

SEWERS

Including the Sanitary Sewer Fund and
Stormwater Management Fund

Sewers

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Sewers

Sewers - Sanitary Sewers Subsection/Project	<i>Unallocated Balance (05/11)</i>	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY 12-FY 21
Sanitary Sewers												
Commonwealth Service Chamber	\$370,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Holmes Run Trunk Sewer	6,037,000	0	0	0	0	0	0	0	0	0	0	0
Reclaimed Water System via WTE Plant	100,000	0	0	0	0	0	0	0	0	0	0	0
Sanitary Sewer Capacity Studies	449,877	0	0	0	0	0	0	0	0	0	0	0
Mitigation of Combined Sewer Overflows	1,277,690	304,000	319,000	335,000	335,000	350,000	350,000	350,000	350,000	350,000	350,000	3,393,000
Reconstructions & Exts. of Sanitary Sewers	2,430,050	863,868	900,000	980,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	9,743,868
Sewer Separation Projects	0	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	6,000,000
Four Mile Run Sanitary Sewer Repair	0	300,000	1,500,000	0	0	0	0	0	0	0	0	1,800,000
Holmes Run Sewershed Infiltration & Inflow	0	4,960,000	4,360,000	4,200,000	3,600,000	0	0	0	0	0	0	17,120,000
Sanitary Sewer Master Plan	0	0	0	0	0	0	0	0	0	0	10,000	10,000
Sanitary Sewers Total	\$10,664,617	\$7,027,868	\$7,679,000	\$6,115,000	\$5,535,000	\$1,950,000	\$1,950,000	\$1,950,000	\$1,950,000	\$1,950,000	\$1,960,000	\$38,066,868
Sewers - Storm Sewers												
Storm Sewers												
NPDES / MS4 Permit	\$175,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Taylor's Run at Janney's Lane	551,250	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous Storm Sewer Repairs	2,197,715	1,266,398	1,565,741	1,653,435	754,733	312,312	1,226,552	1,097,860	226,664	363,418	508,608	8,975,721
Fort Ward Stormwater	0	85,000	0	0	0	0	0	0	0	0	0	85,000
Storm/Combined Sewer Assessment and Renovation	0	450,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	8,550,000
Storm Sewer Capacity Analysis	1,088,500	600,000	0	0	0	0	0	0	0	0	0	600,000
Key Drive Flood Mitigation	0	0	0	0	1,000,000	800,000	0	0	0	0	0	1,800,000
Braddock Rd. & West St. Storm Sewer	0	0	0	0	0	750,000	750,000	1,000,000	2,000,000	2,000,000	2,000,000	8,500,000
Storm Sewers Total	\$4,012,465	\$2,401,398	\$2,465,741	\$2,553,435	\$2,654,733	\$2,762,312	\$2,876,552	\$2,997,860	\$3,126,664	\$3,263,418	\$3,408,608	\$28,510,721
Sewers Total	\$14,677,082	\$9,429,266	\$10,144,741	\$8,668,435	\$8,189,733	\$4,712,312	\$4,826,552	\$4,947,860	\$5,076,664	\$5,213,418	\$5,368,608	\$66,577,589
Less Total Non-City Revenues	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Net City Costs	\$14,677,082	\$9,429,266	\$10,144,741	\$8,668,435	\$8,189,733	\$4,712,312	\$4,826,552	\$4,947,860	\$5,076,664	\$5,213,418	\$5,368,608	\$66,577,589

Sewers

SANITARY SEWER FUND

Overview: The FY 2012 – 2021 Sanitary Sewer Fund plan includes \$38.1 million in sanitary sewer improvement projects for reducing stormwater inflow and infiltration and expanding capacity in order to prevent sanitary sewer backups and minimize the environmental impacts of sanitary sewer discharge. These improvements are required as part of the City's compliance with state environmental permitting regulations. A Sanitary Sewer Master Plan is currently under development and will identify additional capital needs beyond those contained in the FY 2012 – 2021 CIP.

Revenue Generation: The Sanitary Sewer Fund is funded by a combination of sewer connection fees charged to developers for tying new structures in to the system and sanitary sewer usage fees charged to existing property owners on the quarterly water bill base on gallons consumed. The sewer connection fees are adjusted annually according to the CPI-U. The sewer usage fee was increased to \$1.25/1,000 gallons in FY 2011. The current rate costs the typical household approximately \$87.50 annually, or \$21.88 per quarter.

The FY 2012 - 2021 CIP calls for the leveraging of \$15.6 million in General Obligation Bonds over four years (FY 2012 -2015), with the debt service to be covered by sewer fee revenues.

Planned Projects: The projects included in the FY 2012 – FY 2021 Approved Sanitary Sewer Fund plan address maintenance-related issues necessary at current levels of development in the City. It is likely that future Sanitary Sewer Fund plans will incorporate new capacity-related projects stemming from projected development and population growth in the City. Additional revenue will likely be required to fund these projects, with the sewer tap fee and the sewer line maintenance fees being the likely two main sources for providing these funds.

Sewers

SANITARY SEWER FUND SOURCES AND USES

Category/Project	Unallocated	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY12-FY21
Category 1												
Mitigation of Combined Sewer Overflows	\$1,277,690	\$304,000	\$319,000	\$335,000	\$335,000	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000	\$3,393,000
Reconstructions & Exts. of Sanitary Sewers	2,430,050	863,868	900,000	980,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	9,743,868
Sanitary Sewer Capacity Studies	449,877	0	0	0	0	0	0	0	0	0	0	0
Sewer Separation Projects	0	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	6,000,000
Subtotal Category 1	4,157,617	1,767,868	1,819,000	1,915,000	1,935,000	1,950,000	1,950,000	1,950,000	1,950,000	1,950,000	1,950,000	19,136,868
Category 2												
Commonwealth Service Chamber	370,000	0	0	0	0	0	0	0	0	0	0	0
Holmes Run Trunk Sewer	6,037,000	0	0	0	0	0	0	0	0	0	0	0
Four Mile Run Sanitary Sewer Repair	0	300,000	1,500,000	0	0	0	0	0	0	0	0	1,800,000
Holmes Run Sewershed Infiltration & Inflow	0	4,960,000	4,360,000	4,200,000	3,600,000	0	0	0	0	0	0	17,120,000
Subtotal Category 2	6,407,000	5,260,000	5,860,000	4,200,000	3,600,000	0	0	0	0	0	0	18,920,000
Category 3												
Reclaimed Water System via WTE Plant	100,000	0	0	0	0	0	0	0	0	0	0	0
Sanitary Sewer Master Plan	0	0	0	0	0	0	0	0	0	0	10,000	10,000
Subtotal Category 3	100,000	0	0	0	0	0	0	0	0	0	10,000	10,000
Subtotal Capital Expenditures	\$10,664,617	\$7,027,868	\$7,679,000	\$6,115,000	\$5,535,000	\$1,950,000	\$1,950,000	\$1,950,000	\$1,950,000	\$1,950,000	\$1,960,000	\$38,066,868
Operating Costs												
Personnel		\$1,753,569	\$1,797,408	\$1,842,343	\$1,888,402	\$1,935,612	\$1,984,002	\$2,033,602	\$2,084,442	\$2,136,554	\$2,189,967	\$19,645,903
Non-Personnel		803,660	823,752	844,345	865,454	887,090	909,268	931,999	955,299	979,182	1,003,661	9,003,710
Debt Service - prior debt issuance		1,164,983	1,128,697	1,045,981	988,533	934,164	882,785	834,232	788,349	744,990	716,286	9,228,998
Debt Service - planned future debt issuance		229,920	1,028,118	1,538,611	1,877,516	2,141,708	2,221,233	2,172,959	2,124,685	2,076,411	2,028,137	17,439,298
Total Operating Expenditures		\$3,952,132	\$4,777,975	\$5,271,281	\$5,619,905	\$5,898,574	\$5,997,288	\$5,972,792	\$5,952,775	\$5,937,136	\$5,938,052	\$55,317,909
Total Sanitary Sewer Expenditures		\$10,980,000	\$12,456,975	\$11,386,281	\$11,154,905	\$7,848,574	\$7,947,288	\$7,922,792	\$7,902,775	\$7,887,136	\$7,898,052	\$93,384,777
Sanitary Sewer Module Funding Sources												
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY12-FY21
Sewer Line Maintenance Fee		\$6,700,000	\$6,700,000	\$6,700,000	\$6,700,000	\$6,700,000	\$6,700,000	\$6,700,000	\$6,700,000	\$6,700,000	\$6,700,000	\$67,000,000
Sewer Connection Fee		800,000	1,000,000	1,050,000	1,102,500	1,157,625	1,215,506	1,276,282	1,340,096	1,407,100	1,477,455	11,826,564
New Debt Issuance		3,480,000	4,850,000	3,530,000	3,750,000	0	0	0	0	0	0	15,610,000
Fund Balance Carryover		0	0	93,025	(13,255)	384,340	393,391	361,609	415,099	552,419	772,383	2,959,010
Total Funding Sources		\$10,980,000	\$12,550,000	\$11,373,025	\$11,539,245	\$8,241,965	\$8,308,897	\$8,337,891	\$8,455,194	\$8,659,519	\$8,949,839	\$97,395,575
Year-End Fund Balance		\$0	\$93,025	(\$13,255)	\$384,340	\$393,391	\$361,609	\$415,099	\$552,419	\$772,383	\$1,051,787	

Sewers

Commonwealth Service Chamber

Subsection: Sanitary Sewers
Managing Department: T & ES
Project Category: 2

Estimated Useful Life of Improvement: 40 years
Priority: Highly Desirable
Strategic Plan Goal: 2

Project Summary: This project will fund the construction of a service chamber on the Commonwealth Interceptor. The service chamber will act to prevent sewer backups during wet weather flows from the combined sewer area when the combined sewer outfall at Hooff's Run is submerged. The service chamber may be similar to two located on the Holmes Run Trunk Sewer that protect the low lying developed areas in the Eisenhower Valley. A study was initiated in FY 2010, and is scheduled for completion in FY 2011 using the remaining unallocated project balance of \$370,000. Construction costs and schedule will be determined at the completion of the study, and have not been factored in the FY 2012 – FY 2021 CIP.

Changes from Prior Year: No changes from prior years.

Operating Impact: This project will have no impact on the operating budget

Commonwealth Service Chamber	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	370,000	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	370,000	0	0	0	0	0

Commonwealth Service Chamber	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	0	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	0

Sewers

Holmes Run Trunk Sewer

Subsection: Sanitary Sewers
Managing Department: T & ES
Project Category: 2

Estimated Useful Life of Improvement: 40 years
Priority: Highly Desirable
Strategic Plan Goal: 2

Project Summary: This project provides for an increase in capacity in the Holmes Run trunk sewer line, required to support development occurring in the Eisenhower Valley, as well as future development and redevelopment in the West End. Engineering studies indicated that lining the existing sewer with specialized materials would provide the needed capacity increase with minimal environmental disruption. Relining will increase the capacity in the western portion of the sewer from Van Dorn Street to Eisenhower Avenue at Cameron Run. A total of \$6.037 million in unallocated project balance from prior fiscal years will be combined with a project balance of \$614,000 to complete this phase of the project. Alexandria Sanitary Authority (ASA) maintains this trunk sewer.

Project History: Phase I of this project included relining the western portion of the trunk sewer, completed in summer 2008. Additional engineering and analysis has determined that pipe lining alone will not increase capacity sufficiently in the Phase II – East Eisenhower section. Additional engineering analysis is underway to evaluate other capacity relief options, including constructing a relief sewer from Eisenhower Avenue to the Alexandria Sanitation Authority plant, and potential wet weather sewer storage and treatment in the Holmes Run Service Area.

Changes from Prior Year: No changes from prior year.

Operating Impact: This project does not have an impact on the City's operating budget, as it is maintained by the Alexandria Sanitation Authority.

Holmes Run Trunk Sewer	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	6,037,000	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	6,037,000	0	0	0	0	0

Holmes Run Trunk Sewer	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	0	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	0

Sewers

Reclaimed Water System via Eisenhower Avenue Waste-to-Energy Plant

Subsection: Sanitary Sewers

Estimated Useful Life of Improvement: 40 years

Managing Department: T & ES

Priority: Desirable

Project Category: 3

Strategic Plan Goal: 2

Project Summary: Reuse is an integral part of water resources management, wastewater management, and ecosystem management. It reduces demands on valuable surface and ground waters used for drinking water sources and may add capacity at the Water Reclamation Facility. Based on growth pressures within the City and current regulatory nutrient constraints at the Alexandria Sanitation Authority's (ASA) Advanced Waste Treatment Facility, ASA and the City funded a study to evaluate the feasibility, constructability and potential cost benefits of operating a wastewater reuse system to service the Covanta Waste-to-Energy Plant located on Eisenhower Avenue. A market assessment study for a reclaimed water system was completed in FY 2010. Funding for the design phase of this project is not budgeted in the FY 2012 – FY 2021 CIP. Following the completion of the Sanitary Sewer Master Plan, the City will know more about it and when to budget the design funds for this project if this option is chosen. After further study, the economic feasibility of this water reuse option will be clearer.

Changes from Prior Year: No changes from prior year. An unallocated balance of \$100,000 from prior years remains for design if the City proceeds with the project.

Operating Impact: The project will have no impact on operating cost at this time.

Reclaimed Water System via WTE	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	100,000	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	100,000	0	0	0	0	0

Reclaimed Water System via WTE	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	0	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	0

Sewers

Sanitary Sewer Capacity Sewers

Subsection: Sanitary Sewers

Managing Department: T & ES

Project Category: 1

Estimated Useful Life of Improvement: 40 years

Priority: Essential

Strategic Plan Goal: 2

Project Summary: This project provides for an ongoing sanitary sewer capacity study to assess the sanitary sewer's systems ability to support existing flows and on-going development.

Changes from Prior Year: FY 2012 – 2021 funding has been moved to the Sanitary Sewers operating budget. An unallocated balance of \$449,877 remains to complete studies as part of the CIP. Once all funding is expended, the project will be removed from the CIP.

Operating Impact: All costs are shifted to the Sanitary Sewer Fund operating budget. There will be no impact on the bottom line of Sanitary Sewer Fund budget.

Sanitary Sewer Capacity Studies	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	449,877	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	449,877	0	0	0	0	0

Sanitary Sewer Capacity Studies	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	0	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	0

Sewers

Mitigation of Combined Sewer Overflows (CSOs)

Subsection: Sanitary Sewers

Managing Department: T & ES

Project Category: 1

Estimated Useful Life of Improvement: 40 years

Priority: Essential

Strategic Plan Goal: 2

Project Summary: This project category funds the mitigation projects related to combined sewer overflows (CSOs). The City's combined storm and sanitary sewer system is comprised of areas east of the railroad corridor (primarily Old Town), which includes an area of approximately 560 acres. Combined sewer outfalls (discharge points for wet weather overflows) are located at the foot of Pendleton and Royal Streets and under Duke Street at Hooff's Run. Approximately \$1.33 million in prior year unallocated funds remains to be used for the program as required by the existing permit. In addition, a total of \$3.393 million has been planned over ten years to continue the implementation of permit conditions through FY 2021. A total mitigation of the CSO system would require significantly more funds than planned in this CIP.

Changes from Prior Year: \$350,000 has been added to FY 2021 to address future CSO projects.

Project History: The City began engineering studies in the early 1990's to seek alternative approaches to control combined sewer overflows and in 1995 submitted a Long Term Control Plan (LTCP) to the Virginia Department of Environmental Quality (VADEQ). The VADEQ first issued the City a permit for its combined sewer system in 1995. Based on the City's studies, the permit calls for the City to operate and maintain the combined sewer system according to the United States Environmental Protection Agency's (USEPA) technology-based best management practices. The practices are known as the Nine Minimum Controls (NMCs) and are part of the National CSO Control Policy. The NMCs that the City implemented for controlling CSO discharges comprise the following:

1. Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows;
2. Maximum use of the collection system for storage;
3. Review and modification of the pretreatment program to assure CSO impacts are minimized;
4. Maximization of flow to the publicly owned and treated works (POTW) for treatment;
5. Prohibition of CSOs during dry weather;
6. Control of solid and floatable materials in CSOs;
7. Pollution prevention programs that focus on containment reduction activities;
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and
9. Monitoring and reporting to effectively characterize CSO impacts and the efficacy of CSO controls.

Currently, TMDLs (Total Maximum Daily Loads) for various pollutants are being developed by USEPA and VA Department of Environmental Quality for the receiving waters. Bacteria TMDL for Hunting Creek approved by VA Department of Environmental Quality and EPA provides load allocations for the Combined Sewer System that requires drastic reductions in the permitted overflows. Depending on the conditions of the future permits, the City may be required to revise its LTCP, and implement expensive controls which may include full or partial separation, detention, or end of pipe technologies. Implementation of an "Area Reduction Plan" study identifies areas within the combined system shed that can be potentially separated as part of new development or re-developments can also become part of permit requirements. The City's current permit was re-issued in January 2007 and expires in January 2012. An application for permit re-issuance will be submitted to the Virginia Department of Environmental Quality in FY 2012, and depending of the conditions of the new permits, it is possible that substantially more CIP funds may be required for FY 2013 and beyond.

Operating Impact: This project will have no impact on the operating budget.

Mitigation of CSOs	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	1,277,690	304,000	319,000	335,000	335,000	350,000
Less Revenues	0	0	0	0	0	0
Net City Share	1,277,690	304,000	319,000	335,000	335,000	350,000

Mitigation of CSOs	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	350,000	350,000	350,000	350,000	350,000	3,393,000
Less Revenues	0	0	0	0	0	0
Net City Share	350,000	350,000	350,000	350,000	350,000	3,393,000

Sewers

Reconstructions & Extensions of Sanitary Sewers

Subsection: Sanitary Sewers
Managing Department: T & ES
Project Category: 1

Estimated Useful Life of Improvement: 40 years
Priority: Essential
Strategic Plan Goal: 2

Project Summary: This project provides for the construction of new sewer mains and the replacement and rehabilitation of old lines as needed. The project also includes funds for the City's share of the cost of sewer extensions required for development. This is an essential infrastructure project. A total of \$9.74 million is planned over ten years. This project also funds repairs to City streets disturbed by sewer line construction.

Changes from Prior Year: Based on funding limitations and project prioritization, funding was reduced in FY 2012 (\$1.0 million to \$0.864 million), FY 2013 (\$1.0 million to \$0.9 million), and FY 2014 (\$1.0 million to \$0.98 million). Funding for FY 2015 – 2020 remains unchanged. \$1.0 million has been added to FY 2021 to address future reconstruction and extension projects.

Project History: In FY 1987, the City initiated an on-going program to reline existing leaking sewers in the City. In the FY 2009 Approved CIP, a total of \$500,000 was added to complete delayed sanitary sewer projects. Projects completed include West Uhler Avenue between Commonwealth Avenue and Sanford Street; Hickory Street; Sycamore Street, between Mt. Ida Street and Kennedy Street; Hoof's Run from E. Chapman to E. Maple Streets; elimination of a sewer siphon at Taylor Run @ Janney's Lane; and a sewer located in the alley between East Monroe Avenue and East Nelson Avenue. The City's share of the Four Mile Run Force Main is also paid out of this project.

Operating Impact: This project will have no impact on the operating budget.

Recon. and Extensions of San Sewers	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
		Expenditures	2,430,050	863,868	900,000	980,000
Less Revenues	0	0	0	0	0	0
Net City Share	2,430,050	863,868	900,000	980,000	1,000,000	1,000,000

Recon. and Extensions of San Sewers	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
	Expenditures	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Less Revenues	0	0	0	0	0	0
Net City Share	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	9,743,868

Sewers

Sewer Separation Projects

Subsection: Sanitary Sewers
Managing Department: T & ES
Project Category: 1

Estimated Useful Life of Improvement: 40 years
Priority: Essential
Strategic Plan Goal: 2

Project Summary: This project provides for small projects to separate areas of combined sewers. Areas of opportunity exist for separation of combined sewer systems where construction of additional sewers in a few blocks due to new development may result in completing the separation of a larger area. Opportunities may also arise in conjunction with redevelopment in the combined sewer area.

Changes from Prior Year: A total of \$6.0 million has been planned (FY 2012- FY 2021) for this project. Total sewer separation costs would be significantly more than this amount, which is why an incremental, opportunistic program is recommended.

Project History: \$600,000 has been added to FY 2021 to address future sewer separation projects.

Operating Impact: This project will have no impact on the operating budget.

Sewer Separation Projects	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	0	600,000	600,000	600,000	600,000	600,000
Less Revenues	0	0	0	0	0	0
Net City Share	0	600,000	600,000	600,000	600,000	600,000

Sewer Separation Projects	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	600,000	600,000	600,000	600,000	600,000	6,000,000
Less Revenues	0	0	0	0	0	0
Net City Share	600,000	600,000	600,000	600,000	600,000	6,000,000

Sewers

Four Mile Run Sanitary Sewer Repair

Subsection: Sanitary Sewers
Managing Department: T & ES
Project Category: 2

Estimated Useful Life of Improvement: 40 years
Priority: Highly Desirable
Strategic Plan Goal: 2

Project Summary: This project will fund the rehabilitation of the Four Mile Run sanitary sewer. During field inspections of the Four Mile Run Inflow and Infiltration project in FY 2001, surcharged manholes with significant solids were encountered along the 36-inch diameter truck sewer upstream of the Four Mile Run pump station. Efforts to clean the trunk sewer were unsuccessful due to the heavy solids volume and compaction in the sewer. In FY 2008, a specialty contractor successfully removed the solids and an inspection and condition assessment was completed. Based on the condition assessment of the trunk sewer following the removal of the solids, rehabilitation is necessary. \$1.8 million is budgeted for this project with \$300,000 for design in FY 2012 and \$1.5 million for construction in FY 2013. ASA will be upgrading the existing 4-Mile Run Pump station and the City is coordinating the trunk sewer rehabilitation with ASA's improvements.

Changes from Prior Year: No changes from prior years.

Operating Impact: This project will have no impact on the operating budget

Four Mile Run Sanitary Sewer Repair	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	0	300,000	1,500,000	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	0	300,000	1,500,000	0	0	0

Four Mile Run Sanitary Sewer Repair	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	0	0	0	0	0	1,800,000
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	1,800,000

Sewers

Holmes Run Sewershed Inflow and Infiltration and Rehabilitation

Subsection: Sanitary Sewers
Managing Department: T & ES
Project Category: 2

Estimated Useful Life of Improvement: 40 years
Priority: Highly Desirable
Strategic Plan Goal: 2

Project Summary: This project provides for the evaluation and remediation of infiltration/inflow and sewer rehabilitation conditions for the sanitary sewer system in the Holmes Run sewershed. During wet weather, infiltration and inflow into the sanitary sewers have created overload conditions causing basement backups. The field work and monitoring will be performed by dividing the 4,600 acre sewer shed into sections and proceeding through each section sequentially. Leaking sewers and connections (which allow excessive infiltration/inflow to enter sewers), and deteriorated sewers requiring remediation, will be identified via street by street closed circuit television inspection of sewers. The results of this field work will be evaluated to develop remediation projects that are expected to include the relining of sewers and manhole repairs. Construction costs will be more accurately determined based on the results of field evaluations, although current costs are estimated at \$32.5 million, an increase of \$7.5 million dollars over the previous estimate of \$25.03 million in the Approved FY 2011- 2020 CIP. Additional funding has been requested at this time, as construction numbers are not solid, but will be requested in future CIP requests should the estimate remain at \$32.5 million. The sewers in the Holmes Run sewershed, although originally constructed more recently than the newly rehabilitated Commonwealth and Four Mile Run sewer sheds, will most likely require a higher percentage of remediation than that of the older sewer sheds.

Changes from Prior Year: \$600,000 was moved from FY 2015 to FY 2012 based on overall funding plan limitations. Total FY 2012 – 2021 project funding remains unchanged at \$17.12 million.

Project History: In June 2007, \$631,440 was allocated to begin an assessment of the Holmes Run Infiltration/Inflow. During FY 2010, initial flow metering at 23 locations was completed and closed circuit television field inspections began with rehabilitation design following. Design of remediation measures started in summer 2010 for two sub-basins and construction is anticipated to begin in Summer 2011. In the Approved FY 2011 – 2020 CIP, \$7.91 million of the \$25.03 million project was designated for construction costs.

Operating Impact: This project will have no impact on the operating budget.

Holmes Run I & I	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	
Expenditures	0	4,960,000	4,360,000	4,200,000	3,600,000	0	
Less Revenues	0	0	0	0	0	0	
Net City Share	0	4,960,000	4,360,000	4,200,000	3,600,000	0	
Holmes Run I & I		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures		0	0	0	0	0	17,120,000
Less Revenues		0	0	0	0	0	0
Net City Share		0	0	0	0	0	17,120,000

Sewers

Sanitary Sewer Master Plan

Subsection: Sanitary Sewers
Managing Department: T & ES
Project Category: 3

Estimated Useful Life of Improvement: N/A
Priority: Essential
Strategic Plan Goal: 3

Project Summary: The City of Alexandria is currently developing a comprehensive Sanitary Sewer Master Plan. The Alexandria Sanitation Authority (Authority) is currently in the design process for the possible expansion of its wastewater treatment facility – current capacity 54 Million Gallons per Day (MGD) of Average Daily Flow (ADF) to meet Virginia Nitrogen and Phosphorus requirements. As part of this process, at the City’s request, the Authority investigated expanding the facility by up to 4 MGD of ADF, which should be sufficient to meet long-range City growth demands, and also provide additional capacity for wet weather flows. Current development projections indicate that up to 4 MGD of ADF will be necessary by 2040. As a first step to implement this project, the consultant currently enlisted to design the expansion investigated the feasibility of this project. The City is reimbursing ASA for the cost of this work. The feasibility study was completed in the fall of 2010. The cost to expand the ASA treatment facility by 4 MGD is estimated to cost approximately \$172.0 million. Additionally, the cost to treat wet weather peaks to reduce Sanitary Sewer Overflows (SSOs) and protect against basement backups up to the 25 year storm is estimated to be approximately \$52.0 million. No funding is programmed in the FY 2012 – 2021 CIP for these projects.

Fairfax County may be able to sell the City up to 4 MGD of ADF sewer capacity it now has available at the ASA facility. The budget cost for this purchase could be the cost to Fairfax County for the construction of 4 MGD capacity at the ASA plant, and is estimated to be approximately \$56.0 million. Funding is not programmed in the FY 2012 – 2021 CIP for this additional capacity. Waste water treatment expenses have been and should be customary expenses of ASA and not the City. If the City chooses to pursue this option in the future, financing will have to be coordinated with ASA, as the expansion ordinarily would be financed by ASA issuing the revenue bonds backed by sanitary sewer system user charges. Other financing and contractual arrangements with the ASA and Fairfax County are currently being explored.

Changes from Prior Year: This is a new project not previously in the CIP. \$10,000 is included as a place holder in FY 2021 to allow for inclusion in the FY 2012 – 2021 CIP.

Operating Impact: Potential impact on the operating budget is unknown at this time.

Sanitary Sewer Master Plan	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	0	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	0

Sanitary Sewer Master Plan	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	0	0	0	0	10,000	10,000
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	10,000	10,000

Sewers

STORMWATER MANAGEMENT FUND

Overview: The Stormwater Management Fund will include funding from three separate sources and will encompass both capital and operating costs associated with the storm sewer system. In keeping with City Council guidance restricting the use of a Stormwater Utility to supplant existing operating and capital levels of effort, the Fund will collect an annual transfer in of \$0.95 million from the City's General Fund for operating maintenance and \$1.0 million from the Capital Fund for capital maintenance. These funding sources maintain the previous level of effort in these areas (prior to the creation of the Stormwater Management Fund as a part of the FY 2011 budget process) and establish a baseline moving into the future. Additionally, this Fund will gather revenues from 0.5 cents dedicated from the real estate tax rate, estimated at \$1.62 million in FY 2012 and growing each year as projected property assessments increase. The revenues from the dedicated tax would be used primarily for capital projects. The total ten-year spending for this Fund is projected to be \$40.5 million (\$28.5 million capital and \$12.0 million operating).

New Revenue Generation: The FY 2012 - 2021 CIP includes an average of \$2.85 million per year for stormwater improvement projects necessary to reduce flooding and the environmental impacts of stormwater pollutants entering streams and rivers. An average of \$2.0 million of annual funding over the ten year period is planned to come from a new dedicated portion (0.5 cents) of the real estate tax rate. This will provide a reliable on-going source of funding for maintaining and improving the City's stormwater infrastructure.

Proposed Uses: Projects scheduled to be initiated in the first few years of stormwater utility fee revenue would address street, property, and/or basement flooding problems. A description of planned projects can be found on the following pages of the Sewers section. Details of individual projects specifically attached to the new revenue source are currently included under the Miscellaneous Storm Sewers CIP Project.

Sewers

STORM SEWER FUND SOURCES AND USES

Category/Project	Unallocated	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY12-FY21
Category 1												
Miscellaneous Storm Sewer Repairs	\$2,197,715	\$1,266,398	\$1,565,741	\$1,653,435	\$754,733	\$312,312	\$1,226,552	\$1,097,860	\$226,664	\$363,418	\$508,608	\$8,975,721
Storm & Combined Assessment	0	450,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	8,550,000
Subtotal Category 1	2,197,715	1,716,398	2,465,741	2,553,435	1,654,733	1,212,312	2,126,552	1,997,860	1,126,664	1,263,418	1,408,608	17,525,721
Category 2												
Taylor's Run at Janney's Lane	551,250	0	0	0	0	0	0	0	0	0	0	0
NPDES / MS4 Permit	175,000	0	0	0	0	0	0	0	0	0	0	0
Ft Ward Stormwater	0	85,000	0	0	0	0	0	0	0	0	0	85,000
Storm Sewer Capacity Analysis	1,088,500	600,000	0	0	0	0	0	0	0	0	0	600,000
Key Drive Flood Mitigation	0	0	0	0	1,000,000	800,000	0	0	0	0	0	1,800,000
Braddock Rd. & West St. Storm Sewer	0	0	0	0	0	750,000	750,000	1,000,000	2,000,000	2,000,000	2,000,000	8,500,000
Subtotal Category 2	\$1,814,750	\$685,000	\$0	\$0	\$1,000,000	\$1,550,000	\$750,000	\$1,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$10,985,000
Subtotal Capital Expenditures	\$4,012,465	\$2,401,398	\$2,465,741	\$2,553,435	\$2,654,733	\$2,762,312	\$2,876,552	\$2,997,860	\$3,126,664	\$3,263,418	\$3,408,608	\$28,510,721
Operating Costs												
(1) Current Operating Support		\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$9,500,000
(2) Expanded Operating Support		220,061	225,563	231,202	236,982	242,906	248,979	255,203	261,583	268,123	274,826	2,465,427
Total Operating Expenditures		\$1,170,061	\$1,175,563	\$1,181,202	\$1,186,982	\$1,192,906	\$1,198,979	\$1,205,203	\$1,211,583	\$1,218,123	\$1,224,826	\$11,965,427
Total Stormwater Utility Expenditures		\$3,571,459	\$3,641,304	\$3,734,637	\$3,841,715	\$3,955,218	\$4,075,531	\$4,203,063	\$4,338,247	\$4,481,541	\$4,633,434	\$40,476,149
Stormwater Management Fund Revenue Sources												
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY12-FY21
Transfer from General Fund (Current Operating)		\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	\$9,500,000
Transfer from Capital Fund (Base Capital)		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	10,000,000
Stormwater Management Tax Revenues		1,621,459	1,691,304	1,784,637	1,891,715	2,005,218	2,125,531	2,253,063	2,388,247	2,531,541	2,683,434	20,976,149
Fund Balance Carryovers		0	0	0	0	0	0	0	0	0	0	0
Total Funding Sources		\$3,571,459	\$3,641,304	\$3,734,637	\$3,841,715	\$3,955,218	\$4,075,531	\$4,203,063	\$4,338,247	\$4,481,541	\$4,633,434	\$40,476,149
Year-End Fund Balance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

(1) Current Operating Costs are defined as the Storm Sewer Cleaning and Inspection Activity in the FY 2012 Proposed T&ES Operating Budget and define that as the baseline level of funding moving in to the future. These do not reflect the total current operating costs of maintaining the City's Storm Sewer System. This definition could be expanded to include more Storm Sewer System operating costs, but the corresponding General Fund budget authority would need to be identified and transferred to this Stormwater Utility Module if those costs are to be represented here.

(2) Expanded Operating Support includes funding for the BNR filtration costs and a new engineer and inspector positions

Sewers

NPDES / Municipal Separate Storm Sewer System (MS4) Permit Program

Subsection: Storm Sewers

Estimated Useful Life of Improvement: 5 years

Managing Department: T & ES

Priority: Essential

Project Category: 1

Strategic Plan Goal: 2

Project Summary: This project provides for the data collection, reporting activities, public education, outreach, involvement and citizen participation associated with implementation of any program changes of the programs required by the National Pollution Discharge Elimination System (NPDES) Permit. A total of \$175,000 in prior year unallocated monies remains for this purpose.

Changes from Prior Year: No changes from prior year.

Project History: The Federal Water Quality Act of 1987 required that small municipalities obtain storm water discharge permits for their municipal separate storm sewer system (MS4) under Phase II of the National Storm Water Program. The City submitted an application for a MS4 permit to the Virginia Department of Environmental Quality (VDEQ) and received its first permit effective July 8, 2003. The permit required that the City develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), protect the water quality and satisfy the appropriate water quality requirements of the Clean Water Act. The permit required the City to develop and implement the Stormwater Management program. The City was issued the new MS4 permit effective July 9, 2008 and subsequently has successfully negotiated a Program Plan with the Virginia DCR. The permit has extensive regulatory requirements that require more intensive monitoring and sampling. The MS4 Permit has numerous requirements including an illicit discharge detection and elimination program and associated concept designs; preliminary concept designs of structural and non-structural floatable controls; and best management practices. It includes requirements related to TMDL (Total Maximum Daily Loads) requirements related to PCB s for Potomac River and Bacteria for the Four Mile Run watershed.

The City is now facing decisions on complying with an additional TMDL for Bacteria in Hunting Creek. The Virginia Watershed Implementation Plan, which implements the standards set by the Chesapeake Bay Nutrient and Sediment TMDL (approved in January of 2011 setting measurable effluent limits and outlines penalties for non-compliance), delineates mechanisms to achieve compliance. Implementation will largely be through actions/programs incorporated into the MS4 permit. These new effluent limits are exceedingly stringent and will require an effort termed E3 (“everything, everywhere, by everybody”) to achieve compliance. While the City’s next permit is reappraised in July of 2013, the City must have practices in place to meet 60% of the load reductions required by 2017. Additionally TMDL’s are currently being developed for various other pollutants by USEPA and VA Department of Environmental Quality for the receiving waters. Four Mile Run has recently been declared impaired for Chlordane and a TMDL will be forthcoming. The Chesapeake Bay TMDL requires more explicit reduction allocations resulting in new requirements ranging from additional monitoring and evaluation to improvements in infrastructure that may require significant capital expenditures. Allocated funding in this project is not the total cost of compliance, which staff anticipates will be much higher depending on the permit requirements of future MS4 permits.

Operating Impact: Operating impact is unknown until future permit requirements of MS4 programs are determined.

NPDES / NS4 Permit	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	175,000	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	175,000	0	0	0	0	0

NPDES / NS4 Permit	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	0	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	0

Sewers

Taylor's Run at Janney's Lane

Subsection: Storm Sewers
Managing Department: T & ES
Project Category: 2

Estimated Useful Life of Improvement: 25 years
Priority: Highly Desirable
Strategic Plan Goal: 2

Project Summary: This project provides for the rehabilitation of a deteriorating culvert at Taylor Run and Janney's Lane and other improvements to the existing storm sewer in the area. A total of \$551,250 in prior year unallocated funds will fund the construction.

Changes from Prior Year: No changes from prior year.

Operating Impact: This project will have no impact on the operating budget.

Taylor's Run at Janney's Lane	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	551,250	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	551,250	0	0	0	0	0

Taylor's Run at Janney's Lane	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	0	0	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	0

Sewers

Ft. Ward Stormwater

Subsection: Storm Sewers
Managing Department: T & ES
Project Category: 3

Estimated Useful Life of Improvement: 25 years
Priority: Highly Desirable
Strategic Plan Goal: 2

Project Summary: Fort Ward Park is the best preserved of the system of Union forts and batteries built to protect Washington, DC during the American Civil War (1861-1865). This site receives drainage from the adjacent Marlboro Estates subdivision built in the late 1970's, Episcopal High School property and from the Braddock Road area. Over time, due to changes in grading and overland drainage patterns, erosion has occurred in the park and in the adjacent Oakland Baptist Church cemetery. Additionally, the stream in the park is showing signs of erosion and degradation. Property owners at the bottom of the park are experiencing flooding. The proposed project will include overland flow improvements, erosion protection, stream restoration and flood prevention.

In FY 2012, \$85,000 is budgeted to develop a stormwater and drainage master plan, along with associated drainage improvements. The first phase of the master plan will be developed in FY 2012, and includes the area between the Park Loop Road and Marlboro Estates.

In FY 2013, it is estimated that \$500,000 will be required to implement drainage and stream improvements associated with the first phase of the stormwater and drainage master plan. These funds, once cost estimates have been fully developed, will be moved from the Miscellaneous Extension and Replacement of Storm Sewers to this project in FY 2013.

Changes from Prior Year: This is a new project. Funding was split from the Miscellaneous Extension and Replacement of Storm Sewers project in FY 2012 in order to create a stand-alone project.

Project History: Prior year allocated funds (approximately \$30,000) from the Miscellaneous Extension and Replacement of Storm Sewers are being used to construct interim drainage improvements to protect the Oakland Baptist Church Cemetery from further soil erosion due to overland flow and erosion.

Operating Impact: This project will have no impact on the operating budget.

Ft. Ward Stormwater	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	0	85,000	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	0	85,000	0	0	0	0

Ft. Ward Stormwater	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	0	0	0	0	0	85,000
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	85,000

Sewers

Miscellaneous Extension and Replacement of Storm Sewers

Subsection: Storm Sewers

Managing Department: T & ES

Project Category: 1

Estimated Useful Life of Improvement: 25 years

Priority: Essential

Strategic Plan Goal: 2

Project Summary: This project provides funding for essential infrastructure maintenance on the City's storm sewer system. Total funding of \$9.07 million in Stormwater Management dedicated tax revenue is planned over ten years.

These projects are identified as reconstruction projects due to deterioration or needed additional capacity to reduce flooding. Including a current unallocated balance of \$2.2 million, proposed FY 2012 funding of \$1.3 million, and proposed FY 2013 funding of \$1.6 million, a total of \$5.1 million will be available for these projects from FY 2011 – FY 2013. Staff will be accelerating project design and engineering efforts in FY 2011 and FY 2012, with major construction projects scheduled for FY 2013. **This timeframe requires the stormwater management fund to “bank” FY 2011 and FY 2012 dedicated stormwater tax revenues to pay for FY 2013 construction projects.** A summary of the individual projects prioritized under this project category is provided in the table below.

Project	Description	FY 2011	FY 2012	FY 2013
Monroe / Nelson Alley Improvements	Alley re-grading and storm sewer improvements to alleviate flooding on adjacent properties in the vicinity of Alexandria and Wayne Streets.	\$85,000	\$0	\$0
Bishop Ln. Drainage Improvements	Installation of storm sewer improvements to alleviate ponding and drainage onto adjacent properties from the public right-of-way.	\$100,000	\$0	\$0
Bruce St. Repetitive Loss Analysis	Conduct a study of the causes of flooding in the Bruce Street area and identify of possible mitigation measures.	\$100,000	\$0	\$0
Hooff's Run Park Drainage Improvements	Improvements to drainage in the park to eliminate flooding onto adjacent properties.	\$200,000	\$0	\$0
Fort Ward Park	This project involves two phases. Phase I will develop a stormwater management master plan for the area of the park between the park loop road and Marlboro Estates (\$85,000 FY 2012), and construct drainage and stormwater improvements associated with this master plan (\$500,000 FY 2013). Funding will shift to the stand-alone Ft. Ward Stormwater project once cost estimates have been fully developed.	\$0	\$0	\$500,000
Templeton Place Drainage	Storm sewer evaluation and improvements including restoration/stabilization of the existing creek and storm sewer inlet and outfall improvements to alleviate nuisance flooding and erosion in the vicinity of Templeton Place.	\$0	\$100,000	\$0
W. Alexandria Ave. at Timber Branch	Drainage improvements along West Alexandria Ave. An existing culvert and existing inlet currently experience flooding in large storm events. The capacity of both will be analyzed and necessary improvements constructed.	\$0	\$60,000	\$0
N. Henry St. / Montgomery St.	Drainage improvements and sanitary sewer separation along N. Henry and Montgomery Streets.	\$0	\$90,000	\$0
N. Rosser St. / Calhoun Ave. / Colfax Ave. / Dawes Ave. Drainage System	Storm sewer evaluation and possible improvements including extension of existing storm sewers in roadside ditches to alleviate nuisance flooding and ponding water. Design is scheduled for FY 2012, construction in FY 2013.	\$0	\$175,000	\$800,000
N. Frazier Ave. / N. Frost Ave. / Lawrence Ave. Drainage System	Storm improvements along North Frazier, North Frost, and Lawrence Avenue. The existing drainage ditch has limited capacity and frequent ponding occurs. Design is scheduled for FY 2012, construction in FY 2013.	\$0	\$175,000	\$800,000

Sewers

Project	Description	FY 2011	FY 2012	FY 2013
Pegram / Paxton	This area was identified during the flood of June 2006 as a problem area. This is the next shed to be investigated by the Storm Sewer Capacity Analysis Project. Design is scheduled for FY 2012, construction in FY 2013.	\$0	\$100,000	\$500,000
DASH Facility Stormwater Outfall	This project includes storm sewer design and construction of a new storm sewer outfall through CSX railroad property which will provide an adequate outfall to the DASH facility to eliminate frequent flooding. Design and permitting are scheduled for FY 2012, construction in FY 2013.	\$0	\$200,000	\$900,000
Timber Branch Stream Erosion	Stream bank stabilization to protect the street and sewer line near Oakland Terrace from stream erosion damage.	\$0	\$0	\$50,000
Totals		\$515,000	\$900,000	\$3,550,000

Changes from Prior Year: Miscellaneous Storm Sewers now plans the inclusion of several improvement projects associated with the dedicated Stormwater Management tax in FY 2012 and FY 2013. Funding for Ft. Ward Stormwater improvements was shifted to a stand-alone project with funding in FY 2012 only. Additional funding will be shifted to this project in FY 2013 once cost estimates have been fully developed.

Project History: Recently completed projects include East Maple Street Storm Sewer reconstruction, replacement of the Edsall Road storm sewer near Cameron Station; and George Mason School and Park drainage system. Projects that will be under construction in FY 2011 include Auburn Village Phase I; Bishop Lane; DASH Phase I; Hooff's Run Park; and Monroe / Nelson Alley.

Operating Impact: This project will have no impact on the operating budget.

Miscellaneous Stormwater	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	2,197,715	1,266,398	1,565,741	1,653,435	754,733	312,312
Less Revenues	0	0	0	0	0	0
Net City Share	2,197,715	1,266,398	1,565,741	1,653,435	754,733	312,312

Miscellaneous Stormwater	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	1,226,552	1,097,860	226,664	363,418	508,608	8,975,721
Less Revenues	0	0	0	0	0	0
Net City Share	1,226,552	1,097,860	226,664	363,418	508,608	8,975,721

Sewers

Storm/Combined Sewer Assessment and Remediation

Subsection: Storm Sewers

Managing Department: T & ES

Project Category: 1

Estimated Useful Life of Improvement: 40 years

Priority: Essential

Strategic Plan Goal: 2

Project Summary: This project provides for the City-wide condition assessment of the existing 14 miles of combined sewers and 185 miles of storm sewers. The City will perform condition assessments including cleaning and televising of the lines; assessing information to determine condition of lines; and determining if rehabilitation is needed. Field work will be performed by dividing the City into sewer sheds and proceeding through each section sequentially. Structurally deficient sewers will be identified and the results of the field work will be evaluated to develop remediation projects, which are expected to include the relining of sewers and manhole repairs. Work will be coordinated with the Storm Sewer Capacity Analysis project. Evaluation and design are approximately 30% of the annual costs, with construction comprises the remaining 70% of annual funding.

Changes from Prior Year: A total of \$8.55 million is planned over ten years, compared to \$7.21 million in the Approved FY 2011 – 2020 CIP. This includes \$450,000 for FY 2012, and then \$900,000/annually through FY 2021.

Operating Impact: This project will have no impact on the operating budget.

Storm and Combined Syst. Assess. & Remed.	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	0	450,000	900,000	900,000	900,000	900,000
Less Revenues	0	0	0	0	0	0
Net City Share	0	450,000	900,000	900,000	900,000	900,000

Storm and Combined Syst. Assess. & Remed.	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	900,000	900,000	900,000	900,000	900,000	8,550,000
Less Revenues	0	0	0	0	0	0
Net City Share	900,000	900,000	900,000	900,000	900,000	8,550,000

Sewers

Storm Sewer Capacity Analysis

Subsection: Storm Sewers
Managing Department: T & ES
Project Category: 2

Estimated Useful Life of Improvement: N/A
Priority: Highly Desirable
Strategic Plan Goal: 2

Project Summary: This project provides for a multi-year City-wide storm sewer analysis to determine the stormwater system's capacity. Field verification of invert elevations and manhole locations and metering to verify computations will be part of this project, which will be completed over a four year timeframe. The total project budget is \$3.1 million, of which \$600,000 will be funded in FY 2012. Combining the FY 2012 funding with the unallocated project balance of \$1,088,200 will provide all required funding needed to complete the analysis in FY 2013. Work will be coordinated with the Storm / Combined Sewer Assessment and Renovation project.

Changes from Prior Year: \$600,000 was added to FY 2012 to provide funding for project completion in FY 2013.

Project History: This study is budgeted as a response to several large magnitude storms in 2003 and 2006 that caused flooding in low-lying areas of the City.

Operating Impact: This project will have no impact on the operating budget.

Storm Sewer Capacity Analysis	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	1,088,500	600,000	0	0	0	0
Less Revenues	0	0	0	0	0	0
Net City Share	1,088,500	600,000	0	0	0	0

Storm Sewer Capacity Analysis	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	0	0	0	0	0	600,000
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	600,000

Sewers

Key Drive Flood Mitigation

Subsection: Storm Sewers

Managing Department: T & ES

Project Category: 2

Estimated Useful Life of Improvement: 25 years

Priority: Highly Desirable

Strategic Plan Goal: 2

Project Summary: This project provides for the design and construction of a storm sewer bypass to alleviate drainage problems on Key Drive and Francis Hammond Parkway and to prevent flooding in residential areas with lower elevations.

Changes from Prior Year: No changes from prior years.

Operating Impact: This project will have no impact on the operating budget.

Project History: \$1.0 million has been allocated to date for this project, and design is currently underway.

Key Drive Flood Mitigation	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	0	0	0	0	1,000,000	800,000
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	1,000,000	800,000

Key Drive Flood Mitigation	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	0	0	0	0	0	1,800,000
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	1,800,000

Sewers

Braddock Rd. and West St. Storm Sewer Drainage Improvements

Subsection: Storm Sewers

Managing Department: T & ES

Project Category: 2

Estimated Useful Life of Improvement: 40 years

Priority: Highly Desirable

Strategic Plan Goal: 2

Project Summary: This project addresses flooding at the intersection of Braddock Road and West Street, adjacent to the Braddock Road Metro Station. The adjacent properties and streets drain to the intersection, which is a low point (sump condition). Stormwater is collected at the low points and conveyed beneath the rail corridor to the Hooff's Run storm culvert adjacent to Commonwealth Avenue. The conveyance system is inadequate to convey the stormwater in a timely fashion, resulting in flooding of the intersection. The City hired a consultant to investigate various alternatives to alleviate the problem. A cost benefit analysis of the project will be prepared to determine the most feasible solution to this flooding problem. A total of \$8.5 million has been programmed in the FY 2012 – 2021 CIP.

Changes from Prior Year: \$2.0 has been added to FY 2021 to address future capital replacement needs.

Project History: Based on a drainage study completed in FY 2004, the storm sewers at the intersection of Braddock Road and West Street were found to be inadequate to relieve the frequent flooding of this critical rail crossing. A feasibility study was completed in fall 2008 with engineering alternatives ranging from \$18.0 million to \$64.0 million. Several alternatives will be further evaluated during the preliminary design to address constructability issues and further refine construction costs, as well as to undertake a thorough cost-benefit analysis. The total cost reflects the feasibility study's cost estimates to collect and convey the storm water to the Potomac River by means of a large (approximately five foot diameter) storm sewer pipe down Wythe Street through Oronoco Park.

Operating Impact: This project will have no impact on the operating budget.

Braddock and West	Unallocated Balance	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Expenditures	0	0	0	0	0	750,000
Less Revenues	0	0	0	0	0	0
Net City Share	0	0	0	0	0	750,000

Braddock and West	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY2012-FY2021
Expenditures	750,000	1,000,000	2,000,000	2,000,000	2,000,000	8,500,000
Less Revenues	0	0	0	0	0	0
Net City Share	750,000	1,000,000	2,000,000	2,000,000	2,000,000	8,500,000