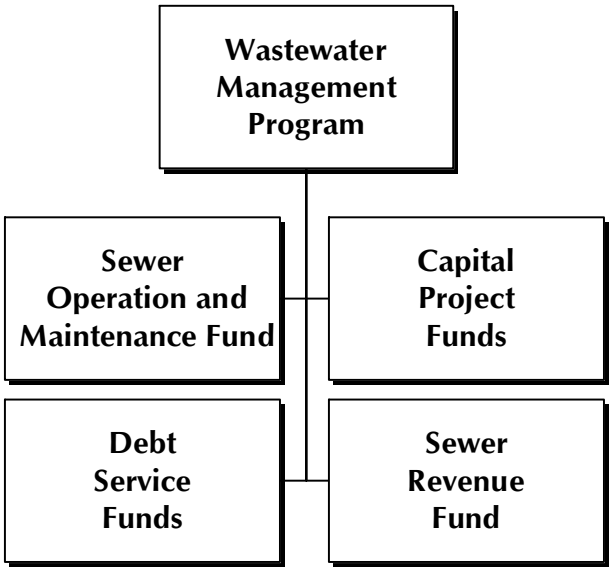
Wastewater Management Program Overview



Focus

The Wastewater Management Program (WWM) is operated, maintained and managed within the Department of Public Works and Environmental Services (DPWES). The program currently includes the County-owned Noman M. Cole, Jr. Pollution Control Plant (67 million gallons per day (mgd) capacity), nearly 3,350 miles of sewer lines, 65 pump stations, 54 flow-metering stations, and covers approximately 234 square miles of the County's 407 square-mile area. Capacity entitlement at the other regional facilities totals 91 mgd. A total of 321/320.5 SYE positions will perform wastewater maintenance and operations in FY 2010. The WWM anticipates a total of 362,375 households and businesses (new and existing) connections in Fairfax County will be connected to public sewer in FY 2010.

In addition to providing County residents and businesses with sewer service, Fairfax County provides sewer service to other nearby entities through "Sales of Service" agreements with the Arlington and Loudon Counties, the cities of Falls Church and Fairfax, the towns of Herndon and Vienna, Fort Belvoir, the Covanta Fairfax, Inc. Waste-to-Energy facility and Fairfax Water. These entities share the capital and operating costs of the WWM based on actual wastewater flow and reserved treatment capacity.

The strategic planning and overall business monitoring is the responsibility of the Wastewater Management Leadership Team, whose responsibilities focus on long range planning, strategic thinking, continuous improvement processing, wastewater capacity, and financial management. This team is comprised of employees from three divisions within WWM, Collections, Treatment, and Planning and Monitoring.

The Wastewater Collection Division (WCD) is responsible for the County's wastewater collection and conveyance system consisting of sewers, force mains, pumping stations and metering stations. The WCD has a proactive sewer system maintenance program that facilitates a safe and effective wastewater collection system. In FY 2008, over 470 miles of sewer lines were inspected and about 524 miles of sewer lines were cleaned to ensure maximum flow carrying capacity and reduce sewer backups and overflows. Over the last five years, WCD has rehabilitated approximately 88 miles of sewer lines to protect the environment and residents of Fairfax County.

The Wastewater Treatment Division (WTD) is responsible for operating and maintaining the County's wastewater treatment facility, the Noman M. Cole, Jr. Pollution Control Plant (NCPCP). The WTD continues to produce a quality effluent to meet regulatory and permit requirements, despite major construction occurring throughout the plant site. The NCPCP continues to make significant efforts to be a "good neighbor" by constructing an odor control system, which improves the air quality around the plant.

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The Wastewater Planning and Monitoring Division (WPMD) is responsible for the agency's fiscal planning, engineering planning and wastewater monitoring. The WPMD continues to effectively monitor the long-term planning needs for the Wastewater Management Program in terms of infrastructure upgrades, maintenance and expansions. The WPMD ensures that all financial requirements are fulfilled by maintaining a rate structure to adequately recover all operating and maintenance costs, capital improvements and debt service obligations. The WPMD also plans for system capacity, both in the conveyance system and treatment facilities, by initiating expansion and improvement projects to keep pace with increased wastewater flows. The WPMD safeguards the environment by ensuring compliance with water quality standards and prevention of toxic discharges into the collection system.

WPMD is currently monitoring the new Chesapeake Bay water quality program requirements which require 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 currently has the capability to meet a nitrogen standard of 6.0 milligrams per liter. A phased approach has been recommended to renovate and upgrade current plant facilities to accommodate these more stringent nutrient discharge requirements.

The Sewer Service Charge rate will increase from $4.10 to $4.50 per 1,000 gallons of water consumption in FY 2010. This equates to an approximate increase of 9.75 percent in Sewer Service Charges. In addition, a new base charge to sewer billings is included in FY 2010 to recover billing costs for the Wastewater Management Program. The base charge will be billed quarterly in the amount of $5.00 per bill totaling $20.00 per year. Base charges are an industry standard used to promote revenue stability and are locally used by: Fairfax Water, Loudoun Water, Stafford County, District of Columbia Water and Sewer Authority (DCWASA), City of Alexandria, Washington Suburban Sanitary Commission (WSSC), and Prince William County. The combined effect of the sewer service charge as well as the new base charge equate to an increase of 16.2 percent in rates and will result in an anticipated increase in the annual cost to the typical household of $50.40. For FY 2011 and FY 2012, annual service charge increases of 17.0 percent have been adopted and for FY 2013, an annual sewer service charge increase of 14.0 percent will be adopted. 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 "Chesapeake 2000" Agreement. Due to the significant level of requirements, it is anticipated that projects will be financed on an as-needed basis. These rate increases are consistent with the recommendations of the Department of Public Works and Environmental Services and the analysis included in the February 2009 Wastewater Revenue Sufficiency and Rate Analysis report.

The FY 2010 Sewer Service and Base Charges will generate additional revenues and will partially offset the increased costs associated with capital project construction, system operation and maintenance, debt service and upgrades to effectively meet new, more stringent nitrogen discharge limitations from wastewater treatment plants. Other sources of revenue are projected to remain flat due to a moderate level of new development and growth anticipated in the County as compared to previous years. The program may also utilize sewer fund balances to partially offset these higher costs.

Availability Charges are one-time "tap fees" charged to new customers for initial access to the system. The revenue from Availability Fees is used to offset the costs of expanding major treatment facilities. In FY 2010, Availability Fees will increase from $6,896 to $7,310 or approximately 6 percent for single-family homes based on current projections of capital requirements. Rates are adjusted based on continued increases in expenses associated with treatment plant upgrades and interjurisdictional payments that result from population growth, more stringent treatment requirements and inflation. This FY 2010 rate increase is consistent with the recommendations of the Department of Public Works and Environmental Services and the analysis included in the February 2009 Wastewater Revenue Sufficiency and Rate Analysis report. FY 2010 through FY 2011 rates are projected to increase 6.0 percent in anticipation of rising borrowing costs. Since construction costs appear to be declining, FY 2012 and FY 2013 rates are projected to be held equal to FY 2011 rates pending a more detailed pricing analysis. The following table displays the resulting increase by category.

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Fiscal Year	Availability Fee	Sewer Service Charge Per 1,000 gallons water used
2006	$5,874	$3.28
2007	$6,138	$3.50
2008	$6,506	$3.74
2009	$6,896	$4.10
2010	$7,310	$4.50
2011	$7,750	$5.27
2012	$7,750	$6.17
2013	$7,750	$7.03

The system supplements the capacity of its own collections and treatment facilities through "Treatment by Contract" agreements with the District of Columbia Water and Sewer Authority (DCWASA), the Alexandria Sanitation Authority (ASA), the Upper Occoquan Sewage Authority (UOSA) and Arlington County. As stated in the individual agreements, the County pays its share of operating, capital and/or debt costs of each entity's system based on actual wastewater flows and allocated capacity, respectively.

The Wastewater Management Program has issued debt to fund major expansion and upgrade projects for both its own plant and its portion at the "Treatment by Contract" facilities. The following table shows the projected annual debt service payments along with remaining debt service as of June 30, 2008.

Wastewater Management Debt Service			
Years	**Principal**	**Interest**	**Total**
2009	$11,778,398	$17,888,216	$29,666,614
2010	12,286,810	18,669,001	30,955,811
2011	13,416,593	18,164,203	31,580,796
2012	14,000,121	17,593,771	31,593,892
2013	14,606,910	17,001,897	31,608,807
2014	15,207,700	16,382,838	31,590,538
2015	15,943,444	15,662,771	31,606,215
2016-2030	270,950,125	132,253,834	403,203,959
TOTAL	**$368,190,101**	**$253,616,531**	**$621,806,632**

In FY 2010, the County is projected to provide for the treatment of 112.87 million gallons of wastewater per day. Approximately 40 percent of this flow is treated at the NCPCP. The flow is distributed between the NCPCP and the interjurisdictional facilities as detailed in the table below. The table also includes the capacity utilization percentage and the available (unused) capacity for each plant.

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Treatment Plant	Capacity (MGD)	FY 2010 Projected Daily Average (MGD)	Capacity Utilization (%)	Available Capacity (MGD)
DCWASA Blue Plains	31.0	29.41	94.9%	1.59
Noman M. Cole, Jr.	67.0	45.14	67.4%	21.86
Alexandria Sanitation Authority	32.4	23.01	71.0%	9.39
Arlington County	3.0	2.30	76.7%	0.70
Upper Occoquan Sewage Authority	24.6	13.01	52.9%	11.59
Total	**158.0**	**112.87**	**71.4%**	**45.13**

To ensure that WWM remains competitive and provides a high performance operation including improvements to the technical and managerial capacities that will continue to enhance service quality, customer service and financial planning, WWM closely monitors the following areas:

	FY 2008 (Actual)	FY 2009 (Adopted)	FY 2010 (Projection)
Sewer Service Charge, $/1,000 gallons	$3.74	$4.10	$4.50
Treatment Costs, $/MGD	$1,268	$1,300	$1,350
Number of Sewer System Overflows	17	20	20
Odor Complaints per year	22	25	25

The WWM is comprised of seven separate funds under a self-supporting fund structure (Enterprise Funds) consistent with the Sewer Bond Resolution adopted by the Board of Supervisors in July 1985. For more detailed information of the operational aspects of the various programs, refer to the narrative of Fund 401, Sewer Operation and Maintenance, which immediately follows this Overview. The following is a brief description of the seven active funds:

- **Fund 400** - Sewer Revenue is used to credit all operating revenues of the system, as well as most of the interest on invested fund balances. Revenues recorded in this fund are transferred to the various funds to meet their operational requirements. The remaining fund balances are used to set aside funds for various reserves and future system requirements.

- **Fund 401** - Sewer Operation and Maintenance provides funding for the three divisions responsible for the management and operation of the program, supported by a transfer from Fund 400.

- **Fund 402** - Sewer Construction Improvements provides funding for the repair, rehabilitation and improvement requirements of the entire program's infrastructure, supported by a transfer from Fund 400.

- **Fund 403** - Sewer Bond Parity Debt Service is used to record principal, interest and fiscal agent fees for the Series 2004 Sewer Revenue Refunding Bonds in accordance with the current Sewer Bond Resolution, supported by a transfer from Fund 400.

- **Fund 406** - Sewer Bond Debt Reserve provides debt reserve funds for the 2004 Series of Sewer Revenue Bonds in accordance with the current Sewer Bond Resolution, which are funded from the issuance of sewer revenue bonds and/or program revenues.

- **Fund 407** - Sewer Bond Subordinate Debt Service records all debt service payments on the UOSA revenue bonds, VRA Loans, and Manassas Debt payments. All future issues or refinancing of debt arising from interjurisdictional capacity rights may be treated as subordinate obligations of the system as provided by the General Bond Resolution for Sewer Revenue Bonds. Funding is supported by a transfer from Fund 400.

- **Fund 408** - Sewer Bond Construction provides for major program construction projects, which are funded from the issuance of sewer revenue bonds and/or program revenues.