elementary school children during the spring, summer and winter breaks; an adult education center; a computer learning center; and other community center programs. The restrooms used by both employees and the public currently do not have hot water available and are in extreme need of repairs. This amount also includes the removal of the original floor tiles in the restrooms which have been determined to contain asbestos. Staff and patrons will need to be temporarily relocated while the asbestos mitigation process takes place. FY 2012 funding will provide for a complete restoration of all restrooms in the building to prevent further deterioration, leakage and potential health and safety concerns.

In addition, funding in the amount of \$700,000 is included to provide sealant and caulking throughout the entire Government Center parking garage (P1 and P2) as well as install new hood grates which provide for exhaust discharge and protect against water infiltration into the garage. During heavy rain events, flooding occurs in the garage which deteriorates the concrete surfaces and imminent repairs are needed. Funding in the amount of \$350,000 is also included to recaulk all windows and expansion joints at the Adult Detention Center facility. Much of the original caulking has failed and water continues to leak into the building presenting an imminent safety hazard.

Lastly, \$215,000 is included to conduct a facility assessment at approximately 40 County facilities to specifically identify future capital renewal needs. The last facility assessment was conducted in 2004 on 92 selected facilities (approximately 4.2 million square feet of space), representative of the oldest facilities at the time. The assessment included a complete visual inspection of roofs and all mechanical and electrical components for each facility. Maintenance and repair deficiencies were identified and funding requirements estimated. These 92 facilities represent approximately 50 percent of the current inventory. Additional facility assessment funding will allow inspectors to evaluate major building systems, identify cost estimates associated with repair and replacement and plan for future renewal requirements. The study will include approximately 40 of the remaining facilities not evaluated in 2004 which are now aging and require a comprehensive review.

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Changes to FY 2011 Adopted Budget Plan

The following funding adjustments reflect all approved changes in the FY 2011 Revised Budget Plan since passage of the FY 2011 Adopted Budget Plan. Included are all adjustments made as part of the FY 2010 Carryover Review, FY 2011 Third Quarter Review, and all other approved changes through April 12, 2011.

- ◆ As part of the *FY 2010 Carryover Review*, the Board of Supervisors approved an increase of \$32,519,520 due to the carryover of unexpended project balances in the amount of \$32,466,173 and an adjustment of \$53,347. This adjustment was due to the appropriation of \$53,347 in revenues received in FY 2010 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. The MPSTOC is a new high-security, state-of-the-art facility which houses the County's 911 Center and Emergency Operations Center as well as VDOT's Smart Traffic and Signal Centers and the State Police Communications Center. The County pays for all operational requirements such as security, custodial, landscaping, maintenance, parking lot repairs and snow removal and the State reimburses the County for their share of these costs. In addition, the state has begun providing annual funding for future repair and renewal costs to avoid large budget increases for required capital renewal costs in the future. Funding received from the state is appropriated annually at the Carryover Review.

- ◆ As part of the *FY 2011 Third Quarter Review*, the Board of Supervisors made no adjustments to this fund.

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

Fund Type G30, Capital Project Funds

Fund 317, Capital Renewal Construction

	FY 2010 Actual	FY 2011 Adopted Budget Plan	FY 2011 Revised Budget Plan	FY 2012 Advertised Budget Plan	FY 2012 Adopted Budget Plan
Beginning Balance	\$21,201,555	\$0	\$23,519,520	\$0	\$0
Revenue:					
Sale of Bonds ¹	\$0	\$0	\$9,000,000	\$0	\$0
Short Term Borrowing ²	0	5,000,000	5,000,000	15,000,000	15,000,000
MPSTOC Reimbursement ³	53,347	0	0	0	0
Total Revenue	\$53,347	\$5,000,000	\$14,000,000	\$15,000,000	\$15,000,000
Transfer In:					
General Fund (001) ⁴	\$7,470,000	\$3,000,000	\$3,000,000	\$0	\$0
Total Transfers In	\$7,470,000	\$3,000,000	\$3,000,000	\$0	\$0
Total Available	\$28,724,902	\$8,000,000	\$40,519,520	\$15,000,000	\$15,000,000
Total Expenditures	\$5,205,382	\$8,000,000	\$40,519,520	\$15,000,000	\$15,000,000
Total Disbursements	\$5,205,382	\$8,000,000	\$40,519,520	\$15,000,000	\$15,000,000
Ending Balance⁵	\$23,519,520	\$0	\$0	\$0	\$0

¹ The sale of bonds is presented here for planning purposes only. Actual bond sales are based on cash needs in accordance with Board policy. On November 7, 2006, the voters approved a \$125 million Public Safety Bond Referendum, of which \$14 million was designated for capital renewal purposes. Including prior sales, an amount of \$9.0 million remains in authorized but unissued bonds from the November 7, 2006 bond referendum.

² In FY 2012, funding of \$15,000,000 is provided using the County's short-term borrowing tools in order to reduce existing capital renewal backlogs.

³ A total of \$53,347 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 capital renewal projects for future replacement requirements.

⁴ The FY 2011 General Fund transfer of \$3,000,000 supports emergency renewal projects at County facilities.

⁵ 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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FY 2012 Summary of Capital Projects

Fund: 317, Capital Renewal Construction

Project #	Description	Total Project Estimate	FY 2010 Actual Expenditures	FY 2011 Revised Budget	FY 2012 Advertised Budget Plan	FY 2012 Adopted Budget Plan
003099	Emergency Building Repairs		\$444,638.05	\$762,877.98	\$2,765,000	\$2,765,000
003100	Fire Alarm Systems		584,262.20	1,819,702.18	1,185,000	1,185,000
009132	Roof Repairs and Waterproofing		0.00	1,000,000.00	1,095,000	1,095,000
009133	Carpet Replacement		33,724.71	50,966.11	0	0
009136	Parking Lot and Garage Repairs		0.00	2,628,400.00	660,000	660,000
009145	Emergency Systems Failures		380,334.80	6,342,994.87	0	0
009151	HVAC/Electrical Systems		2,583,666.82	8,770,130.24	5,570,000	5,570,000
009431	Emergency Generator Replacement		822,475.68	1,481,205.19	1,350,000	1,350,000
009481	Juvenile/Human Services Capital Renewal		14,812.07	0.00	0	0
009600	Elevator Replacement		75,210.04	7,419,203.82	2,375,000	2,375,000
009601	Public Safety Capital Renewal		266,257.91	9,354,176.79	0	0
009602	Window Replacement		0.00	350,000.00	0	0
009703	State Support for MPSTOC Renewal		0.00	89,848.00	0	0
009704	County Support for MPSTOC Renewal		0.00	450,015.00	0	0
Total		\$0	\$5,205,382.28	\$40,519,520.18	\$15,000,000	\$15,000,000