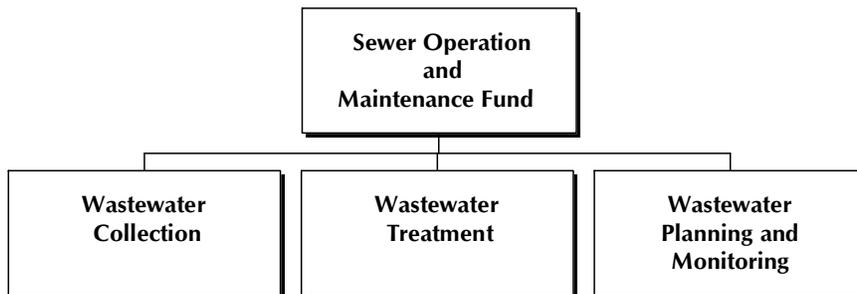


Fund 401

Sewer Operation and Maintenance



Mission

To safely collect and treat wastewater in compliance with all regulatory requirements using state-of-the-art technology in the most cost-effective manner in order to improve the environment and enhance the quality of life in Fairfax County.

Focus

The Wastewater Management Program includes wastewater collection and conveyance, wastewater treatment, and planning and monitoring program areas. The primary functions are to strategically plan, efficiently operate and effectively maintain the wastewater system in the best interest of the County and its customers. Funding for sewer operations and maintenance are financed by a transfer from Fund 400, Sewer Revenue which is used to credit all system revenues collected, including availability fees and sewer service charges associated with the program.

This program operates and maintains nearly 3,378 miles of sewer, 65 pump stations and 54 flow-metering stations. Treatment of wastewater generated is provided primarily through five regional wastewater collection and treatment plants. The regional treatment approach takes advantage of economies of scale in wastewater treatment and ensures the economical and efficient operation and management of the program.



Photo of the Noman M. Cole Jr. Pollution Control Plant

One of the five regional plants is the County's owned and operated Noman M. Cole, Jr. Pollution Control Plant (NCPCP), which is currently permitted to treat 67 million gallons per day (mgd) of flow. Other regional facilities include the District of Columbia Water and Sewer Authority's Blue Plains Treatment Plant with 31 mgd capacity; Alexandria Sanitation Authority's Treatment Plant with 32.4 mgd capacity; Upper Occoquan Sewage Authority's Treatment Plant with 24.6 mgd capacity; and Arlington County's Treatment Plant with 3 mgd capacity. Fairfax County utilizes all of these facilities to accommodate a total capacity of 158 mgd.

The agency has identified a number of trends that influence the operation and maintenance of the sanitary sewer system. The major trends over the next two to five years include the following:

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Chesapeake Bay Water Quality Program Requirements - The new Chesapeake Bay water quality program requires reductions in the amount of nutrient pollutants discharged from wastewater treatment facilities. In December 2004, the state notified the County that the renewal of County's National Pollutant Discharge Elimination System (NPDES) permit will include a requirement that nutrient removal be performed at the "Limits of Technology." Current technology allows for discharge limits of less than 3.0 milligrams per liter for nitrogen and 0.1 milligrams per liter for phosphorus. The County has a nitrogen discharge requirement of 7.0 milligrams per liter and currently has the capability to meet a nitrogen standard of 5.0 milligrams per liter. A phased approach has been under way to renovate and upgrade current plant facilities to accommodate new more stringent nutrient discharge requirements. The Sewer Service Charge rate will increase from \$4.50 to \$5.27 per 1,000 gallons of water consumption in FY 2011. This equates to an approximate increase of 17.1 percent in Sewer Service Charges. In addition, a new base charge to sewer billings was introduced in FY 2010 to recover billing costs for the Wastewater Management Program. The base charge remains the same in FY 2011 and is billed quarterly in the amount of \$5.00 per bill totaling \$20.00 per year. The combined effect of the sewer service charge increase as well as the base charge equate to an anticipated increase in the annual cost to the typical household of \$58.52. For FY 2012 and FY 2013, annual service charge increases of 17.0 percent and 14.0 percent have been proposed. Sewer service charge rates are increasing as debt and capital expenses rise in anticipation of construction of additional treatment facilities to meet more stringent nitrogen removal requirements imposed by the State as a result of the "Chesapeake 2000" agreement. In FY 2011, a Sewer Revenue Bond sale in the amount of \$150 million is planned to support capital projects including enhanced nutrient removal upgrades, replacement and rehabilitation of sewer line projects and plant upgrades at the Noman M. Cole, Jr., Pollution Control Plant and treatment by contract wastewater treatment facilities.

Capacity, Maintenance, Operation, and Management (CMOM) - The United States Environmental Protection Agency (USEPA) has been planning for several years to promulgate sanitary sewer overflow (SSO) regulations, which would require municipalities to develop and implement a CMOM program to eliminate any sewer overflows and backups from the wastewater collection systems. The proposed SSO rule and the CMOM program would significantly affect program costs.

Integration of Information Technology - The Geographic Information System (GIS), the Supervisory Control and Data Acquisition (SCADA) system and the Infrastructure Computerized Maintenance Management System (ICMMS) require integration for optimal use. Computing and information technology are an integral part of every aspect of the Wastewater Management Program operations. Today's high customer expectations and increasing reliance on consistent 24-hour services, lead to an increasing dependence on and expectation for stable and reliable integrated information technologies that infuse the business process. Presently, the GIS, the SCADA system, and the ICMMS system are partially integrated. Future customer service needs will require a full enterprise integration of the critical information technology systems to reduce total cost of ownership, increase availability of critical business data in the right format, and improve the quality and delivery of services to sewer customers.

Capital Improvements - Reinvestment in the sewer system infrastructure ensures optimum operation of all wastewater facilities. This initiative, closely related to CMOM endeavors, emphasizes capital improvements to wastewater collection and treatment facilities to meet requirements of the future sanitary sewer overflow regulations by the USEPA. The program continues to take a proactive stance toward infrastructure rehabilitation; however, CMOM regulations could greatly affect operations.

Asset Management Program - As a result of evaluating the program's financial management strategies, an Asset Management Program was developed. The first phase aligned the program's capital asset policies and procedures with the County's fixed asset policies and developed a process in which to evaluate the program's infrastructure. The second phase developed criteria to identify the program's critical assets. After the criteria were tested and accepted they were applied to all program assets. Phase three will be the condition assessment of all assets beginning with the most critical assets.

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The Wastewater Management Program is funded by revenues generated by the customers of the sanitary sewer system and recorded in Fund 400, Sewer Revenue. Sewer service charges support system operation and maintenance costs, debt service payments, and capital projects that is attributable to supporting and improving wastewater treatment services for existing customers. Availability fees support a proportional share of system costs and capital projects attributable to growth of the system required to support new customers. Existing customers are defined as those who have paid an availability fee for access to the system and receive wastewater treatment services. New customers are those who have not paid the availability fee. Upon payment of the availability fee and connection to the system, a new customer becomes an existing customer. The County allocates expenses, interest income, bond proceeds, debt service payments, capital improvement project costs and funding, and operating transfers between existing and new users of the system. In accordance with the County's "Growth Pays for Growth Policy," both existing and new customers must pay for their share of the system's total annual revenue requirements.

Budget and Staff Resources

Agency Summary				
Category	FY 2009 Actual	FY 2010 Adopted Budget Plan	FY 2010 Revised Budget Plan	FY 2011 Advertised Budget Plan
Authorized Positions/Staff Years				
Regular	321/ 320.5	321/ 320.5	321/ 320.5	321/ 320.5
Expenditures:				
Personnel Services	\$23,091,034	\$28,782,939	\$28,782,939	\$29,641,961
Operating Expenses	62,275,113	69,378,023	69,852,375	70,414,035
Capital Equipment	835,779	253,870	397,679	580,348
Subtotal	\$86,201,926	\$98,414,832	\$99,032,993	\$100,636,344
Less:				
Recovered Costs	(\$674,588)	(\$667,567)	(\$667,567)	(\$667,567)
Total Expenditures	\$85,527,338	\$97,747,265	\$98,365,426	\$99,968,777

FY 2011 Funding Adjustments

The following funding adjustments from the FY 2010 Adopted Budget Plan are necessary to support the FY 2011 program:

- ◆ **Employee Compensation** **\$0**
 It should be noted that no funding is included for pay for performance awards or market rate adjustments in FY 2011.
- ◆ **Other Post-Employment Benefits** **\$859,022**
 An increase of \$859,022 in Personnel Services reflects the cost of providing Other Post-Employment Benefits (OPEBs) to retirees, including the Retiree Health Benefits Subsidy. Historically, costs related to these benefits have been paid by the General Fund; however, beginning in FY 2011, these annual costs will be spread to other funds in order to more appropriately reflect benefit-related expenses within each fund. For more information on Other Post-Employment Benefits, please refer to Fund 603, OPEB Trust Fund, in Volume 2 of the FY 2011 Advertised Budget Plan.
- ◆ **Operating Expenses** **\$1,088,012**
 An increase of \$1,088,012 in Operating Expenses is due primarily to increased costs for interjurisdictional charges based on operations and maintenance charges from Blue Plains, Alexandria Sanitation Authority, the Upper Occoquan Sewage Authority (UOSA), and Arlington County. These costs increases are primarily due to increases in chemicals for nitrogen removal and sludge disposal to meet more stringent nutrient reduction requirements.

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- ◆ **Department of Vehicle Services** **(\$52,000)**
A decrease of \$52,000 in Operating Expenses is associated with anticipated requirements for fuel, vehicle replacement, and maintenance charges.

- ◆ **Capital Equipment** **\$580,348**
Capital Equipment funding of \$580,348 is included for requirements associated with replacement equipment that has outlived its useful life and is not cost effective to repair. The equipment includes \$118,800 for lab and computer equipment, and \$461,548 for replacement vehicles. Replacement vehicles include \$300,000 for two tank trucks to support Wastewater Collection Division Pump and Haul operations, \$52,000 for one pickup truck to inspect sewer lines required by the USEPA Capacity, Management, Operation and Maintenance (CMOM) program, \$21,916 for one pickup truck used for Miss Utility to mark sanitary sewer lines in accordance with the Virginia Underground Damage Prevention Act, and \$87,632 for four pickup trucks for maintenance projects at the Noman Cole Pollution Control Plant. All of these vehicles require replacement based on established age, mileage criteria and excessive repairs.

Changes to FY 2010 Adopted Budget Plan

The following funding adjustments reflect all approved changes in the FY 2010 Revised Budget Plan since passage of the FY 2010 Adopted Budget Plan. Included are all adjustments made as part of the FY 2009 Carryover Review, and all other approved changes through December 31, 2009:

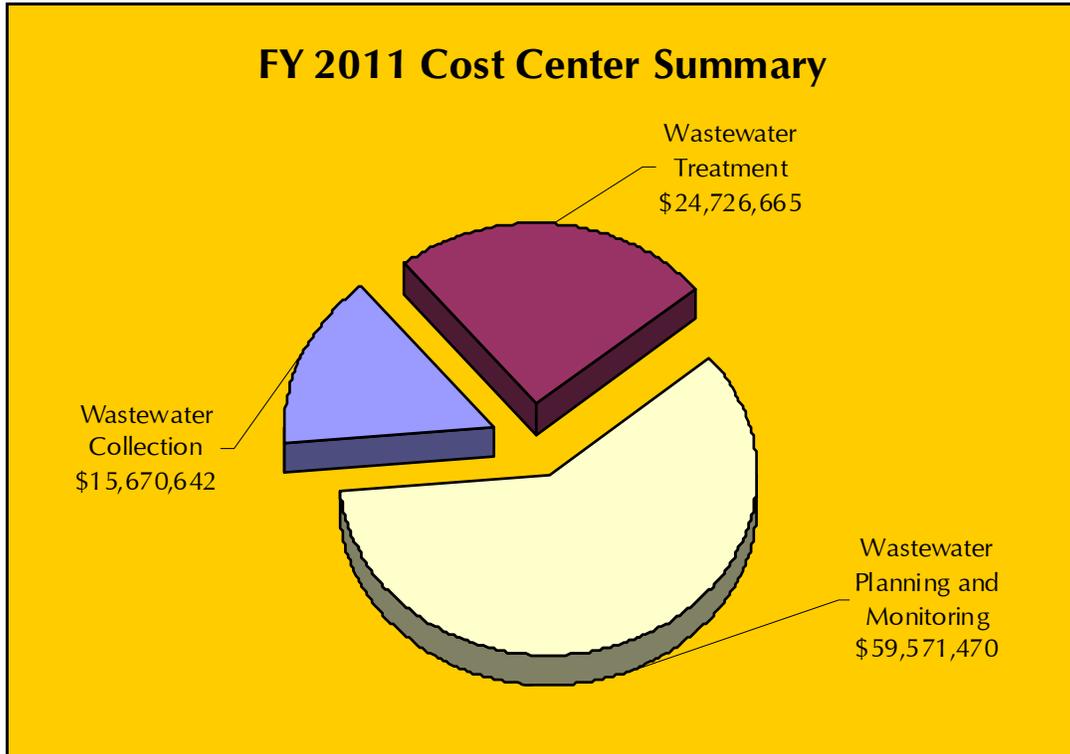
- ◆ **Carryover Adjustments** **\$618,161**
As part of the FY 2009 Carryover Review, the Board of Supervisors approved encumbered funding of \$474,352 in Operating Expenses and \$47,759 in Capital Equipment; and unencumbered carryover of \$96,050 for the delayed ordering of capital equipment.

Fund 401

Sewer Operation and Maintenance

Cost Centers

The three cost centers within Fund 401, Sewer Operation and Maintenance, are Wastewater Collection, Wastewater Treatment and Wastewater Planning and Monitoring. These cost centers work together to fulfill the mission of the sanitary sewer system and carry out the designated initiatives for the fiscal year.



Wastewater Collection

Funding Summary				
Category	FY 2009 Actual	FY 2010 Adopted Budget Plan	FY 2010 Revised Budget Plan	FY 2011 Advertised Budget Plan
Authorized Positions/Staff Years				
Regular	140/ 140	140/ 140	140/ 140	140/ 140
Total Expenditures	\$13,034,163	\$15,008,520	\$15,222,700	\$15,670,642

Fund 401

Sewer Operation and Maintenance

Goal

To ensure efficient and effective operation and maintenance of the County's wastewater treatment facilities within the laws and standards established by the Congress of the United States in Public Law 92-500 which designates regulatory powers to the USEPA and the Virginia Department of Environmental Quality.

Wastewater Planning and Monitoring

Funding Summary				
Category	FY 2009 Actual	FY 2010 Adopted Budget Plan	FY 2010 Revised Budget Plan	FY 2011 Advertised Budget Plan
Authorized Positions/Staff Years				
Regular	46/ 45.5	46/ 45.5	46/ 45.5	46/ 45.5
Total Expenditures	\$52,823,669	\$55,224,568	\$55,536,206	\$59,571,470

Position Summary		
<u>Financial Management and Planning</u>	<u>Engineering Planning and Analysis</u>	<u>Environmental Monitoring</u>
1 Deputy Director Public Works	1 Engineer V	1 Environmental Services Director
1 Director	1 Engineer IV	2 Asst. Environmental Services Directors
1 Management Analyst IV	1 Geog. Info. Spatial Analyst III	4 Environmental Health Specialists II
1 Financial Specialist IV	2 Geog. Info. System Techs.	2 Environmental Technologists III
1 Financial Specialist III	2 Engineering Technicians III	3 Environmental Technologists II
1 Programmer Analyst III	4 Engineers III	7 Environmental Technologists I
1 Financial Specialist II		1 Management Analyst II
1 Env. Services Technical Specialist		
2 Administrative Assistants IV		
1 Administrative Assistant III, PT		
1 Administrative Assistant II		
1 Management Analyst I		
2 Engineering Technicians II		
TOTAL POSITIONS		
46 Positions / 45.5 Staff Years		
PT Denotes Part-Time Position		

Goal

To manage sewer revenue collection; to monitor and report County sewage flows treated at non-County facilities; to plan for growth and development in the County's public sewer system; and to environmentally monitor County treatment facilities, other publicly and privately-owned treatment facilities in the program and nearby embayments.

Key Performance Measures

Objectives

- ◆ To comply with Title V air permit and state water quality permit requirements 100 percent of the time in order to contribute to a pure and natural state of air and water in Fairfax County.
- ◆ To maintain sewer infrastructure effectively in order to experience no more than 20 sewer back-ups, which is higher than the current 5-year rolling annual average of 12.
- ◆ To ensure efficient wastewater collection and treatment services by providing service to customers at rates that are lower than other providers.
- ◆ To provide excellent financial and asset management by ensuring a debt coverage ratio of 1.25 or greater.

Fund 401

Sewer Operation and Maintenance

Indicator	Prior Year Actuals			Current Estimate	Future Estimate
	FY 2007 Actual	FY 2008 Actual	FY 2009 Estimate/Actual	FY 2010	FY 2011
Output:					
Total average daily wastewater flow treated (million gallons)	107.2	98.8	110.0 / 100.5	112.0	112.0
Emergency repair work orders processed (1)	197	207	200 / 457	500	500
Service trouble calls received	1,236	1,249	1,500 / 1,038	1,500	1,500
Operating Reserve maintained (millions)	\$19.0	\$24.8	\$22.1 / \$26.0	\$45.0	\$30.0
Efficiency:					
Percent of treatment capacity available for growth	33%	38%	33% / 36%	33%	33%
Emergency repairs, as a percent of total work orders	0.8%	0.9%	0.8% / 0.9%	1.0%	1.0%
Sewer Service Billing Rate, \$/1,000 gallons	\$3.50	\$3.74	\$4.10 / \$4.10	\$4.50	\$5.27
Service Quality:					
Sanitary sewer overflows (SSOs) per year (FY 2008, 5-yr. avg. = 15)	14	17	20 / 14	20	20
Percent of customers responded to within 24 hours	100%	100%	100% / 100%	100%	100%
Percentage of sewage back-ups responded to within 2 hours	100%	100%	100% / 100%	100%	100%
Odor complaints per year (FY 2008, 5-yr. avg. = 22)	16	22	25 / 17	25	25
Percent of Pay as you go Capital Improvement Program funded	100%	100%	100% / 100%	100%	100%
Outcome:					
Compliance with Title V air permit and State water quality permit	100%	100%	100% / 100%	100%	100%
Blockages causing sewer back-ups per year (FY 2009, 5-yr. avg. = 12)	12	18	25 / 11	20	20
Average household sewer bill compared to other providers in the area	Lowest	Lowest	Lowest / Lower	Lower	Lower
Debt Coverage Ratio: (Revenue - Operating Cost/Debt)	1.70	1.78	1.30 / 1.25	1.30	1.25

(1) In FY 2009, the agency implemented a new emergency work order tracking system which includes unscheduled, corrective, preventive and emergency work orders in this performance measurement.

Fund 401

Sewer Operation and Maintenance

Performance Measurement Results

In FY 2009, there were 361,102 (households and businesses) connections to the sanitary sewer system, an increase of 2,727 connections over FY 2008. Approximately 80 percent of Fairfax County households are connected to the sewer system. Approximately 880,000 of the County's estimated 1,100,000 residents are served by public sewer. Odor complaints, particularly around the Noman M. Cole, Jr., Pollution Control Plant, have been reduced significantly with the addition of new odor containment and treatment facilities. These odor control facilities include tank covers for gravity thickeners and packed tower scrubbers on sludge storage tanks, nine carbon absorption odor control scrubbers at various locations on the plant, tank covers for the primary settling tanks and packed tower scrubbers to treat the odorous air from the tanks, and afterburners for the incineration exhaust.

Wastewater flows increased slightly due to increased groundwater infiltration and surface runoff due to rainwater that enters into the system. Sanitary sewer overflows decreased from FY 2008 mainly due to the increased efforts by the Wastewater Collection including staff monitoring trouble areas, replacing sewer line sags and realigning sewer lines, and utilizing temporary pumps in place to divert flow during severe storm events. Sanitary sewage blockages decreased due to increased efforts to monitor the sewer program and keep the sewer system clean of grease and debris.

The agency saw a dramatic increase in the number of emergency repair work orders in FY 2009. This was due in part to the Wastewater Treatment Plant implementing a new work order tracking system. The tracking system includes all work order repair requests for corrective, preventive and scheduled work. The agency logged over 450 work orders in FY 2009 and is anticipating this trend to continue in FY 2011 and beyond from increased construction projects at various wastewater treatment facilities.

When comparing average annual sewer service billings for the regional jurisdictions, Fairfax County has a lower average annual sewer service billing at \$362. Other regional jurisdictions range from \$284 to \$591 (as of January 1, 2010). The average sewer service billings for the other regional jurisdictions have been developed by applying each jurisdiction's sewer service rate to appropriate Single Family Residence Equivalents (SFRE) water usage determined from an analysis of Fairfax Water's historical average water usage records for SFREs. Based on the latest rate comparison, Fairfax County had one of the lower annual sewer service charges. The program is able to maintain its competitive rates while providing quality service to its customers, protecting the environment, and maintaining sufficient financial resources to fully fund the program's initiatives.

Fund 401

Sewer Operation and Maintenance

FUND STATEMENT

Fund Type G40, Enterprise Funds

Fund 401, Sewer Operation and Maintenance

	FY 2009 Actual	FY 2010 Adopted Budget Plan	FY 2010 Revised Budget Plan	FY 2011 Advertised Budget Plan
Beginning Balance	\$6,739,479	\$5,787,906	\$9,712,141	\$1,346,715
Transfer In:				
Sewer Revenue (400)	\$88,500,000	\$93,000,000	\$90,000,000	\$98,800,000
Total Transfer In	\$88,500,000	\$93,000,000	\$90,000,000	\$98,800,000
Total Available	\$95,239,479	\$98,787,906	\$99,712,141	\$100,146,715
Expenditures:				
Personnel Services	\$23,091,034	\$28,782,939	\$28,782,939	\$29,641,961
Operating Expenses	62,275,113	69,378,023	69,852,375	70,414,035
Recovered Costs	(674,588)	(667,567)	(667,567)	(667,567)
Capital Equipment	835,779	253,870	397,679	580,348
Total Expenditures	\$85,527,338	\$97,747,265	\$98,365,426	\$99,968,777
Total Disbursements	\$85,527,338	\$97,747,265	\$98,365,426	\$99,968,777
Ending Balance¹	\$9,712,141	\$1,040,641	\$1,346,715	\$177,938

¹ The Wastewater Management Program maintains fund balances at adequate levels relative to projected operation and maintenance expenses. These costs change annually; therefore, funding for sewer operations and maintenance is carried forward each fiscal year, and ending balances fluctuate, reflecting the carryover of these funds.