

**Fairfax County
Consumer Protection Commission**

**Report on Rates Charged by Water Systems
Serving Fairfax County Residents**

April 20, 2010

Statement of Principles

Each water system providing service to Fairfax County residents should charge all similarly-situated customers the same rates. Water rates should be cost-based, fair, and reasonable. A municipal water system that provides water service to customers located outside its geographical boundaries (“outside customers”) should not charge its outside customers a higher rate unless that rate reflects a reasonable correlation between the benefit conferred upon its outside customers and the higher cost exacted from them. Water rates should reflect reasonable reserve expenses for maintenance and improvement of the providers’ facilities and infrastructure, but these rates should not include amounts intended to fund activities unrelated to the provision of water services. Neither water revenues nor water system reserves should be transferred by a municipally-owned water system to the municipality’s General Fund to be applied towards expenditures unrelated to water utility services.

The Consumer Protection Commission (Commission) was requested by the Fairfax County Board of Supervisors in 2008 to conduct this investigation of water rate disparities charged to the Fairfax County consumers. The Commission has been ably assisted by the staff of the Department of Cable Communications and Consumer Protection. The Commission appreciates the full cooperation and presentations made by the Fairfax County Water Authority, the City of Fairfax, and the Town of Herndon in this project.

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Executive Summary

Until September 1957, Fairfax County was supplied water through many small, mostly private water systems, and a limited number of public systems, including those operated by the City of Falls Church and the Town of Vienna. In order to improve service reliability, establish equitable rates, and provide effective fire protection throughout Fairfax County, the Board of Supervisors created the Fairfax County Water Authority (Fairfax Water) in September 1957. Today, residents of the County receive water service from five water systems: Fairfax Water, the City of Falls Church, the City of Fairfax, the Town of Vienna, and the Town of Herndon.

With over 235,000 accounts, Fairfax Water is the largest water system in the County. The next largest system, operated by the City of Falls Church, is about 1/7th the size, with approximately 35,000 accounts. The City of Fairfax provides water to over 11,000 customers, while the Towns of Vienna and Herndon each have less than 10,000 accounts. The systems' distribution facilities are sized accordingly. Fairfax Water and the City of Fairfax operate their own treatment facilities, while the other three systems purchase water on a wholesale basis.

Each of the municipal water systems provides service to customers located outside municipal boundaries (outside customers). The municipal systems and the approximate percent of outside customers are: City of Falls Church, about 92 percent; City of Fairfax, about 28 percent; Town of Vienna, about 39 percent; and Town of Herndon, about 1 percent. System capacity and average demand are reported as million gallons per day, or MGD.

Comparison of System Attributes					
	<i>Fairfax Water</i>	<i>City of Falls Church</i>	<i>City of Fairfax</i>	<i>Town of Vienna</i>	<i>Town of Herndon</i>
<i>Number of accounts</i>	235,000	35,000	11,765	9,480	5,872
<i>% "outside" customers</i>	N/A	92%	28%	39%	1%
<i>Treatment plants</i>	2	0	1	0	0
<i>Distribution system</i>	3,100 miles	497 miles	200 miles	131 miles	88 miles
<i>System capacity</i>	345 MGD	45 MGD	18 MGD	3.7 MGD	3.7 MGD
<i>Average demand</i>	148 MGD	17.5 MGD	12 MGD	2.5 MGD	2.3 MGD
<i>Est. FY2009 expenditures</i>	\$112,164,000 (projected)	\$16,941,097	\$8,469,785	Reports on a combined water/sewer basis	
<i>Est. FY2009 revenues</i>	\$160,615,000 (projected)	\$22,053,699	\$8,940,604	Reports on a combined water/sewer basis	

Under Virginia law, each of the five water systems is subject to a statutory obligation to charge fair and reasonable rates for the water services it provides. The Virginia Code does not establish a method or standard for calculating water rates. Since at least the mid-1970s, the Attorney General of Virginia has taken the position that in the absence of a statutory standard for determining charges, the fees and charges fixed by a municipal water system are subject only to the implicit requirement of reasonableness.

The Virginia courts give localities considerable latitude in rate-setting. The law does require, however, that a locality demonstrate a plausible basis supporting the fees and charges it establishes. In determining reasonableness, the term “cost” appears to be broadly construed and not necessarily limited to the actual costs of providing a particular service.

Fairfax Water bases its residential water rates on periodic utility rate studies and annual rate reviews. For at least the last decade the City of Falls Church has set residential water rates at a level intended to generate a surplus, which it could then transfer to its General Fund. The City of Falls Church is now soliciting consultants to conduct a rate study and propose rates. The City of Fairfax conducts financial analyses to determine the rate impact of projects but has not conducted a recent rate study. The Town of Vienna appears to have no cost or revenue information upon which to set residential water rates. The Town of Herndon, which has periodically undertaken rate studies, intends to conduct studies and review rates on an annual basis.

Only the Town of Vienna has established a water rate structure that includes a higher rate for customers located outside municipal boundaries. The residential commodity rate (rate per 1,000 gallons consumed) the Town charges its outside customers is 9.5 percent higher than the rate it charges Town residents.

The five systems’ different sizes and characteristics suggest that they have different costs. In fact, the existence and expectation of legitimate rate differentials among water utility systems is well documented and accepted within the industry. The systems’ different costs, in conjunction with different practices regarding rate-setting and transfers, translate into different rates charged to residential customers per 1,000 gallons of water consumed:

Commodity Charge per 1,000 Gallons of Water (except as noted)						
<i>Fairfax Water</i>	<i>City of Falls Church</i>	<i>City of Fairfax</i>		<i>Town of Vienna</i>		<i>Town of Herndon</i>
		<i>1st 5,000</i>	<i>Above 5K</i>	<i>Inside</i>	<i>Outside</i>	
\$1.93	\$3.03	\$19.26	\$3.69	\$3.99	\$4.37	\$2.90

The rates charged by the five water systems compare very favorably to water rates statewide, as each charges rates below statewide averages. Further, as of July 2009, residential water rates charged by Fairfax Water, the City of Falls Church, and the Town of Herndon fell below the region’s average water rate. However, the Town of Vienna’s water rates were among the highest in the region.

While the Town of Vienna charges its outside customers a higher rate than it charges Town residents, the practice of establishing different water rates for “inside” and “outside” customers is permissible under Virginia law, as long as there is a reasonable correlation between the benefit conferred and the cost exacted. Generally, a reasonable correlation exists if the facts support both (1) the decision to charge outside customers more than inside customers, and (2) the level of outside rates charged. Even though Vienna’s inside/outside rate differential is modest when compared to water system rate differential statewide, the Town appears to have no cost basis to support the higher residential water rates paid by outside residential customers.

Fairfax Water retains excess revenues within its system for use on water activities including facility renewal/replacement and other capital improvements.

Until FY2010, the City of Falls Church annually transferred surplus water revenues to its General Fund. It presumably ended the practice in 2010, as a result of the injunction issued by the Circuit Court of Fairfax County. The injunction was issued in early 2010 after the Court found that the City’s transfers amounted to an unconstitutionally void tax on customers located outside city limits.

The City of Fairfax and the Towns of Vienna and Herndon transfer water revenues to their General Funds, either directly as budgeted transfers or indirectly as administrative costs or other expenditures. Rate-setting studies and analyses are necessary to determine whether these transfers are permissible.

The report concludes with findings and recommendations.

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Rates Charged by Water Systems Serving Fairfax County Residents

I. Introduction

At its July 21, 2008 meeting, the Board of Supervisors (Board) directed the Consumer Protection Commission (Commission) to conduct an investigation, with the assistance of appropriate County staff, into the rates paid by County residents to the various systems that furnish water service within the County. The Board requested a Commission report, including findings and possible recommendations, by the end of the year.

Five municipal water utility systems operate in Fairfax County. These systems, in descending order based on number of residential accounts, are Fairfax Water, the City of Falls Church, the City of Fairfax, the Town of Vienna, and the Town of Herndon. Pursuant to the July 21, 2008 Board Matter, the Commission investigated the following issues relating to the provision of water utility services within Fairfax County:

- The differences in rates paid by customers of the five municipal water utilities providing service in Fairfax County.
- Rate differentials charged by the Town of Vienna, specifically the lower rates charged to customers located inside town limits and the higher rates charged to customers located outside town limits.
- Water utility revenue transfers made by municipal water utility systems in Fairfax County to the municipalities' general funds.

As part of its investigation, the Commission invited each of the five water utilities providing service in Fairfax County to give presentations to the Commission on the structure and rates of their respective systems. Fairfax Water, the City of Fairfax, and the Town of Herndon made such presentations. The City of Falls Church and the Town of Vienna declined.

In September 2009, the Commission solicited public input via a press release and a survey posted on the County website. It received 45 responses to that survey. The vast majority of respondents – 89 percent – indicated that they were satisfied with the quality of their water service. While less than half, or 44 percent, indicated that they were satisfied that their water rates were reasonable, no Fairfax County resident appeared at any of the Commission's public meetings to discuss rates or other matters related to water service.

Staff conducted initial and follow-up data gathering efforts with the water utility systems. It also conducted research into each of the systems using publicly-available information, such as municipal budget documents and capital improvement programs.

During the course of the Commission's investigation, Fairfax Water sued the City of Falls Church over issues including whether the City could transfer surplus water revenues to the City's General Fund for use on matters unrelated to water service. The Commission's investigation was slowed to allow it the opportunity to incorporate, if possible, the outcome of this litigation in its report. Fairfax Water's complaint regarding the transfer of revenues was resolved at the trial-court level in January 2010, but the ruling, which was adverse to the City of Falls Church, is on appeal to the Supreme Court of Virginia. As a result, while the report addresses the lower court's ruling, it does so with the recognition that this litigation is not final.

II. Water Systems Serving Fairfax County

A. Water supply in the metropolitan region

As a general rule, water is furnished to Virginians by three types of entities: public systems, investor-owned systems, and privately-owned water systems. While precise numbers are difficult to locate, there appears to be close to 400 water and wastewater providers currently operating in Virginia. The vast majority of these systems – about 300 – are public systems.

Virginia's largest water utility is Fairfax Water, which is a public utility that serves nearly 1.5 million people in the Northern Virginia communities of Fairfax, Loudoun, Prince William and Alexandria. Virginia's largest investor-owned water system is Virginia American Water Company (VAWC), a subsidiary of American Water. VAWC serves more than 320,000 people statewide, including customers in the City of Alexandria and Prince William County. It is one of about 80 investor-owned or privately-owned water systems in the state.

The Potomac River is the source of nearly 90 percent of the Washington metropolitan region's drinking water. The area's supply is augmented by water from the Jennings Randolph and Little Seneca Reservoirs, the Patuxent and Occoquan rivers, Goose Creek (a Potomac Tributary), Lake Manassas (which feeds the Occoquan), and groundwater resources.

Three major water supply agencies furnish about 95 percent of the metropolitan region's water: the Washington Suburban Sanitary Commission, the Washington Aqueduct Division of the U.S. Army Corps of Engineers, and Fairfax Water. Fairfax County receives its water supply primarily from Fairfax Water and the Washington Aqueduct, which is a wholesale supplier to the City of Falls Church.

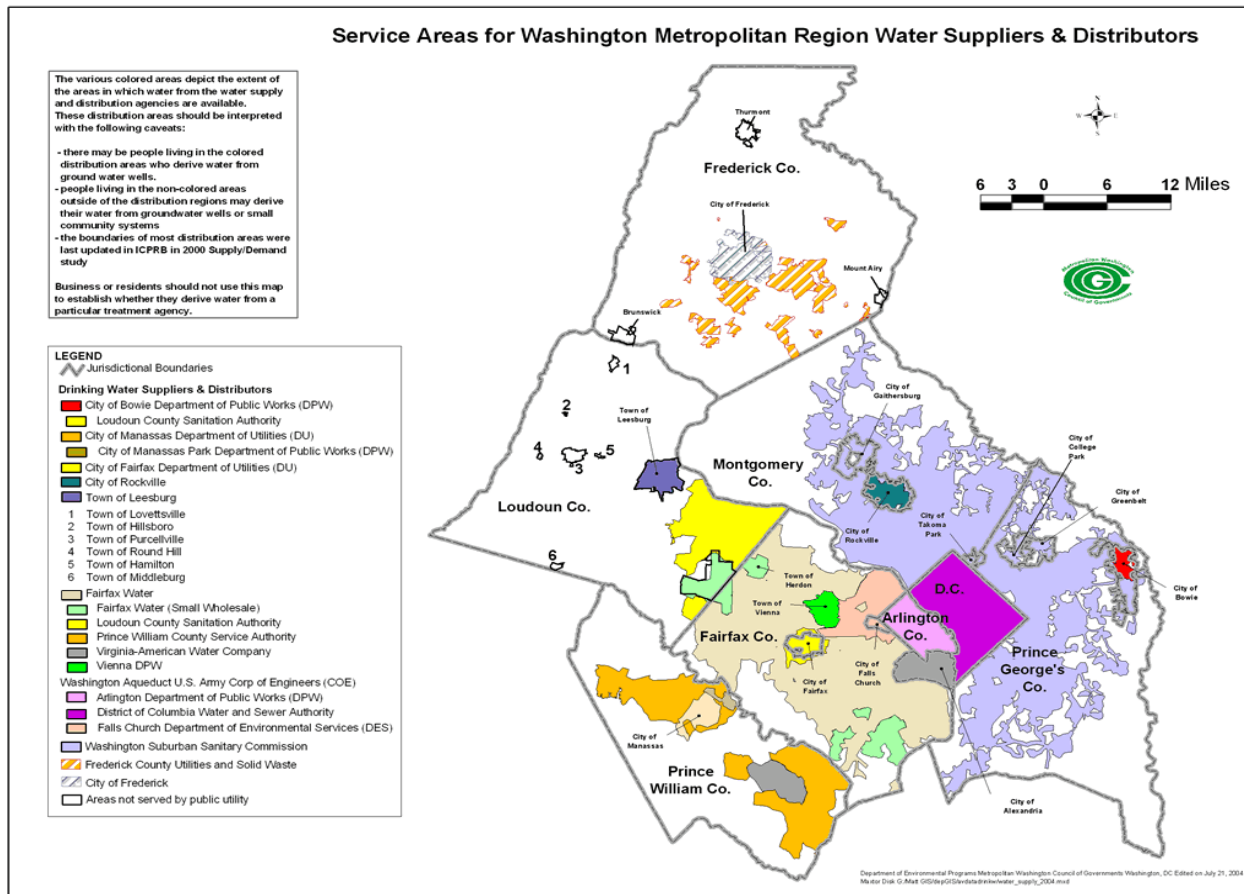
B. Service territories in Fairfax County

Until September 1957, Fairfax County was supplied water through many small, mostly private water systems, and a limited number of public systems, including those operated by the City of Falls Church and the Town of Vienna. There was no standardization between systems and each system maintained its own rate schedule and level of

service. In order to improve service reliability, establish equitable rates, and provide effective fire protection throughout Fairfax County, the Board of Supervisors created the Fairfax County Water Authority (Fairfax Water) in September 1957.

Today, residents of Fairfax County receive water from five water systems. These systems, in descending order based on number of residential accounts, are: Fairfax Water, the City of Falls Church, the City of Fairfax, the Town of Vienna, and the Town of Herndon. According to the County's FY 2010-2014 Adopted Capital Improvement Program, Fairfax Water supplies water to about 79 percent of Fairfax County residents (both directly and as wholesale provider to the Town of Herndon), the City of Falls Church provides water to about 13 percent (both directly and as a wholesale provider to the Town of Vienna), and City of Fairfax provides water to one percent. The remaining seven percent of residents receive water from private wells.¹

The generally-recognized service areas of these systems, as well as other systems in the metropolitan Washington, D.C. area, are shown below on this map generated by the Metropolitan Washington Council of Governments (MWCOC):



¹ See http://www.fairfaxcounty.gov/dmb/adopted/fy2010/cip/69_Water_Supply.pdf.

The service territories of the five water systems operating in Fairfax County reflect the legal rights enjoyed by cities and towns and developments since Fairfax Water's 1957 creation.

Subject to the provisions of Va. Code Ann. §§ 15.2-2111 and 15.2-2112, “[e]very locality may provide and operate within or outside its boundaries water supplies and water production, preparation, distribution and transmission systems, . . . or may contract with others for such purposes and services.” Va. Code Ann. § 15.2-2143. Cities and towns that provide water service have the exclusive right to provide such service within their geographical boundaries. Thus the cities of Falls Church and Fairfax and the towns of Vienna and Herndon may operate as the exclusive providers of water service to their residents.

While municipally-owned water systems may operate as the exclusive providers of water service to their residents, they do not have an exclusive right to provide service to customers located outside their boundaries. In Fairfax County, certain territory located outside a municipality's boundaries has been considered an “interface area,” defined as an area of overlapping authority where water service might legitimately be provided by either Fairfax Water or the municipal water system. This overlapping authority arises in the County because, when it was created, Fairfax Water was vested with the statutory authority to operate a water system “within, outside, or partly within and partly outside one or more of the localities which created the authority.” Va. Code Ann. § 15.2-5114 (6).²

Over the last several years, Fairfax Water and the City of Falls Church have been involved in litigation regarding Fairfax Water's authority to provide water service to customers located in one such interface area: a large portion of the County outside but contiguous to the City, including the Merrifield, Tysons Corner, and Vienna Metro areas. In 2007 and 2008, federal courts ruled that Fairfax Water is legally authorized to provide water service anywhere it can in Fairfax County, and that Falls Church did not have an exclusive service area in the eastern portion of the County. On February 25, 2010, the Fairfax County Circuit Court issued a consent decree adopting a settlement reached between the two systems regarding their provision of water service in this interface area. That decree provides in part that “[a]bsent mutual written agreement between the parties otherwise,” Fairfax Water and the City “shall each have a full, free and fair opportunity to provide water service within the City's traditional service area in Fairfax County.”³

² Municipally-owned water systems in Virginia are not regulated by the State Corporation Commission (SCC) in any form including rates charged, terms and conditions of service, or service territories. As a result, the SCC has no authority to establish a service territory within which competition would be prohibited, as it typically does for regulated electric and natural gas companies.

³ Consent Decree, *Fairfax County Water Authority v. City of Falls Church*, Case No. 2008-16114 (Feb. 25, 2010) at ¶ 2, available at <http://www.fcwa.org/current/2010%2002%2025%20Consent%20Decree.PDF>. The origins of this dispute between the two systems date to a 1959 service-territory agreement between Fairfax Water and the City of Falls Church, which expired in 1989. This agreement identified

C. Five water systems provide service in Fairfax County

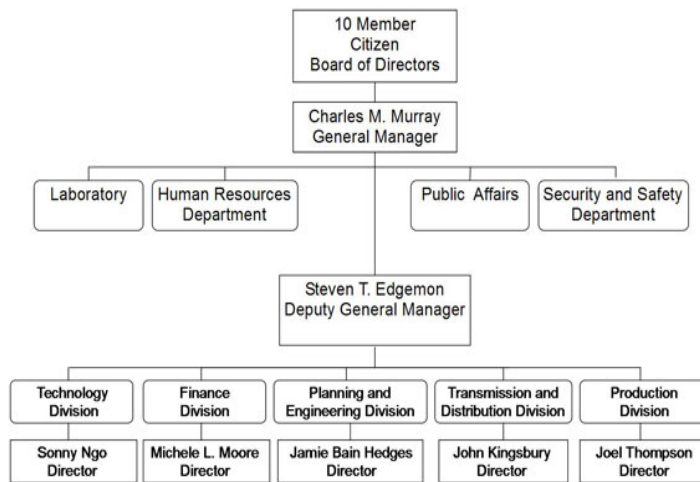
The five sections below describe each of the water systems providing service to Fairfax County residents.

1. Fairfax Water

Fairfax Water is chartered by the Virginia State Corporation Commission as a public, non-profit water utility. Its stated purpose is to acquire, construct, operate, and maintain an integrated water system to supply and distribute water.

Fairfax Water has over 235,000 mostly residential accounts in Fairfax County, comprising about 55 percent of Fairfax Water's total water sales. Wholesale purchases made by Loudoun and Prince William Counties, the Town of Herndon, Dulles Airport, Fort Belvoir, and other wholesale customers account for the remaining 45 percent. Fairfax Water generated revenues of over \$127 million in 2008.

Fairfax Water is governed by a ten-member Board of Directors, which is composed of Fairfax County citizens who are appointed by the Fairfax County Board of Supervisors, and employs a General Manager to manage its day-to-day operations. While Fairfax County has neither administrative nor budgetary control over Fairfax Water, the Board has entered into an agreement with Fairfax Water which requires Board consideration and approval of the Fairfax Water Capital Improvement Program.



exclusive service areas in which each would provide water service during the agreement's 30-year term. During the agreement's term, both Fairfax Water and Falls Church extended infrastructure and lines to the limits of their respective service areas. The agreement was not renewed after its 1989 expiration. In 2005, Fairfax Water informed Falls Church that it intended to serve new developments in the interface area. The City filed suit in 2007, shortly after learning that Fairfax Water had moved ahead with its plan.

a. Fairfax Water: Water supply and plant

Fairfax Water operates two water treatment plants with a combined capacity of 345 million gallons per day. These plants, which are the largest in the Commonwealth, are the Corbalis Treatment Plant, operating on the Potomac River in the northwestern area of Fairfax County, and the Griffith Treatment Plant, located on the Occoquan River in the southeastern area. Fairfax Water produces, on average, 148 million gallons of water per day. Its water quality exceeds all current and anticipated regulations.

The Fairfax Water distribution system is comprised of approximately 300 miles of transmission mains (up to 54 inches in diameter) and 3,100 miles of water mains. Nineteen booster pumping stations are located within the distribution system to provide adequate pressure throughout the service area. A total of 45 million gallons of distribution system storage is provided at storage tanks located throughout the County, with an additional 39 million gallons of treatment plant clearwell storage also available. Fairfax Water’s system is interconnected at about 76 locations with 12 other water systems in Northern Virginia.

b. Fairfax Water: Recent budgets

Fairfax Water operates as an enterprise fund. All water system revenues are returned to the water system to support infrastructure reinvestment and system improvements.

Fairfax Water enjoys AAA bond ratings from the three top national financial rating agencies: Fitch, Moody’s, and Standard & Poor’s. These top ratings reflect a high level of confidence in Fairfax Water’s financial management. The AAA bond ratings also are instrumental in allowing Fairfax Water to obtain financing at lower interest rates. Because debt service is Fairfax Water’s single largest expense, the lower interest rates associated with its AAA bond ratings equate to lower rates to customers.

Fairfax Water provided significant information to the Commission in early 2009 regarding its operating expenditures, revenues, and unrestricted fund balances, as shown in the tables below. Like other water systems, it has experienced significant cost increases over the last few years for fuel, power, chemicals, and construction materials.

Fairfax Water – Historical and Projected Operating Expenditures					
<i>Category</i>	<i>Fiscal Year Ending December 31 – in 000’s</i>				
	<i>Historical</i>		<i>Projected</i>		
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Personnel	17,629	19,066	20,343	21,360	22,428
Operations and maintenance	23,753	26,542	26,981	29,852	31,293
Debt service	35,532	38,496	37,670	37,687	41,582
Administration	13,758	16,567	20,430	21,367	22,348
Purchase water	20	26	28	28	28
Other	1,448	1,189	1,242	1,870	1,911
Total Expenditures	\$ 92,140	\$101,886	\$106,694	\$112,164	\$119,590

Fairfax Water – Historical and Projected Operating Expenditures					
Category	Fiscal Year Ending December 31 – in 000's				
	Historical		Projected		
	2006	2007	2008	2009	2010
% Change	7.4%	10.5%	4.7%	5.1%	6.6%

Fairfax Water – Historical and Projected Revenues					
Category	Fiscal Year Ending December 31 – in 000's				
	Historical		Projected		
	2006	2007	2008	2009	2010
Retail sales - residential	43,300	49,700	45,601	48,055	50,961
Retail sales - commercial	12,463	14,431	12,862	13,554	14,374
Wholesale water sales	54,364	69,459	69,207	68,195	54,804
Other	30,798	26,289	27,835	30,811	30,250
<i>Total Revenues</i>	\$140,925	\$159,879	\$155,505	\$160,615	\$150,389
% Change	17.4%	13.4%	-2.7%	3.2%	-6.3%

Fairfax Water – Historical and Projected Unrestricted Fund Balances⁴					
Category	Fiscal Year Ending December 31 – in 000's				
	Historical		Projected		
	2006	2007	2008	2009	2010
Beginning balance	279,993	233,981	246,694	214,385	159,885
Revenue	140,925	159,879	155,505	160,615	150,389
Operating expenditures	92,140	101,886	106,694	112,164	119,590
Operating income (loss)	48,785	57,992	48,811	48,451	30,799
Ending balance	\$233,981	\$246,694	\$214,385	\$159,885	\$163,972

c. Fairfax Water: Capital improvement plans

Fairfax Water also provided information regarding its capital improvement expenditures and plans. As shown below, having completed major projects related to its treatment facilities, Fairfax Water is now focusing on transmission and distribution system projects.

⁴ Fairfax Water noted bond sale proceeds of approximately \$100 million in 2004 and a planned \$60 million offering in 2010.

Fairfax Water – Historical and Projected Capital Improvement					
<i>Category</i>	<i>Fiscal Year Ending December 31 – in 000's</i>				
	<i>Historical</i>		<i>Projected</i>		
	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Treatment facilities	66,652	59,073	37,431	22,070	12,787
Trans./distribution	10,404	18,528	12,392	37,580	38,158
Pumping stations	1,624	764	585	1,454	3,340
Storage	130	766	20	670	625
Other	18,192	20,013	30,692	41,177	31,802
<i>Total</i>	\$97,002	\$99,144	\$81,120	\$102,951	\$86,712
<i>% Change</i>	16.6%	2.2%	-18.1%	26.9%	-15.7%
<i>Number of projects</i>	62	67	64	77	71

Five of the seven capital improvement projects listed on Fairfax Water's website are intended to enhance and expand its transmission and distribution system. These projects include the I-495 HOT lanes water main relocation, the construction of a new 54" water transmission pipeline in western Fairfax County, reliability improvements at the Tysons Corner and Fox Mill pump stations, and the addition of a 5.5 million gallon water storage tank on West Ox Road in the Penderwood area.

Fairfax Water's system planning addresses each component: supply, treatment, transmission, and storage. Its plans incorporate both historical demand data and planning data provided by Fairfax County, and its facilities are timed to be coincident with demand.

Development of Fairfax Water's facilities is conducted in accordance with a ten year Capital Improvement Program (CIP), which is described in County budget documents. The FY2010-2014 Adopted CIP identifies twelve project areas and the costs associated with each for both the five- and ten-year planning periods. According to this CIP, total FY2010-FY2019 project costs are an estimated \$484.5 million. Estimated budgets for the two five-year periods in this 10-year planning horizon are \$294.4 million for the five-year period FY2010-FY2014, and \$190.1 million for the five-year period FY2015-FY2019.

d. Fairfax Water: Rate-setting

As explained in its 2007 Cost of Service study, Fairfax Water has adhered to a consistent rate-development approach that includes the following concepts and objectives:

- Growth pays for facilities necessary to provide service for growth;
- Rates, fees, and charges are based on the cost of providing the service;
- Where practicable to identify costs, develop rates, fees, and charges for specific services;

- Rates, fees, and charges are to be fairly applied and equitably derived; and
- Rates, fees, and charges are to provide adequate funds for the continued operation, maintenance, and expansion of the water system.

In keeping with this approach, each year Fairfax Water analyzes its financial resources in order to determine whether its rates, fees, and charges are adequate to support its program. That analysis may include the preparation of a cost of service study by outside consultants.

As a general rule, Fairfax Water tends to propose and adopt, after public hearing, modest annual increases in its water rates effective in April of each year. Small increases avoid the “rate shock” to customers that can be triggered by substantial and unexpected increases in rates.

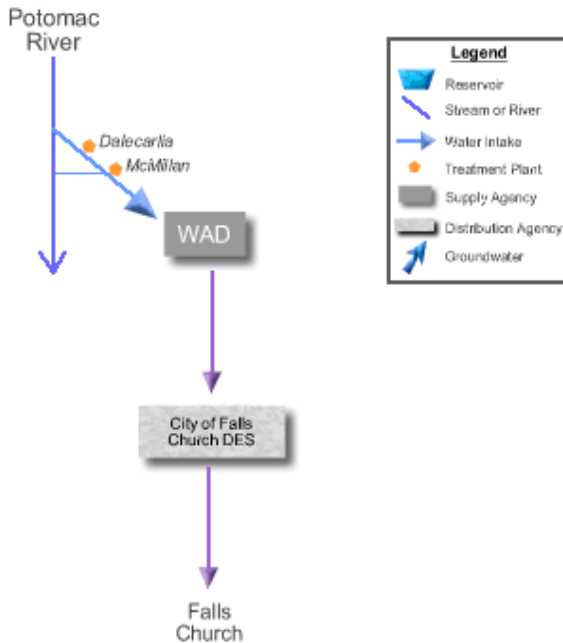
2. City of Falls Church

The City of Falls Church has been providing water service to customers inside and outside its city limits for more than 75 years. The system, which is operated by the City’s Public Utilities Division of the City’s Department of Environmental Services, provides service to approximately 35,000 accounts, about 30,600 of which are residential. About 92 percent of its customers are Fairfax County residents located outside the City limits.

The City covers an area of just 2.2 square miles, but the traditional service territory of its water system is a 33-square mile area that includes the City of Falls Church and large portions of Fairfax County, including sections of Fairfax, McLean, and Tysons Corner. The City recently abandoned its long-standing claim of an exclusive right to provide water service to customers located in that part of its service territory that falls within the County. As noted on page 4, in February 2010 the City and Fairfax Water agreed that each water system will have a “full, free and fair opportunity” to provide water service within the City’s traditional service area in Fairfax County.



a. City of Falls Church: Water supply and plant



The City of Falls Church purchases its treated water from the Washington Aqueduct Division of the Army Corps of Engineers (WAD). WAD obtains its water from the Potomac River through intakes at Great Falls and Little Falls and operates two water treatment plants, the McMillan and Dalecarlia plants. WAD supplies Falls Church from its Dalecarlia plant.

The City of Falls Church water system has a current system capacity of 45 million gallons per day (MGD), with an average demand of about 17.5 MGD. The distribution system consists of 497 miles of water mains (up to 42 inches in diameter), a main pumping station at Chain Bridge, eight pumping stations, and 10 storage facilities with a total capacity of approximately 14.2 million gallons.

b. City of Falls Church: Recent budgets

The City’s Department of Public Utilities maintains and operates the water system as a self-supporting enterprise fund, whereby the operations and capital expenditures are funded with revenues generated from user fees, one-time fees paid for capacity at the time of connection, and miscellaneous fees.

From the mid-1990s through FY2009, the City transferred surplus water revenues to its General Fund, thereby making its provision of water service a key source of revenue for the City of Falls Church. It has described these annual transfers as the payment of a “management fee.” As defined in the City’s FY2009 Consolidated Annual Financial Report and its budget documents, the fee is equal to 10 percent of all system revenues plus 100 percent of investment revenues. In addition to this transfer, the system reimburses the City for administrative expenses.

The practice of transferring funds in payment of a “management fee” apparently ended effective FY2010 as the result of a January 2010 decision in *Fairfax Water v. Falls Church (Fairfax Water)*. This decision, which is discussed in more detail on page 32 and pages 39-40, found that the City’s practice of inflating water rates to generate a surplus that could be transferred to the City’s General Fund constituted impermissible and unconstitutional “taxation without representation” for the 92 percent of the system’s customers located outside City limits. The City has appealed the decision to the Supreme Court of Virginia. Only if the decision is overturned on appeal could the City be

expected to resume the practice of setting water rates at a level designed to generate a surplus, and to then transfer that surplus to its General Fund. If the decision is upheld, then the City must abide by the Court's ruling and refrain from engaging in such rate inflation practices in the future.

As a result of *Fairfax Water* decision, the City did not make a budgeted \$2.2 million transfer of surplus water revenues to its General Fund in FY2010, as reported in its FY2010 Adopted Budget, below. The City does not intend to reduce its water rates by an amount corresponding the transfer. Instead, as the FY2011 Proposed Budget reveals, the City proposes to substantially increase the Water Fund's contribution to the Capital Improvement Projects Fund.

City of Falls Church Water Fund Expenditures			
<i>Category</i>	<i>FY2009 Actual</i>	<i>FY2010 Adopted</i>	<i>FY2011 Proposed</i>
Administration	5,811,923	3,541,749	2,939,875
Customer Service	1,123,754	1,347,248	1,290,518
Water supply	6,277,072	9,171,349	9,823,167
Water distribution	-245,712	2,251,164	2,447,550
Water connection	551,577	643,695	682,010
Debt service	550,564	1,685,759	1,689,101
Post-employment benefits (other than pension)	42,880	49,057	52,700
<i>Subtotal</i>	14,112,058	18,690,021	18,924,921
Management fee – transfer to General Fund	2,254,041	2,212,411	0
Transfer to CIP	575,000	3,650,000	5,250,000
<i>Subtotal</i>	2,829,041	5,862,411	5,250,000
<i>Total Expenditures</i>	\$16,941,099	\$24,552,432	\$24,174,921

City of Falls Church Management Fee as Percent of Total Expenditures			
	<i>FY2009 Actual</i>	<i>FY2010 Adopted</i>	<i>FY2011 Proposed</i>
Management fee	\$2,254,041	\$2,212,411	\$0
Total expenditures	\$16,941,099	\$24,552,432	\$24,174,921
Fee as percent of total expenditures	13.3%	9.0%	0.0%

City of Falls Church Water Fund Revenues			
<i>Category</i>	<i>FY2009 Actual</i>	<i>FY2010 Adopted</i>	<i>FY2011 Proposed</i>
Service charges	19,095,058	19,485,106	19,542,663
Availability fees	1,502,966	500,000	250,000
Connection charges	125,076	151,000	151,000

City of Falls Church Water Fund Revenues			
<i>Category</i>	<i>FY2009 Actual</i>	<i>FY2010 Adopted</i>	<i>FY2011 Proposed</i>
Other	643,815	422,000	622,000
<i>Total Charges</i>	21,366,915	20,558,106	20,565,663
Developer contributions	233,178	0	0
Other revenues	453,606	306,000	321,000
<i>Total Other Revenues</i>	686,784	306,000	321,000
Proceeds from bond sale	0	3,575,000	4,350,000
Use of Fund balance	0	75,000	900,000
<i>Total Other Financing</i>	0	3,650,000	5,250,000
<i>Total Revenues</i>	\$22,053,699	\$24,514,106	\$26,136,663

c. City of Falls Church: Capital improvement plans

The City's five-year FY2011-2015 Water Fund Capital Improvements Program includes projects totaling \$32.3 million. Two separate projects on segments of the Kirby Road water main account for \$18.5 million of the program's five-year budget. Repair and replacement of the system's water mains account for \$10 million.

Updating and implementing the system's water main repair and replacement program is a City objective, according to the City's FY2010 Adopted Budget and FY2011 Proposed Budget. The program targets for replacement those water mains that have an unfavorable history of breaks. About two miles of problem water mains are replaced annually at an annual program cost of \$2 million, or a five-year program cost of \$10 million.

According to its FY2010 Adopted Budget, the City transferred \$8.3 million (actual) in FY2008 to its Capital Improvement Projects (CIP) Fund. The City budgeted a \$2.55 million transfer of water revenues to the City's CIP Fund in FY2009 but did not meet this target. According to its FY2011 Proposed Budget, the City transferred only \$575,000 of the budgeted \$2.55 million to its CIP Fund in FY2009. The City budgeted a \$3.65 million transfer for FY2010. The FY2011 Proposed Budget – which was prepared after the *Fairfax Water* decision – indicates that the City plans a \$5.25 million transfer in FY2011, or an increase of almost 44 percent as compared to FY2010.

City of Falls Church FY2011 Proposed Budget – Water Fund Transfers				
	<i>FY2009 Actual</i>	<i>FY2010 Adopted</i>	<i>FY2011 Proposed</i>	<i>Percent Change</i>
<i>Transfer to General Fund</i>	\$2,254,041	\$2,212,411	\$0	-100.00%
<i>Transfer to CIP</i>	\$575,000	\$3,650,000	\$5,250,000	43.84%
<i>Net Transfer</i>	\$2,829,041	\$5,862,411	\$5,250,000	-10.45%

d. City of Falls Church: Rate-Setting

In the *Fairfax Water* decision, the court found that the City Council of Falls Church set the City's water rates in 2003, 2004, and 2005 so that receipts would not only exceed expenses but would create a substantial profit. A 2005 memorandum by the City Manager "made clear," the court stated, "that the then-existing rates were more than sufficient to operate the water system and pay for all capital improvements. It also showed that the rate increase was needed simply in order to transfer more money to the general fund."⁵

As a result, the court enjoined the City's practice of transferring surplus water revenues to the City's General Fund, finding that it violated the Virginia Constitution as well as the City's charter. The court therefore decreed that the City comply with its charter and set water rates "that, in the judgment of the City Council, will result in receipts equal to expense (including any future expense of the water system). In setting its rates, the City may not include as an "expense" any surplus to be transferred to the general fund."⁶

On January 12, 2010, just days after the *Fairfax Water* decision, the City issued Request for Proposal No. 1015-10-FRS, soliciting consultants to perform a cost of service analysis and to propose rate and fee schedule design or adjustments to the existing rates and fees for both its water and wastewater systems. It likely will not act on this study until FY2012. In the meantime, the City has no plans to reduce its water rates; in fact, its FY2011 budget materials anticipate "modest" future increases in water rates, even though the Water Fund is described as healthy.

3. City of Fairfax

Through its Department of Transit and Utilities (DTU), the City of Fairfax provides water service to the City and small portions of Fairfax County contiguous to the City. The City provides water service to about 11,765 customers. About 72 percent of the system's total accounts (8,469) are located inside City limits. As of March 2010, about 88 percent of the City's water accounts are residential (10,344 of 11,765). About 28 percent of the City's residential customers are located outside City limits (2,984).

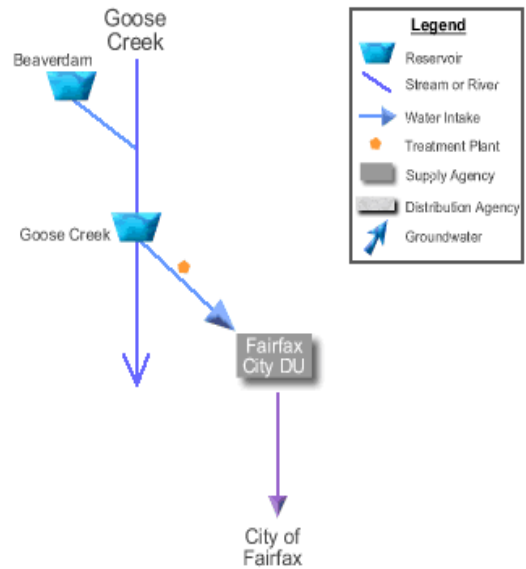
According to the City's website, it provides water service to George Mason University and the following Fairfax County subdivisions and areas: Arrowood, Blakelee Homeowners Association, Brecon Ridge, Briars of Westchester, Cherry Wood South, Cyrandall Valley, Fair Oaks, Fairfax Centre, Five Oaks Place, Flint Hill Manor, Halemhurst, Hickory Farm, Holly Park, Langhorne Acres, Mantua Hills, Oak Mar Courts, Oakton Park, Orchard Knolls, Summit Square, West Hill, and Westchester. It provides both water and sewer service to Fairfax Villa, University Square, Villa D'Este, and Warren Woods.

⁵ *Fairfax Water* Opinion Letter at 5.

⁶ *Fairfax Water* Opinion and Decree ¶ 3 (Jan. 6, 2010).

a. City of Fairfax: Water supply and plant

As shown in the accompanying graphic, the City of Fairfax obtains its water from Goose Creek Reservoir in Loudoun County, 22 miles northwest of the City. This reservoir has a capacity of between 200 and 300 million gallons. The City’s back-up, Beaverdam Creek Reservoir, has a 1.3 billion gallon capacity and is used in case of drought. In addition, the City of Fairfax water system maintains substantial interconnections with the Fairfax Water system for supplies during emergencies or shortages.



The City operates its own water treatment facility in Loudoun County. Its Goose Creek Water Treatment Plant has a capacity of 12 MGD but is capable of producing up to 18 MGD. Its water distribution system includes a 26-mile transmission main (24 inches in diameter), approximately 200 miles of waterlines ranging in size from four to 16 inches, and three standpipe water tanks.

b. City of Fairfax: Recent budgets

The City operates its water system as an enterprise fund that finances the cost of providing water services primarily through user charges.

The City’s budgets detail annual expenditures for water impoundment and treatment, water line maintenance, administration and engineering, consumer services, and debt service. The budgets do not include an annual expenditure for contingent reserves but do identify cash balances. There are no reported transfers of water revenues to the City’s general fund, but administration costs include a relatively consistent and substantial “management fee” that, according to City budget documents, covers the system’s “share and use of City services.” In June 2008, the City of Fairfax secured \$4.8 million in 30-year lease financing for capital improvements to its water and sewer systems, all of which has been included in its Water Fund.

City of Fairfax Water Fund Expenditures			
<i>Category</i>	<i>FY2009 Actual</i>	<i>FY2010 Estimated</i>	<i>FY2011 Proposed</i>
Water impoundment and treatment	3,504,807	3,609,300	9,758,016
Water line maintenance	2,287,764	1,500,050	4,396,846
Management fee	1,274,891	1,338,638	1,322,168
Other administration costs	398,424	506,600	574,245
Consumer services	786,698	827,400	879,515

City of Fairfax Water Fund Expenditures			
<i>Category</i>	<i>FY2009 Actual</i>	<i>FY2010 Estimated</i>	<i>FY2011 Proposed</i>
Water debt service	217,200	376,303	377,036
<i>Total Expenditures</i>	\$8,469,785 ⁷	\$8,158,291	\$17,307,826

City of Fairfax Management Fee as Percent of Total Expenditures			
	<i>FY2009 Actual</i>	<i>FY2010 Estimated</i>	<i>FY2011 Proposed</i>
Management fee	\$1,274,891	\$1,338,638	\$1,322,168
Total expenditures	\$8,469,785	\$8,158,291	\$17,307,826
Fee as percent of total expenditures	15.1%	16.4%	7.6%

The City's FY2011 Proposed Budget notes that in FY2011 it will acquire \$9.6 million in lease financing to address the infrastructure needs of its water system. "As a result, revisions to the City's debt service payments will be incorporated in future years, and subject to ongoing dialogue with the City's financial advisors and market conditions affecting interest rates."⁸

As a mature and largely built-out system, the City of Fairfax's water system relies on the recurring rates paid by established customers and has only limited revenues from new connection charges. The City anticipates that these rates will be increasing annually for the foreseeable future, as the water system is facing significant and escalating costs to maintain its aging water treatment plant and distribution system and to meet its regulatory obligations. The City's revenue picture is complicated by the potential loss of its major wholesale customer, Loudoun County. Loudoun, which currently purchases about 7 MGD from the City, has informed the City that it plans to build its own water treatment plant sometime during the next ten years.

City of Fairfax Water Fund Revenues			
<i>Category</i>	<i>FY2009 Actual</i>	<i>FY2010 Estimated</i>	<i>FY2011 Proposed</i>
Retail residential sales	2,193,042	2,350,462	2,456,409
Retail commercial sales	3,028,410	3,624,939	3,788,061
Wholesale sales	1,454,732	1,121,896	1,121,896
Connection charges	1,683,015	1,305,530	654,967
Other revenues	581,406	75,046	72,200
Other financing sources	0	0	8,940,000
<i>Total revenues</i>	\$8,940,604	\$8,477,874	\$17,033,534

⁷ According to information provided by the City's Utilities staff, as of April 2010, actual FY2009 expenditures were somewhat higher, at \$8,579,795.

⁸ City of Fairfax FY2011 Proposed Budget at Utilities E-29.

City of Fairfax FY2011 Proposed Budget – Water Fund			
	<i>FY2009 Actual</i>	<i>FY2010 Estimated</i>	<i>FY2011 Proposed</i>
Revenues	\$8,940,604	\$8,477,874	\$17,033,534
Expenditures	\$8,469,785	\$8,158,291	\$17,307,826
Cash balance	\$2,973,628	\$2,793,211	\$3,018,918
Rate increase	7%	10%	7.5%

c. City of Fairfax: Capital improvement plans

According to the City’s FY2010-2011 budget, a system objective is to replace approximately one mile feet of deteriorated water mains annually. The amount of pipeline replaced has varied over the years, however. The 2008 Audit reports the following replacement amounts, in feet: 7,420 (1999), 3,937 (2000), 3,564 (2001), 60,085 (2002), and 6,800 (2003). According to the City’s FY2009 Budget, contract documents were completed for the full amount of Adopted water main replacement in FY2005-06 but actual construction was delayed until FY2008-09 to avoid additional traffic congestion during renovation of the downtown area. The City replaced 3,000 feet in 2009. Its FY2010 and FY2011 replacement estimates are 0 feet and 5,630, respectively.

The City’s FY2010-2011 budget includes \$1,750,000 for waterline replacement. According to this budget, capital funding for water related projects is available through lease financing, which will be obtained in FY2011 for the water fund in the amount of approximately \$8,000,000. Planned projects include improvements to the Goose Creek Raw Water Pumping Station, Chemical Facilities Upgrade, water main replacement, water tank maintenance, and implementation of automated meter reading and monitoring systems.

d. City of Fairfax: Rate-setting

It is a City budgeting policy to set utility rates for the Water and Sewer funds that will ensure industry standard operation of the enterprise functions.⁹ According to City staff, it has undertaken financial analyses to determine rate increases needed to fund projects, but has not undertaken a rate study in at least the last five years.

The City increased water rates by seven percent in FY2009 and budgeted a 10 percent rate increase for FY2010. According to the City’s FY2011 Proposed Budget, the City anticipates scheduled rate increases each year for the foreseeable future in order to finance the continuing escalating costs associated with water treatment and distribution capital upgrades.

⁹ See City of Fairfax City Manager’s Proposed Budget Message FY2007-2008 (March 13, 2007), available at <http://www.fairfaxva.gov/budget/ProposedBudgetMessage.pdf>.

4. Town of Vienna

The Town of Vienna has been providing water service for nearly 80 years. Water service to the Town and some contiguous portions of Fairfax County is provided by the Water and Sewer Division of the Town's Department of Public Works. The system serves approximately 9,480 customers, the vast majority of which – 9,034, or about 95 percent – are residential. About 39 percent of its customers are located outside Town limits.

The Town is 4.4 square miles in size. Its water system extends beyond the town limits by one to two miles in some spots.

a. Town of Vienna: Water supply and plant

The Town is currently a wholesale customer of the City of Falls Church, which supplies the Town with treated water the City purchases from the Washington Aqueduct.¹⁰ The Town supplements its wholesale water purchases with groundwater from two regularly-inspected wells located within the Town. According to the Town's 2008 Comprehensive Plan, the wells have average yields of 25,000 and 40,000 gallons per day. The groundwater comprises about one percent of the Town's total usage.

The Town provides approximately 912 million gallons of potable water to users each year, or about 2.5 MGD. Its distribution system consists of approximately 131 miles of pipe, ranging in size from 1.5 inches up to 16 inches in diameter.

b. Town of Vienna: Recent budgets

The Town of Vienna provides water and sewer services through a combined Water and Sewer Fund. This fund is an enterprise fund that finances the cost of providing water and sewer services primarily through user charges.

The following information is provided in Chapter 4 of the Town's Proposed FY2011 budget, *Revenues and Expenditures by Fund*:

<i>Town of Vienna Combined Water and Sewer Fund Expenditures</i>			
<i>Category</i>	<i>FY2009 Actual</i>	<i>FY2010 Estimated</i>	<i>FY2011 Proposed</i>
Personnel	1,254,969	1,292,146	1,264,069
Employee benefits	397,468	418,505	412,557
Wholesale water purchase	1,759,502	1,596,600	1,414,956
Other purchased services	1,218,927	1,803,183	1,854,305
Other charges	53,691	50,370	50,370

¹⁰ Prior to spring of 2008, the Town had purchased its water from both the City of Falls Church and Fairfax Water. The Town began purchasing all of its water from the City in response to proposed price increases by Fairfax Water.

Town of Vienna Combined Water and Sewer Fund Expenditures			
<i>Category</i>	<i>FY2009 Actual</i>	<i>FY2010 Estimated</i>	<i>FY2011 Proposed</i>
Materials and supplies	153,604	231,139	184,320
Programs and services	18,507	62,444	61,960
Capital outlays ¹¹	508,692	100,233	100,106
Debt service	10,336	73,896	56,399
<i>Subtotal</i>	5,375,697	5,628,516	5,399,042
Transfer to General Fund	962,000	962,000	962,000
Transfer to Debt Service	315,519	315,519	241,728
<i>Subtotal</i>	1,277,519	1,277,519	1,203,728
<i>Total Expenditures</i>	\$6,653,216	\$6,906,035	\$6,602,770

According to the Town's budget documents, the Water and Sewer Division transfers a sum to the General Fund to reimburse indirect costs relating to Water and Sewer Fund activities.

Town of Vienna Water/Sewer General Fund Transfer as Percent of Total Expenditures			
	<i>FY2010 Budget</i>	<i>FY2010 Adjusted</i>	<i>FY2011 Proposed</i>
Transfer to General Fund	\$962,000	\$962,000	\$962,000
Total expenditures	\$6,653,216	\$6,906,035	\$6,602,770
Transfer as percent of total expenditures	14.5%	13.9%	14.6%

The FY2010 General Fund transfer of \$962,000 (shown above) is about one-third of FY2010's estimated water revenues of \$2,730,020 (shown below).

Town of Vienna Combined Water and Sewer Fund Revenues			
<i>Category</i>	<i>FY2009 Actual</i>	<i>FY2010 Estimated</i>	<i>FY2011 Proposed</i>
Water charges	3,043,501	2,730,020	3,398,688
Sewer charges	2,155,140	1,762,905	2,650,082
<i>Total Charges</i>	5,198,641	4,492,925	6,048,770
All other revenues	663,311	507,567	554,000
<i>Total Revenues</i>	\$5,861,952	\$5,000,492	\$6,602,770
<i>Total Charges as % of Revenues</i>	88.7%	89.8%	91.6%
<i>Total Water Charges as % of Revenues</i>	51.9%	54.6%	51.5%

¹¹ About 86 percent of the Town's FY2009 capital outlays reflect depreciation (\$437,369).

Water and sewer revenues are also reported in Chapter 7 of the Town's Proposed FY2011 Budget, *Expenditures by Department*. In Chapter 7, the Town notes that the Water and Sewer Division budget has been reorganized for FY2010-2011, with the division splitting into separate Water and Sewer divisions.¹² For the first year, personnel and materials have been divided in half. "Further budgetary refinements will occur in the future," the budget states, "as actual expenditure histories are experienced."¹³

Town of Vienna Combined Water and Sewer Division Budget			
<i>Category</i>	<i>FY2010 Budget</i>	<i>FY2010 Adjusted</i>	<i>FY2011 Proposed</i>
Water operations	4,645,889	4,710,472	2,623,571
Meter maintenance and reading	453,493	453,493	454,797
Billing / Customer service	172,138	172,138	172,041
Sewer operations	0	0	2,097,934
Equipment replacement	68,196	68,196	50,699
Transfer to General Fund	962,000	962,000	962,000
Transfer to Debt Service	315,519	250,936	241,728
<i>Total Water/Sewer Expenditures</i>	\$6,617,235	\$6,617,235	\$6,602,770

c. Town of Vienna: Capital improvement plans

According to the Town's 2008 Comprehensive Plan, the last reported capital expenditures for water and sewer projects occurred in FY2003, in the amount of \$289,949.

The Town appears to have no capital improvement program for its water and sewer systems. The Town's Finance Department reports that it has no information or records pertaining to the lifespan or condition of the system infrastructure. It has no long-term cost estimates for infrastructure repair and replacement (or for operating, regulatory, and other expenses). In November 2007, Fairfax Water, which was then considering the acquisition of the Town's water system, estimated that it would cost more than \$15 to \$20 million to renew the water lines over a 20-year period.

The Town has contracted with a consultant to perform a valuation study of its water and wastewater systems. Among other things, this study will address the physical condition of the existing infrastructure, necessary capital improvements to maintain a targeted level of service on a sustainable basis, and the gap between existing and targeted service levels. The study, which has been undertaken jointly with the City of Falls Church, also addresses issues related to the sale of the systems, including the price at

¹² According to Chapter 4's Detailed Expenditure Report for the water and sewer fund, the water division's share of support activity costs (a new account) is 55.69 percent.

¹³ Town of Vienna FY2010-2011 Proposed Budget at 427, available at http://www.viennava.gov/Town_Departments/budget/budget_10-11/Water%20&%20Sewer%20Fund%20429-456.pdf.

which it would be reasonable for the Town of Vienna to sell its systems to the City. The consultant's report is due in June 2010.¹⁴

d. Town of Vienna: Rate-setting

The Town appears to have conducted no recent studies to support the water rates it charges. When asked to provide information regarding the costs it incurs to provide water service, the Town responded that its "Finance Department has no record of any formal studies being done in regard to the cost of providing water service and corresponding revenue generation." A copy of the Town's response is provided in Attachment 1.

Despite the absence of recent cost studies or support, the Town has increased residential water rates in the last several years. Residential rates per 1,000 gallons were increased by \$0.11 and \$0.55 in 2006 and 2007, respectively.

5. Town of Herndon

Located in western Fairfax County, the Town of Herndon is the third largest town in the Commonwealth of Virginia and home to more than 23,000 residents. The Town of Herndon was providing water service to 5,872 accounts as of April 2010. All but 40 accounts are located within the Town's limits.

a. Town of Herndon: Water supply and plant

The Town is a wholesale customer of Fairfax Water, which supplies the Town with treated water from both the Potomac River and Occoquan Reservoir. The Town's distribution system consists of 88 miles of water mains. Its average demand is 2.3 MGD, with a maximum daily demand of 3.7 MGD.

b. Town of Herndon: Recent budgets

The Town operates its water and sewer systems as enterprise operations in which the costs of providing water and sewer services must be completely financed by user charges. According to the Town's budgets, the water and sewer systems transfer, via the "non-departmental" cost category, funds to the Town's General Fund to pay for indirect General Fund services such as personnel, payroll, legal, purchasing, accounting, engineering, and general public works. The amount of this transfer appears to have dropped substantially after FY2009.

¹⁴ See Request for Proposals: RFP #0105-10-FRS, available at <http://www.fallschurchva.gov/Content/Government/Departments/AdminServ/OpenBids.aspx?cnlid=2055>.

Town of Herndon Water and Sewer Fund Expenditures			
<i>Category</i>	<i>FY2009 Actual</i>	<i>FY2010 Estimated</i>	<i>FY2011 Proposed</i>
Personnel	906,438	929,810	940,140
Operations and maintenance, excluding water purchases	2,459,927	2,664,350	3,043,510
Wholesale water purchase	1,476,294	1,550,000	1,516,000
Capital	886,209	431,130	440,800
Non-departmental	1,107,543	455,600	478,080
<i>Total Expenditures</i>	\$6,836,411	\$6,030,890	\$6,418,530

Town of Herndon Water/Sewer Non-departmental Transfer as Percent of Total Expenditures			
	<i>FY2009 Actual</i>	<i>FY2010 Estimated</i>	<i>FY2011 Proposed</i>
Non-departmental expenditure	\$1,107,543	\$455,600	\$478,080
Total expenditures	\$6,836,411	\$6,030,890	\$6,418,530
Non-departmental as percent of total expenditures	16.2%	7.6%	7.4%

Town of Herndon Water and Sewer Fund Revenues			
<i>Category</i>	<i>FY2009 Actual</i>	<i>FY2010 Estimated</i>	<i>FY2011 Proposed</i>
Water charges	2,233,328	2,820,600	2,970,600
Sewer charges	2,610,977	2,691,700	2,952,200
<i>Total charges</i>	4,844,305	5,512,300	5,922,800
All other revenues	1,265,166	1,325,100	495,730
<i>Total revenues</i>	\$6,109,471	\$6,837,400	\$6,418,530
<i>Total Charges as % of Revenues</i>	79.3%	80.6%	92.3%
<i>Total Water Charges as % of Revenues</i>	36.6%	41.3%	46.3%

The Town's budget materials indicate that operating expenses for water supply and maintenance have risen over the years. Reported expenses per 1,000 gallons of water rose from \$1.90 (FY2006) to \$1.96 (FY2007), to \$2.20 (FY2008), and to \$2.45 (FY2009). It estimates slightly lowers expenses per 1,000 gallons of water of \$2.40 for FY2010 and \$2.37 for FY2011.

c. Town of Herndon: Capital improvement plans

The Town’s FY2010 Adopted Budget reports estimated reserves of \$780,000 as of July 2009 for water maintenance and replacement. Town staff report \$1,410,000 as the cumulative amount held in segregated water reserves for future repair and replacement of distribution system pipes as of April 2010, excluding the current fiscal year’s budgeted expenditures.

d. Town of Herndon: Rate-setting

According to the Town’s Proposed FY2011 Budget, over the past fifteen years the Town has commissioned several comprehensive utility rate studies. The focus of the studies has been the development of a commodity rate and availability fee structure adequate to support the Water and Sewer Fund’s operating expenses, including depreciation and future infrastructure expansion. The most recent study was completed in 2008, according to the Proposed FY2011 Budget.

As a result of this 2008 study, in March 2009, the Town Council approved significant rate adjustments intended to “reestablish fiscal stability to the fund.”¹⁵ These adjustments increased the residential commodity rate (rate per 1,000 gallons of water) by 38 percent, from \$2.10 to \$2.90 effective, July 2009.

The Town appears to anticipate future rate increases. The budget states that, going forward, a utility rate study will be performed each year to determine potential rate adjustments.

D. Comparison of systems

Comparison of Systems					
	<i>Fairfax Water</i>	<i>City of Falls Church</i>	<i>City of Fairfax</i>	<i>Town of Vienna</i>	<i>Town of Herndon</i>
<i>Number of accounts</i>	235,000	35,000	11,765	9,480	5,872
<i>Percent of “outside” customers</i>	N/A	92%	28%	39%	1%
<i>Treatment plants</i>	2	0	1	0	0
<i>Distribution system</i>	3,100 miles	497 miles	200 miles	131 miles	88 miles
<i>System capacity</i>	345 MGD	45 MGD	18 MGD	3.7 MGD	3.7 MGD

¹⁵ Town of Herndon Adopted FY2010 Budget at electronic pages 53 and 82-83 of 510, available at http://www.herndon-va.gov/Content/Government/Town_Budget/FY2010AdoptedBudget.pdf.

Comparison of Systems					
	<i>Fairfax Water</i>	<i>City of Falls Church</i>	<i>City of Fairfax</i>	<i>Town of Vienna</i>	<i>Town of Herndon</i>
<i>Average demand</i>	148 MGD	17.5 MGD	12 MGD	2.5 MGD	2.3 MGD
<i>FY2009 expenditures</i>	\$112,164,000	\$16,941,097	\$8,469,785	Reports on a combined water/sewer basis	
<i>FY2009 revenues</i>	\$160,615,000	\$22,053,699	\$8,940,604	Reports on a combined water/sewer basis	
<i>FY2009 management fee or other General Fund transfer</i>	N/A	\$2,254,041 "Management fee;" now enjoined	\$1,274,891 "Management fee"	\$962,000 (combined water/sewer)	\$1,107,543 (combined water/sewer)

III. Water Rate Structures in Fairfax County

Water systems operating in Fairfax County charge their residential customers on a periodic, or recurring, basis. The recurring period for the five systems operating in the County is a three-month quarter, which reduces meter-reading and billing costs as compared to a monthly period. For most systems, the residential recurring water rates consist of a service fee, a charge for water consumed, and, for some customers, an excess use charge. The systems also charge one-time, or non-recurring, rates for a new connection. These non-recurring charges are typically paid by developers.

A. Residential water rates

1. Quarterly service fee

A service fee generally covers certain fixed costs that are independent of the volume of water consumed. Common fixed costs include those associated with meter reading, billing, and administration. Four of the five water systems serving Fairfax County charge a quarterly service fee. Fairfax Water and the City of Falls Church charge a service fee based on the size of the customer's meter. The Towns of Herndon and Vienna impose a flat fee. The City of Fairfax does not impose a service fee.

Quarterly Service Fee – Single-Family Residential				
	<i>Fairfax Water</i>	<i>City of Falls Church</i>	<i>Town of Herndon</i>	<i>Town of Vienna (All)</i>
Flat fee			\$7.50	\$8.00
5/8" Meter	\$7.30	\$7.47		
3/4" Meter	\$8.75	\$10.17		
1" Meter	\$9.20	\$11.85		
1 1/2" Meter	\$14.00	\$15.24		

2. Consumption charge

Residential customers' water consumption can be billed in a number of ways. Common pricing methods include:

- *Flat fee:* a single charge applicable to all users, regardless of the volume used.
- *Uniform commodity rate:* a constant price per unit, with the unit typically set at 1,000 gallons. This method is considered relatively simple to administer, reasonably equitable because cost increases are proportional to consumption, and does not encourage excessive use.
- *Decreasing rate:* increasingly lower per-volume charges apply as water usage increases. Also known as the “declining block” rate structure, this method is falling into disfavor because it tends to encourage excessive water use.
- *Increasing rate:* increasing higher per-volume charges apply as water usage increases. Also known as the “inclining block” rate structure.

Four of the water systems serving Fairfax County charge uniform commodity rates billed in units of 1,000 gallons. As discussed below, these four systems also charge “excess use” rates for those customers whose usage exceeds a given level. The City of Fairfax has implemented a minimum quarterly rate of \$19.26 for the first 5,000 gallons or less per quarter; all subsequent usage is billed at the rate of \$3.69 per 1,000 gallons. The Town of Vienna has established a water rate structure that includes higher rates for customers located outside the Town’s geographical limits.

Commodity Charge per 1,000 Gallons of Water (except as noted)						
<i>Fairfax Water</i>	<i>City of Falls Church</i>	<i>City of Fairfax</i>		<i>Town of Vienna</i>		<i>Town of Herndon</i>
		<i>1st 5,000</i>	<i>Above 5K</i>	<i>Inside</i>	<i>Outside</i>	
\$1.93	\$3.03	\$19.26	\$3.69	\$3.99	\$4.37	\$2.90

3. Excess use charge

An excess use charge is included in the water rate structures established by Fairfax Water, the City of Falls Church, and the towns of Herndon and Vienna. This charge is assessed in addition to usage charges and applies when a customer’s consumption exceeds the sum of that customer’s average use (established during a specified period) plus an allowance. The charges are seasonal and apply only during the six month June–November period.

The excess use charge ensures that customers responsible for peak water demands through excess demand pay the higher costs that their excessive usage imposes upon

the water system.¹⁶ The cost of providing treatment and distribution capacity for these occasional peaks is much greater than the costs associated with supplying average daily demand. Because commodity rates do not reflect these higher costs, customers using excessive water may not pay their fair share of system costs and could be subsidized by other system customers.

Fairfax Water first implemented a seasonal excess use charge in 1975 to reduce summertime outdoor water use, particularly outdoor watering, which accounted for a large part of its seasonal peak demand. The excess use charge appears to have achieved Fairfax Water’s goal of reducing its peak demand. According to a 1988 study, demand had occasionally exceeded the system’s design peak before the rate was implemented, but not in the following 13 years.

The excess use charge is the result of a calculation involving a customer’s actual and average quarterly consumption, the quarterly allowance, and the excess use rate. While the four systems use different methods for determining these inputs, all follow the same general formula:

$$\text{Excess usage charge} = (\text{Customer's actual quarterly consumption} - [\text{Customer quarterly average usage} + \text{allowance}]) \times \text{excess use rate.}$$

For purposes of determining the customer’s average usage, Fairfax Water, City of Falls Church, and Town of Herndon use the customer’s winter quarter consumption (WQC). The WQC is the water a customer consumes during the winter quarterly billing cycle (February-April), when outdoor water use is minimal. Vienna uses the customer’s quarterly average (CQA), which it calculates each June by dividing the customer’s annual water consumption by four. Vienna assigns customers with less than a year’s usage a town average.

As the following table demonstrates, both the excess use allowance and excess use rate varies per system:

<i>Determinants of the Excess Use Charge</i>			
<i>System</i>	<i>Average</i>	<i>Allowance</i>	<i>Rate per 1,000 Gallons</i>
Fairfax Water	Winter Quarter Consumption	Greater of: (1) WQC + 6,000 gallons, or (2) WQC x 1.3	\$2.70
City of Falls Church	Winter Quarter Consumption	WQC + 6,000 gallons	\$4.62
Town of Vienna (inside and outside)	Customer’s Quarterly Average	Applies if usage exceeds (1) CQA + 6,000 gallons, or (2) CQA + 30	\$2.00

¹⁶ Residential customers with swimming pools located on their properties may qualify for an adjustment to their bills.

<i>Determinants of the Excess Use Charge</i>			
<i>System</i>	<i>Average</i>	<i>Allowance</i>	<i>Rate per 1,000 Gallons</i>
Town of Herndon	Winter Quarter Consumption	Greater of: (1) WQC + 3,000 gallons, or (2) WQC x. 1.1	\$3.50

4. Sample bills

The water charges a typical residential customer would incur, both with and without excess use charges, are included as Attachment 2.

B. Service connection and capacity charges

New connections to a water system impose costs that differ from the consumption-related charges discussed above. These different costs are recovered through a set of non-recurring, or one-time, charges typically paid prior to or at the time service is installed.

Adding new customers to an existing water system requires that the system establish a physical connection between the new locations and the current system. In addition, over time customer growth may trigger the need for a system to expand its treatment facilities and/or increase its purchases of wholesale water. These system expansions incur costs that, generally, are recovered through the following two types of charges:

- *Service connection charge:* A charge designed to recover the cost of tapping into the water main and running a line to the water meter.
- *Capacity or availability charge:* Also frequently referred to as a “capital recovery charge,” this charge is designed to recover the reasonably-anticipated cost of adding capacity to the system.

For over two decades, Draper Aden Associates (DAA) has compiled an “Annual Virginia Water and Wasterwater Rate Report” that includes residential and non-residential rates charged for water and sewer services by public water systems throughout Virginia. DAA’s 2009 (21st) Annual Report includes responses from 153 public water systems. According to DAA, approximately 85 percent of these systems charge a service connection fee, while about 14 percent charge both a service connection fee and availability charge. The remaining one percent of systems assess only an availability charge – that is, the connection fees recover capital costs only.

DAA reports significant variation statewide in connection and availability charges for a typical new connection:

Charges for New Residential Water Service Statewide				
<i>Type of Charge</i>	<i>Average</i>	<i>High</i>	<i>Low</i>	<i>Median</i>
Service connection	\$1,894	\$30,000	\$20	\$1,000
Availability	\$3,562	\$25,754	\$50	\$3,000

The new-service charges assessed by the water systems in 2009 were as follows:¹⁷

Charge for New Residential Water Service – Fairfax County		
	<i>Service Connection</i>	<i>Availability</i>
Fairfax Water	\$8,450	\$3,950
City of Falls Church	\$5,225	\$2,750
City of Fairfax	\$1,979	\$3,500
Town of Vienna	Did not report	Did not report
Town of Herndon	\$3,120	\$4,200

The reported service connection charge for both Fairfax Water and the City of Falls Church is actually comprised of two elements: the service connection charge and a “local facilities” charge, which is a capital expansion charge designed to recover the investment made in local distribution plant necessary to provide service to abutting properties. According to its rate schedules, Fairfax Water will waive the local facilities charge if the applicant for new service has paid the cost of installing the main or agrees to reimburse Fairfax Water for that cost.

IV. The Rate-Setting Framework and Principles

A. State law requires fair and reasonable rates

Title 15.2 of the Virginia Code, pertaining to counties, cities, and towns, authorizes localities, municipalities, counties, and authorities to operate water systems. The specific Code provisions that govern a system’s operations depend on the type of entity involved. Each type of system, however, is subject to the statutory obligation to charge fair and reasonable rates for the services it provides.

Fairfax Water is a water authority established pursuant to the Virginia Water and Waste Authorities Act. Applicable Code provisions governing its operation, including rate-setting, are found in that Act, §15.2-5100 et seq.

The cities of Fairfax and Falls Church and the towns of Herndon and Vienna fall within the statutory definitions of both “locality” and “municipality,” as those terms are defined

¹⁷ This chart is based on information the DAA 2009 Report revised to reflect applicable rate provisions not accounted for in the DAA compilation.

in § 15.2-102.¹⁸ As such, their operation of water systems, including rate-setting, is governed by Chapter 21 of Title 15.2, *Franchises; Sale and Lease of Certain Municipal Public Property; Public Utilities*.

1. Rate-setting by Fairfax Water, a water authority

Under the Virginia Water and Waste Authority Act, Chapter 51 of Title 15.2, the Fairfax Water Board is empowered to set water rates and issue revenue bonds to operate the water system. According to § 15.2-5100, the chapter constitutes “full and complete authority, without regard to the provisions of any other law for the doing of the acts herein authorized, and shall be liberally construed to effect the purposes of the chapter.”

Section 15.2-5114 lists the powers of a water authority like Fairfax Water. Its powers include the power to set fair and reasonable fees:

Fix, charge and collect rates, fees and charges for the use of or for the services furnished by or for the benefit from any system operated by the authority. . . . *Water and sewer connection fees established by any authority shall be fair and reasonable.* Such fees shall be reviewed by the authority periodically and shall be adjusted, if necessary, to assure that they continue to be fair and reasonable. (Emphasis added.)

Section 15.2-5136.B describes in more detail how the authority’s rates and fees shall be set. It provides, in part, that water rates “shall be sufficient to cover the expenses necessary or properly attributable to furnishing the class of services for which the charges are made.”

Section 15.2-5136.D requires that connection fees established by an authority “shall be fair and reasonable.”

2. Rate-setting by municipal water systems

Section 15.2-2111 authorizes a locality to operate and regulate water and sewer systems, and expressly includes within the locality’s power “the fixing of rates or charges” for any municipal water or sewer service provided.

Section 15.2-2143 requires that the locality’s water rates be fair and reasonable. It provides, in part, that:

[e]very locality may provide and operate within or outside its boundaries water supplies and water production, preparation, distribution and transmission systems, facilities and appurtenances for the purpose of

¹⁸ According to that section, "locality" or "local government" means a county, city, or town, as the context may require. "Municipality," "incorporated communities," "municipal corporation," and words or terms of similar import shall be construed to relate only to cities and towns.

furnishing water for the use of its inhabitants; or may contract with others for such purposes and services. *Fees and charges for the services of such systems shall be fair and reasonable* and payable as directed by the locality. (Emphasis added.)

The Virginia Code does not establish a method or standard for calculating the fees charged to the users of the system. Since at least the mid-1970s, the Attorney General of Virginia has taken the position that in the absence of a statutory standard for determining charges, the fees and charges fixed by the locality are subject only to the implicit requirement of reasonableness.

B. No oversight by state utility regulators

The State Corporation Commission (SCC), which regulates public utilities in Virginia, has no jurisdiction over public water systems. It plays no role in setting rates for public water systems and has no authority to review complaints regarding excessive rates or service quality.

Article IX of the Virginia Constitution, pertaining to corporations, establishes the SCC and assigns to it the “the duty of administering the laws made in pursuance of this Constitution for the regulation and control of corporations doing business in this Commonwealth.” Section 7 limits the scope of the SCC’s authority by providing that the terms “corporation” and “company” exclude all municipal corporations, other political subdivisions, and public institutions owned or controlled by the Commonwealth.

In keeping with the constitutional directive, the Virginia Code specifically excludes municipalities and political subdivisions from SCC oversight. As a result, no public water system is included on the list of regulated water companies maintained by the SCC.¹⁹ Consumers interested in filing a complaint with the SCC are notified that the agency “cannot assist you with . . . [c]omplaints regarding municipally-owned utilities.”

C. Legal guidance

1. “Fair and reasonable” rates

As mentioned above, in the absence of a statutory standard for determining charges, the fees and charges set by a locality for its water service are subject only to the implicit requirement of reasonableness.²⁰

The Virginia courts give localities considerable latitude in rate-setting. The law does require, however, that a locality demonstrate a plausible basis supporting the fees and charges it establishes. In addressing fees imposed by a locality for connecting to a

¹⁹ The SCC web-pages are available at http://scc.virginia.gov/pue/water/reg_cos.aspx and <http://scc.virginia.gov/pue/complaint.aspx>.

²⁰ See 1996 Va. Op. Att’y Gen. (Sep. 3, 1996), available at <http://www.oag.state.va.us/OPINIONS/1996opns/sep966.pdf>.

water system, the Supreme Court of Virginia has held that if the reasonableness of a fee imposed for that connection is fairly debatable, then the Court will generally defer to the legislative decision of the governing body.²¹ In determining the reasonableness of the fee, the courts will generally examine whether the evidence establishes a “reasonable correlation . . . between the benefit conferred and the cost exacted.”²²

In determining reasonableness, the term “cost” appears to be broadly construed and not necessarily limited to the actual costs of providing a particular service. For example, the Attorney General of Virginia has found a mark-up of water and sewer construction costs reasonable, when that mark-up reflected incidental costs incurred in securing and storing materials.²³

A March 4, 2010 opinion of the Attorney General of Virginia applied these concepts in the context of a stormwater fee assessed by the city of Chesapeake on U.S. Navy property.²⁴ The city believed its stormwater fee mirrored statutory requirements and thus was not a tax. It further described the fee as nondiscriminatory, reasonable, proportionate to the benefit conferred, and one that produces revenues that do not exceed the cost of the program. The Attorney General’s opinion concluded that, based on the facts before it, the city’s stormwater fee is a service fee rather than a tax. In reaching this conclusion, the Attorney General observed that “the law does not require a precise correlation between regulatory fee collected and regulatory services provided.” He also observed that because the fee is structured to produce revenues that will not exceed the total costs of benefits supplied, it represents a classic regulatory fee, as opposed to a tax.

2. Inside/outside rate differentials

As discussed in greater detail in Section 5.B, slightly over 50 percent of water utilities in Virginia charge a higher rate for customers located outside the corporate limit, as compared to rates charged for customers located inside corporate limits. The practice of charging different water rates to “inside” and “outside” customers is permissible under Virginia law, as long as there is a “reasonable correlation” between the benefit conferred and the cost exacted.²⁵

²¹ See *Tidewater Homebuilders v. City of Va. Beach*, 241 Va. 114, 124, 400 S.E.2d 523,529 (1991).

²² See, *McMahon v. City of Virginia Beach*, 221 Va. 102, 107-08, 267 S.E.2d 130, 134, *cert. denied*, 449 U.S. 954 (1980)

²³ See 1997 Va. Op. Att’y Gen. (Dec. 8, 1997), available at <http://www.oag.state.va.us/Opinions/1997opns/dec976.pdf>, citing 1976-1977 Op. Va. Att’y Gen. 329, 330.

²⁴ See Va. Op. Att’y Gen. 09-098 (March 4, 2010), available at <http://www.oag.state.va.us/OPINIONS/2010opns/09-098-Hallman.pdf>.

²⁵ *Id.*

What constitutes a reasonable correlation is a fact-based determination that requires addressing two separate questions. A reasonable correlation exists if: (1) the facts support a decision to charge outside customers more than inside customers and, if so (2) the facts support the specific outside rate(s) charged.

Localities can offer different types of fact situations to demonstrate that the facts support a decision to charge outside customers more than inside customers. For example, a municipal water system may be able to demonstrate that it incurs higher costs to provide water service to its outside customers, who are located at a greater distance from system facilities than its inside customers. The need to recoup the higher costs associated with outside customers could support a decision to charge higher outside rates. Alternatively, a municipal system may be able to demonstrate that a “rational basis” exists for it to charge outside customers more because they do not contribute directly to tax revenues that would be used to construct and operate a water and wastewater system.²⁶

To demonstrate that the facts support the specific rate(s) charged, the locality must identify a cost-based rationale or evidence underlying those rates. In a December 1997 opinion, for example, the Attorney General of Virginia found that while a rational basis existed to charge outside users more because they did not pay local taxes, it did not necessarily follow that increasing the outside rate by an amount equivalent to the town taxes resulted in a reasonable rate. “The reasonableness of the *amount* of the increased fee in the facts you present must be analyzed independently of the question concerning the reasonableness of imposing an increased fee.”²⁷

These two questions were addressed in the 2009 decision, *Steve Giordano, Jr., et al. v. The Town of Leesburg, Virginia* (Twentieth Judicial Circuit of Virginia) (*Giordano*). At issue in *Giordano* were surcharges assessed by the Town on its outside water and wastewater customers. As a result of the surcharges, the water and wastewater rates paid by the Town’s outside customers were about double those paid by its inside customers. In the *Giordano* decision, the court found that the outside customers imposed higher costs on the system and that, therefore, a rate differential between the two classes of customers was permissible. However, the court concluded that the Town of Leesburg had offered no cost-based rationale or evidence to support the specific level of surcharges it imposed on outside customers. It therefore directed the Town Council to revisit the rates in accordance with persuasive cost evidence presented by the plaintiffs, a group of outside customers who had challenged the rates.

The Town of Leesburg subsequently revised its water rates by increasing the inside rate and decreasing the outside rate. As a result of this change, the rate differential between inside and outside customers served by the Town of Leesburg was reduced from 93 percent to 38 percent.

²⁶ See 1997 Va. Op. Att’y Gen. (Dec. 8, 1997), available at <http://www.oag.state.va.us/Opinions/1997opns/dec976.pdf>.

²⁷ *Id.*

3. Transfer of water revenues

In some instances, a municipal water system may transfer surplus water revenues to its general fund for expenditures unrelated to the provision of water.²⁸ Such a practice appears unlawful for a municipal system that provides water service to customers located outside the municipality's geographical boundaries.

In a recent Fairfax County Circuit Court decision, *Fairfax Water v. Falls Church* (2010) (*Fairfax Water*), the court addressed whether the City of Falls Church could legally set water rates at levels intended to generate a surplus and then transfer those surplus water revenues to its General Fund.²⁹ The transfers, which began in the mid-1990s, were challenged by Fairfax Water in its capacity as customer.³⁰ In January 2010, the court found that the City's practice of transferring surplus water revenues into its general fund amounted to an unconstitutionally void tax on non-residents of the City. The court found that "the profits derived from the rates charged to Fairfax County residents violate the principle of no-taxation-without-representation and, thus, amount to an unconstitutional tax." Based on this finding, the court granted Fairfax Water's request for injunctive relief and enjoined the City of Falls Church from engaging in what it described as "plainly an illegal and unconstitutional practice."

As a result of the injunction, the City appears not to have transferred a budgeted \$2.2 million in surplus water revenues to its general fund in FY2010. The City has appealed the decision to the Supreme Court of Virginia.

V. Additional Considerations in Rate-Setting

A. Industry standards for water system integrity

Performance indicators for water and wastewater utilities nationwide are published by the American Water Works Association (AWWA).³¹ A key AWWA indicator for water system integrity is the number of leaks and breaks a system experiences on an annual basis. The AWWA defines "leak" as a continuous loss of water from a distribution pipeline, valve, hydrant, appurtenance, or service connection, whether that loss is stable or progressive basis. It defines "break" as an abrupt loss of water due to physical damage to one or more of these system components.

²⁸ As discussed on pages 39-40, transfers related to the provision of water may be permissible.

²⁹ The decision and other documents relating to the litigation between Fairfax Water and the City of Falls Church are available at http://www.fcwa.org/current/falls_church_lit.htm or <http://www.fallschurchva.gov/Content/Waterlitigation.aspx?cnlid=3236>.

³⁰ Fairfax Water's headquarters are located at 857 Executive Park Avenue, Fairfax, VA 22031, in an area that Falls Church has traditionally served.

³¹ *Benchmarking – Performance Indicators for Water and Wastewater Utilities*, American Water Works Association (2005).

The AWWA national benchmark for system integrity reflects a simple formula involving two averages. First, a system average is calculated by dividing its annual number of breaks and leaks by the total miles of distribution piping:

$$\frac{\text{total leaks/year} + \text{total breaks/year}}{\text{total miles of distribution piping}}$$

This average is then used to determine the average number of leaks and breaks per 100 miles of distribution piping. AWWA reports that the median annual number of pipeline leaks and breaks for systems with 10,000 to 100,000 customers (like the Cities of Fairfax and Fall Church) is 35 to 39 per 100 miles. For systems of 100,001 to 500,000 customers (like Fairfax Water), the median is 52 leaks and breaks per 100 miles.

System integrity also can be assessed by considering just the number of breaks per 100 miles of distribution piping. According to a 2002 study published by the AWWA Research Foundation, a water utility system should strive for a maximum number of 25 to 30 breaks per 100 miles.³²

Over the last three years, Fairfax Water and the Town of Herndon experienced fewer distribution line breaks per 100 miles than the recommended range. The Cities of Falls Church and Fairfax fell within or below the range in two of the three years. Distribution line breaks in the Town of Vienna’s system exceeded the recommended range in all three years.

<i>Distribution Line Breaks per 100 Miles</i>				
	<i>System Miles</i>	<i>FY2007</i>	<i>FY2008</i>	<i>FY2009</i>
Recommended maximum		25.0 – 30.0	25.0 – 30.0	25.0 – 30.0
Fairfax Water	3,100	12.4	11.5	10.9
City of Falls Church	497	34.6	22.5	28.4
City of Fairfax	200	30.0	40.5	22.5
Town of Vienna	131	33.6	54.2	51.9
Town of Herndon	88	14.8	5.7	11.4

B. Differences between public water systems

Customers may expect water utilities to provide water service at rates that closely approximate one another. However, as Attachments 3 and 4 (discussed below) demonstrate, there are significant rate disparities among public water utilities. These differences in rates can be explained, in large part, due to differences between the systems.

³² Deb, et al., “Prioritizing Water Main Replacement and Rehabilitation,” published by the American Water Works Association Research Foundation (2002).

One significant difference is due to the fact that water utilities differ substantially in the ways they acquire the water they sell and in the costs they incur for it. While many customers may view water utilities as inherently similar because they provide the same product – water – the differences between the utilities is actually greater. In Fairfax County, for example, each of the five water systems obtains its water in a manner, and at a cost, that differs from the others:

- Fairfax Water obtains its water from two intakes on the Potomac River and operates treatment facilities along both the Potomac River and the Occoquan Reservoir.
- The City of Falls Church purchases treated water on a wholesale basis primarily from the Washington Aqueduct Division of the U.S. Army Corps of Engineers (WAD). WAD obtains its water from the Potomac River and supplies Falls Church with water treated at WAD's Dalecarlia plant.
- The City of Fairfax obtains its water from Goose Creek Reservoir in Loudoun County, which has a capacity of between 200 and 300 million gallons. It operates a treatment facility at the reservoir, which is located 22 miles northwest of the City. The City's back-up reservoir for use in droughts is Beaverdam Creek Reservoir, which has a 1.3 billion gallon capacity.
- The Town of Vienna purchases treated water on a wholesale basis from the City of Falls Church. It supplements those purchases with water from two private wells located within the Town.
- The Town of Herndon purchases treated water on a wholesale basis from Fairfax Water.

Another significant difference between systems relates to size and the associated economies of scale, which are the cost advantages that a business obtains due to larger size. Generally, economies of scale cause a producer's average cost per unit to fall as scale is increased. A review of economic studies, including economic studies affecting cost of service for water utilities, suggests that there are at least two distinct economies of scale in the water supply business: economies in capital equipment and economies in business operations. Listed below are various factors that contribute to these economies of scale:

- Economies in Capital Equipment
 - System growth rate
 - Size and scale of system
 - Operating efficiencies
 - Age of plant
 - System capital improvement requirements and investment rate
- Economies in Business Operations
 - Purchasing and technology
 - Billing

- Testing
- Financial, including debt service
- Personnel
- Water source
- Ancillary sales of water

Some of these factors are distinct and some of them are inter-related, but in the aggregate they tend to have a significant impact on the cost of service and the resulting rates charged by one water system versus another.

A recent study of water supply costs of production indicates that average unit costs fall as system size increases for all six factors of production: (1) capital; (2) labor; (3) materials; (4) energy; (5) outside services; and (6) other costs.³³ This study suggests that larger systems may be relatively better than smaller systems at bargaining and receiving outside services and materials for a lower cost.

While it may be difficult for water utility customers to understand the complexities affecting individual water systems' operations and economics, the existence and expectation of legitimate rate differentials among water utility systems is well documented and accepted within the industry.

VI. Water Utility Rates and Services in Fairfax County

A. Statewide and regional residential water rate comparisons

As noted above, Draper Aden Associates (DAA) compiles an "Annual Virginia Water and Wasterwater Rate Report" that includes residential and non-residential rates charged for water and sewer services by public water systems throughout Virginia. Residential water rate information from the 2009 Report is included in Attachments 3 and 4. Both attachments list public water systems statewide. Attachment 3 provides, for each system, the monthly cost to a residential customer for 5,000 gallons of water. Attachment 4 provides the monthly cost of 5,000 gallons of water for those systems that charge both inside and outside rates, as well as the differential between the inside and outside rates.

DAA's 2009 report lists residential water rate information from 153 respondents statewide. The report demonstrates that residential water rates vary widely throughout the state. The bill to a residential customer consuming 5,000 gallons of water could range from a low of \$8.55 per month to a high of \$77.57 per month.³⁴

³³ "Economies of Scale and Technical Efficiency in Community Water Systems," Resources for the Future, pp. 2, 17-18 (2004).

³⁴ The DAA report provides no additional information or context with which to evaluate these rates, however.

- Monthly residential rate for 5,000 gallons – uniform and inside rates:
 - Low: \$ 8.55 (Town of Alta Vista)
 - High: \$ 77.57 (Town of Middleburg)
 - Average \$ 25.61

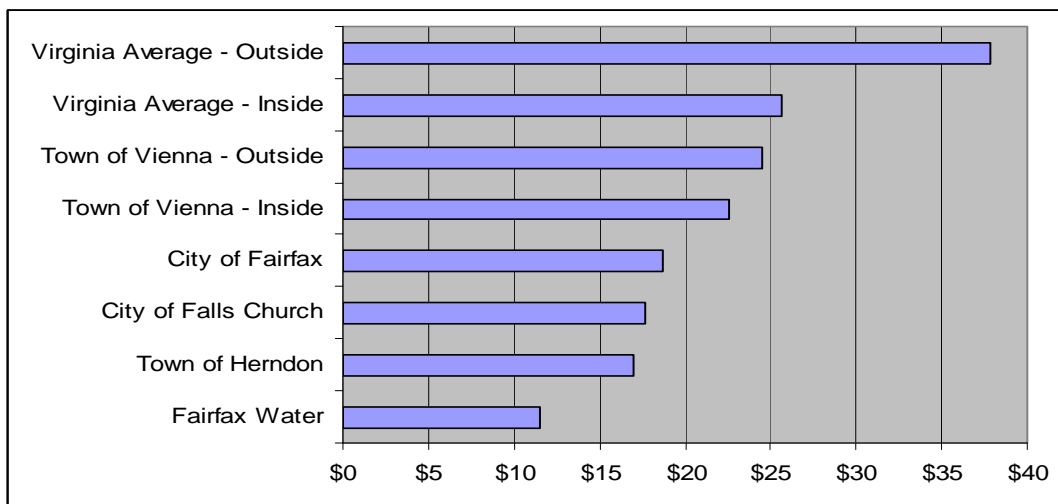
- Monthly residential rate for 5,000 gallons – outside rate:
 - Low: \$ 13.00 (Town of Courtland)
 - High: \$ 110.57 (Town of Middleburg)
 - Average: \$ 37.86

Based on rate information in the DAA 2009 report, the statewide average rate for water service is \$25.61 per month (including inside rates) and the average outside rate is \$37.86.

The five water utilities in Fairfax County charge rates below the statewide averages. The average rates for water utilities in Fairfax County and the State of Virginia (for 5,000 gallons per month) are listed below in descending order.

- State of Virginia \$37.86 (outside rate)
- State of Virginia \$25.61 (including inside rate)
- Town of Vienna \$24.52 (outside rate)
- Town of Vienna \$22.62 (inside rate)
- City of Fairfax \$18.72
- City of Falls Church \$17.64
- Town of Herndon \$17.00
- Fairfax Water \$11.50

These average rates (for 5,000 gallons per month) are shown in descending order, below:



Comparisons to other parts of Virginia, however, should take into account the differing economies of scale of different systems. The water systems serving the urban areas of

Northern Virginia tend to be larger than municipal systems in more rural locations; larger economies of scale should generally be associated with lower costs.

Attachment 5 is a chart prepared by Fairfax Water in 2009 that compares rates charged by 17 water systems in the region. As of July 2009, the regional average quarterly cost to a residential customer of 24,000 gallons of water (8,000 gallons per month) was \$85.65. Residential customers of Fairfax Water paid \$50.97, the lowest cost in the region. The highest cost in the region as of July 2009 was incurred by the Town of Leesburg's outside residential customers, who paid \$162.06.³⁵

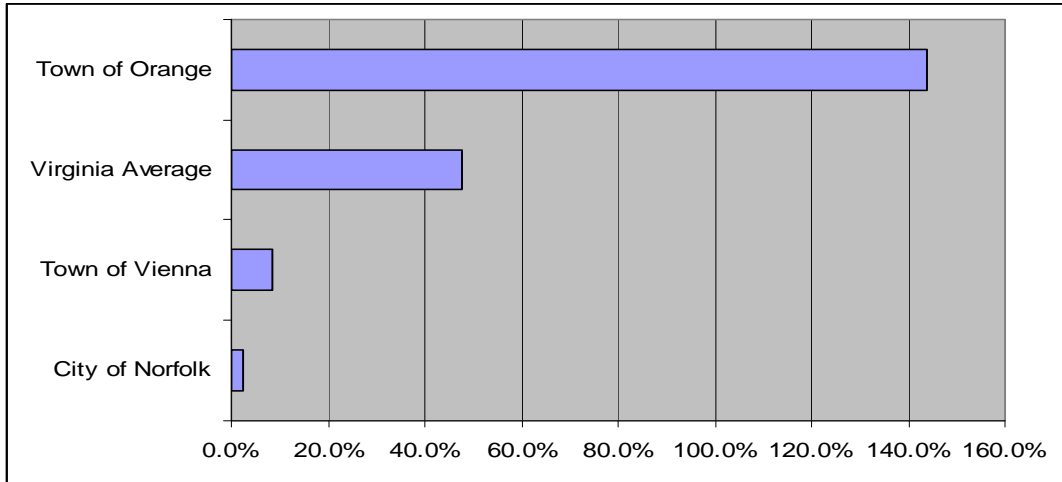
In July 2009, residential water rates charged by Fairfax Water, the City of Falls Church, and the Town of Herndon fell below the region's average water rate. The Town of Vienna's water rates were among the highest in the region.

B. Inside/outside rate differentials

Just over half of the public water systems listed in the DAA 2009 report – 81 of 153 – reported that the water rates charged to a customer depended on whether that customer was located inside or outside municipal boundaries. In all cases the water rates charged to customers located outside municipal boundaries were higher than the rates charged to residents, or those located inside municipal boundaries.

Statewide, the average differential between inside and outside rates for 2009 is 53.5 percent, as shown on Attachment 4. The Town of Orange has the largest differential between inside and outside rates (144 percent), while the City of Norfolk has the smallest. Nine public water systems reported a differential of 100 percent or more.

³⁵ As noted, the 2009 *Giordano* decision struck down the Town of Leesburg's higher outside water rates, concluding that they were not supported by any cost-based rationale or evidence. The Town of Leesburg subsequently revised its water rates by increasing the inside rate and decreasing the outside rate; as a result of this change, the rate differential between inside and outside customers was reduced from 93 percent to 38 percent. The chart prepared by Fairfax Water reflects Leesburg's pre-*Giordano* outside rates.



Of the four municipal water systems in Fairfax County, only the Town of Vienna has established a rate structure that includes a higher rate for customers located outside municipal boundaries. The residential commodity rate (rate per 1,000 gallons consumed) the Town charges customers located outside its corporate limits is 9.5 percent higher than the rate it charges Town residents.

Attachment 4 contains a list of public water systems in Virginia that charge both inside and outside rates and the differential between each system’s inside and outside rates. These rates include both a service charge and commodity charges. As shown on the attachment, the Town’s 8.4 percent differential is among the lowest in the state.³⁶ Of the 81 municipal water systems that reported rate differentials, 76 systems reported a differential greater than the 8.4 percent charged by the Town of Vienna.

While its differential is very low in comparison to the rate differentials of other public water systems in Virginia, the Town appears to have no cost basis for its higher outside rate. As noted previously, when asked to provide information regarding the costs it incurs to provide water service, the Town responded that its “Finance Department has no record of any formal studies being done in regard to the cost of providing water service and corresponding revenue generation.” A copy of the Town’s response is provided in Attachment 1.

C. Transfer of water revenues

Fairfax Water retains excess revenues within its system for use on water activities including facility renewal/replacement and other capital improvements.

³⁶ This rate differential is slightly lower than the 9.5 percent cited previously. The 9.5 percent differential pertains only to the Town’s commodity charge (rate per 1,000 gallons). The 8.4 percent differential reflects a rate that includes both the commodity charge and quarterly service fee.

As discussed previously, for many years the City of Falls Church routinely inflated its water rates and then transferred surplus water revenues derived from those inflated rates to the City's General Fund via a "management fee." By 2002, the annual transfer reached \$4.8 million, or about 43 percent of the system's operating revenues. Annual transfers declined thereafter, reaching about 15 percent of system operating revenues by FY2007. A sampling of these transfers shows this progression:

City of Falls Church – Management Fee Transfers to General Fund			
<i>Year</i>	<i>Operating Revenues</i>	<i>Transfer to General Fund</i>	<i>Transfer as % of Op. Revenues</i>
FY2008	\$19,705,069	\$2,926,174	15%
FY2007	\$19,385,666	\$2,905,121	15%
FY2006	\$18,326,495	\$4,625,874	25%
FY2005	\$14,554,007	\$4,625,874	32%
FY2004	\$12,528,123	\$4,625,874	37%
FY2003	\$12,583,244	\$4,625,874	37%
FY2002	\$11,297,328	\$4,878,754	43%

In January 2010, the Fairfax County Circuit Court held that that the City's practice of transferring surplus revenues from the sale of water and related service into its general fund amounted to an unconstitutionally void tax on non-residents of the City. The court enjoined the City from transferring surplus water revenues to the City's general fund, a practice that it described as plainly "illegal and unconstitutional." As a result of the injunction, the City appears not to have transferred a budgeted \$2.2 million in surplus water revenues to its general fund in FY2010 and has budgeted \$0 as its proposed FY2011 transfer. (However, the City proposes to increase the water system's contribution to its capital improvement fund by an amount close to the previously-budgeted transfer – an increase in the budgeted CIP transfer amount of about 44 percent. It also proposes to increase by 11 percent the amount it transfers to the City's General Fund for "administrative" costs.) The City's appeal of this decision is pending before the Virginia Supreme Court.

In enjoining the City's practice of transferring surplus water revenues, the *Fairfax Water* court specifically prohibited the system's payment of the purported "management fee."

The City of Falls Church is enjoined from transferring any moneys from its water fund to its general fund for purposes unrelated to the water system, including the "management fee" transfer for the City's Fiscal Years 2009 and 2010. This restriction shall not prevent the City from transferring from the water fund to the general fund an amount corresponding to compensation for reasonable direct and indirect costs associated with operating the water system, and a reasonable payment in lieu of taxes

(PILOT) with regard to water system property owned by the City within its corporate limits.³⁷

The court apparently singled out the City’s “management fee” because, as it observed in footnote 3 of its Letter Opinion, “[a]lthough the City calls the current profit transfer a ‘management fee,’ its corporate designee admitted that the ‘management fee’ does not pay for any management at all because all such management costs are included under ‘administration.’”

Like the City of Falls Church, the City of Fairfax and Towns of Vienna and Herndon provide water service to non-residents. Also like the City of Falls Church, each transfers water revenues to its municipal general fund. Open questions, however, include whether the systems are transferring surplus water revenues generated by inflated water rates, as was the case with the City of Falls Church, and whether the transfers are used for purposes unrelated to the provision of water.

Direct and Indirect Transfers to Municipal General Funds			
	Water Only	Combined Water/Sewer	
	<i>City of Fairfax</i>	<i>Town of Vienna</i>	<i>Town of Herndon</i>
<i>Description</i>	Management fee	General Fund transfer	Non-departmental expenditure
<i>FY2009 Actual</i>			
Direct/indirect transfer	\$1,274,891	\$962,000	\$1,107,543
Percent of total expenditures	15.1%	14.5%	16.2%
<i>FY2010 Estimated</i>			
Direct/indirect transfer	\$1,338,638	\$962,000	\$455,600
Percent of total expenditures	16.4%	13.9%	7.6%
<i>FY2011 Proposed</i>			
Direct/indirect transfer	\$1,332,168	\$962,000	\$478,080
Percent of total expenditures	7.6%	14.6%	7.4%

While the *Fairfax Water* court enjoined the City of Falls Church from transferring surplus water revenues, including its “management fee,” it did not prohibit the transfer of water revenues “in an amount corresponding to compensation for reasonable direct and indirect costs associated with operating the water system, and a reasonable payment in lieu of taxes (PILOT) with regard to water system property owned by the City within its corporate limits.” With this language, the court delineated permissible transfers for a municipal water system whose customers include those located outside the municipality’s geographical limits.

Recent rate-setting studies and analyses are required to determine whether and to what extent the amounts transferred by the City of Fairfax and the Towns of Vienna and

³⁷ Final Decree, *Fairfax Water*, at ¶ 2.

Herndon constitute permissible transfers to their General Funds. Of the three municipalities operating water systems, only the Town of Herndon has undertaken a recent rate study. That rate study, which dates to November 2008, may have contributed to the significant decline in non-departmental expenditures from FY2009 to FY2010, from \$1,107,543 (actual) to \$455,600 (estimated). The City of Fairfax has undertaken financial analyses of the rate impact of necessary improvements, but it has not undertaken a rate study in years. The Town of Vienna has no record of any formal studies regarding the cost of providing water service.

FINDINGS

Background

1. Residents of Fairfax County receive water from five water systems: Fairfax Water, the City of Falls Church, the City of Fairfax, the Town of Vienna, and the Town of Herndon.
2. The service territories of the five water systems operating in Fairfax County reflect the legal rights enjoyed by cities and towns and developments since Fairfax Water's 1957 creation.
3. Municipally-owned water systems have an exclusive right to provide service to customers located inside their geographical boundaries. In Fairfax County, certain territory located outside a municipality's boundaries has been considered an "interface area," defined as an area of overlapping authority where water service might legitimately be provided by either Fairfax Water or the municipal water system. Such interface areas are ultimately subject to the Board of Supervisors' decision to create exclusive service areas under authority vested in the Board under Va. Code Ann. §§ 15.2-2111 and 15.2-2112.
4. In 2007 and 2008, federal courts ruled that Fairfax Water is legally authorized to provide water service anywhere it can in Fairfax County, and that the City of Falls Church did not have an exclusive service area in the eastern portion of the County. In early 2010, Fairfax Water and the City of Falls Church agreed that each shall have a full, free, and fair opportunity to provide water service within the interface area that is the City's traditional service area in Fairfax County.
5. Fairfax Water is the largest provider of water service to Fairfax County customers, with about 235,000 accounts. It operates two water treatment plants and a distribution system consisting of about 3,100 miles of water mains. Fairfax Water returns all water system revenues to the water system to support infrastructure reinvestment and system improvements. Fairfax Water tends to propose and adopt modest annual increases in its water rates effective in April of each year.
6. The City of Falls Church is the second-largest provider of water service to Fairfax County customers, with about 35,000 accounts. About 92 percent of its water customers are located outside City limits. Falls Church purchases its water supply on a wholesale basis and operates distribution system of about 497 miles of water mains. Until FY2010, the City's water system transferred surplus water revenues to the City's General Fund. Although this practice was enjoined in 2010, the City has no plans to reduce water rates.
7. The City of Fairfax provides water service to about 11,765 customers located in the City and portions of Fairfax County contiguous to the City. The City operates its own treatment plant in Loudoun County and approximately 200 miles of water mains. The City's water system transfers water revenues to the City's General Fund through

payment of a management fee and other administrative expenditures. Due to escalating capital costs, the City anticipates annual rate increases for the foreseeable future.

8. The Town of Vienna provides water service to about 9,480 customers located in the Town and portions of Fairfax County contiguous to the Town. About 9,034 of the system's customers are residential and about 39 percent of these customers reside outside the Town limits. The Town is currently a wholesale customer of the Falls Church water system and operates a distribution system of about 131 miles. On an annual basis, the Town transfers about 15 percent of its water and sewer revenues to the Town's General Fund. The Town appears to have no capital improvement program for its water and sewer systems and has no record of recent studies to support either the water rates it charges or the water rate increases it adopted in 2006 and 2007.
9. The Town of Herndon provides water service to about 5,872 customers. It is a wholesale customer of Fairfax Water and operates a distribution system consisting of approximately 88 miles of water mains. The Town's water system transfers revenues to the Town's General Fund through its payment of non-departmental expenditures. Beginning in 2006, the Town has incrementally increased its water and sewer commodity rates by three percent each year based, in part, on a comprehensive utility rate study conducted in 2005. A utility rate study will be performed each year to determine potential rate adjustments.

Fees and Rates

10. Title 15.2 of the Virginia Code authorizes localities, municipalities, counties, and authorities to operate water systems. The specific Code provisions that govern a system's operations depend on the type of entity involved. Each type of system, however, is subject to the statutory obligation to charge fair and reasonable rates for the services it provides.
11. In the absence of a statutory standard for determining charges, the fees and charges set by a locality for its water service are subject only to the implicit requirement of reasonableness.
12. The Virginia courts give localities considerable latitude in rate-setting. The law does require, however, that a locality demonstrate a plausible basis supporting the fees and charges it establishes. In determining the reasonableness of the fee, the courts will generally examine whether the evidence establishes a "reasonable correlation . . . between the benefit conferred and the cost exacted."
13. Water systems operating in Fairfax County charge their residential customers on a quarterly basis. For most systems, the residential recurring water rates consist of a service fee, a charge for water consumed (the commodity charge), and, for some customers, an excess use charge. Commodity charges vary among the systems,

ranging from a low of \$1.93 (Fairfax Water) to \$4.37 (Town of Vienna – outside customers).

14. All five water systems charge new customers both service connection and availability charges.

Rate Differentials among Water Utilities

15. The existence and expectation of legitimate rate differentials among water utility systems is well documented and accepted within the industry.
16. There are significant rate disparities among public water utilities in Fairfax County. These differences in rates can be explained, in large part, due to significant diversities among the systems. Differences in economies of scale and size, sources of supply, age, growth rates of systems, technology, technical expertise, access to capital, among others, contribute to a significant range in costs and rates.
17. A statewide compilation of water rates indicates that the bill to a residential customer consuming 5,000 gallons of water could range, statewide, from a low of \$8.55 per month to a high of \$77.57 per month.
18. The statewide average rate for water service is \$25.61 per month (including inside rates) and the average outside rate is \$37.86. Each of the five water utilities in Fairfax County charge rates below the statewide averages.
19. As of July 2009, the regional average quarterly cost to a residential customer of 24,000 gallons of water (8,000 gallons per month) was \$85.65. Fairfax Water charged the lowest rates in the region, at \$50.97. Fairfax Water, the Town of Herndon, and the City of Falls Church fell below the region's average water rate. The Town of Vienna's water rates were among the highest in the region.

Rate Differentials: Inside versus Outside Corporate Limits

20. The practice of charging different water rates to "inside" and "outside" customers is permissible under Virginia law, as long as there is a "reasonable correlation" between the benefit conferred and the cost exacted.
21. Localities can offer different types of situations to demonstrate that the facts support a decision to charge outside customers more than inside customers. To demonstrate that the facts support the specific rate(s) charged, the locality must identify a cost-based rationale or evidence underlying those rates.
22. Of the four municipal water systems in Fairfax County, only the Town of Vienna has established a rate structure that includes a higher rate for customers located outside municipal boundaries. The Town currently charges customers located inside Town limits \$3.99 per 1,000 gallons of water but charges its "outside" customers \$4.37 per 1,000 gallons of water.

23. At least 81 public water systems in Virginia charge higher rates to customers located outside municipal borders, as compared to the rates charged to residents. The average differential between reported inside and outside rates for 2009 is 54 percent.
24. Although Vienna's inside/outside rate differential is significantly lower than the statewide average, the Town appears to have no cost basis for its higher outside rate. The Town's Finance Department has no record of any formal studies conducted to set the rate differential.

Transfer of Revenues from Water Fund to General Fund

25. In *Fairfax Water v. Falls Church* (2010) (*Fairfax Water*), the City of Falls Church's practice of transferring surplus revenues from the sale of water and related service into its General Fund was found to be an unconstitutionally void tax on non-residents of the City. The decision has been appealed to the Virginia Supreme Court.
26. The water system operated by the City of Falls Church routinely transferred surplus revenues from its water system to its General Fund for use on projects and activities unrelated to water. In FY2008, Falls Church transferred about 15 percent of its water-system operating revenues to its General Fund.
27. As a result of an injunction issued in early 2010, the City of Falls Church appears to have ended its practice of transferring surplus water revenues. The City has not proposed water rate reductions, however, and apparently plans to keep those revenues within the water system. It is also contemplating future rate increases in its commodity charges in FY2012 and thereafter.
28. The City of Fairfax and the Towns of Vienna and Herndon transfer water revenues to their respective General Funds. Rate-setting studies and analyses are required to determine whether these transfers are permissible.

System Maintenance and Integrity

29. A key indicator for water system integrity is the number of leaks and breaks a system experiences on an annual basis. The American Water Works Association (AWWA) Research Foundation recommends 25 to 30 breaks per 100 miles. Over the last three years, Fairfax Water and the Town of Herndon experienced fewer distribution line breaks per 100 miles than the recommended range. The Cities of Falls Church and Fairfax fell within or below the range in two of the three years. Distribution line breaks in the Town of Vienna's system exceeded the recommended range in all three years.

RECOMMENDATIONS

Water systems serving Fairfax County customers should abide by the following principles, which the Commission hereby recommends:

1. Water systems should periodically undertake a condition, integrity, and valuation study to fully assess the system, evaluate critical factors and to update cost estimates.
2. Water systems should fund and maintain adequate system reserves in a segregated fund. The fund should be adequate for future renewals/replacements and capital improvements, including those related to water system infrastructure.
3. Water rates should be reasonably based and set on a well-substantiated cost basis that reflects the direct and indirect costs of the water system, as well as necessary contributions to Water Fund reserves.
4. A water system should charge all similarly-situated customers the same rates. A municipal water system that provides water service to customers located outside its boundaries (“outside customers”) should charge its outside customers a higher rate only if that rate reflects a reasonable correlation between the benefit conferred upon its outside customers and the higher cost exacted from them.
5. Neither water revenues nor water system reserves should be subject to transfer by a municipally-owned water system to the municipality’s General Fund to be applied towards expenditures unrelated to water utility services.
6. Water system study findings and cost estimates should be routinely updated and discretely reflected in the provider’s budget documents, with details described on a segregated basis in supporting budget documents, including:
 - a. annual operating and maintenance budget;
 - b. annual budget for repair and replacement;
 - c. annual budget component for long-term capital improvements;
 - d. annual allocation for long-term reserves; and
 - e. rate-setting to meet current and long-term needs.
7. Water system providers should attain, at a minimum, water utility distribution system integrity rates that are at or near nationwide median standards, as published by the American Water Works Association.


ATTACHMENT 1


Response of Town of Vienna Finance Department to Staff Request

MEMORANDUM

DATE: August 20, 2009

TO: Steve Sinclair and Randall Scott,
Department of Cable Communications
And Consumer Protection

THROUGH: Town Manager 

FROM: Director of Finance, Town of Vienna, VA 

SUBJECT: Information Request Number 2

The Town's Finance Department has no record of any formal studies being done in regard to the cost of providing water service and corresponding revenue generation.

C: Director of Public Works

3

ATTACHMENT 2

Sample Residential Water Bills

Sample Residential Quarterly Water Bill
 Quarterly Consumption of 19,000 Gallons
 No Excess Use - No Peak Charges

<u>Jurisdiction</u>	<u>Gallons</u>	<u>Rate per 1,000 Gallons</u>	<u>Bill Components</u>		<u>Total Bill</u>
			<u>Usage Charge</u>	<u>Service Charge</u>	
Fairfax Water	19	\$1.93	\$36.67	\$7.30	\$43.97
City of Fairfax	5	Flat Fee	\$19.26		
	14	\$3.69	\$51.66		
			\$70.92	\$0.00	\$70.92
City of Falls Church	19	\$3.03	\$57.57	\$7.47	\$65.04
Town of Vienna - Residents	19	\$3.99	\$75.81	\$8.00	\$83.81
Town of Vienna - Nonresidents	19	\$4.37	\$83.03	\$8.00	\$91.03
Town of Herndon	19	\$2.90	\$55.10	\$7.50	\$62.60

NOTES:

- 1) Service charge assumes a 5/8" meter.
- 2) Total bill excludes applicable sewer charges and taxes, if any.

ATTACHMENT 2.B

Sample Residential Quarterly Water Bill
Excess Use and Peak Charges

Quarterly Winter Consumption of 19,000 Gallons - Quarterly Summer Consumption of 30,000 Gallons

<u>Jurisdiction</u>	<u>Peak Determinants</u>		<u>30,000 Gallon Consumption</u>				<u>Bill Components</u>				
	<u>1,000 Gallons Baseline Allowance</u>		<u>Allowed Usage Gallons</u>	<u>Usage Rate</u>	<u>Plus</u>	<u>Peak/Excess Gallons</u>	<u>Rates</u>	<u>Usage Charges</u>	<u>Peak Charges</u>	<u>Service Charge</u>	<u>Total Bill</u>
Fairfax Water	19	6	25 @	\$1.93	+	5 @	\$2.70	\$48.25	\$13.50	\$7.30	\$69.05
City of Fairfax	N/A	N/A	1st 5 20 @	\$19.26 \$3.69				\$19.26 \$73.80 \$93.06	\$0.00	\$0.00	\$93.06
Falls Church	19	6	25 @	\$3.03	+	5 @	\$4.62	\$75.75	\$23.10	\$7.47	\$106.32
Vienna - Resident	19	6	25 @	\$3.99	+	5 @	\$2.00	\$99.75	\$10.00	\$8.00	\$117.75
Vienna - Nonresid	19	6	25 @	\$4.37	+	5 @	\$2.00	\$109.25	\$10.00	\$8.00	\$127.25
Herndon	19	3	22 @	\$2.90	+	8 @	\$3.50	\$63.80	\$28.00	\$7.50	\$99.30

NOTES:

- 1) Peak/Excess Use Calculation: (Consumption - [Baseline + Allowance]) x Excess Rate
- 2) Service charge assumes a 5/8" meter.
- 3) Total bill excludes applicable sewer charges and taxes, if any.

ATTACHMENT 3

Residential Rates Charged by Public Water Systems Statewide
Monthly Cost of 5,000 Gallons of Water

DRAPER ADEN 2009 WATER RATE SURVEY: VIRGINIA RESIDENTIAL
Monthly Rate Based on Consumption of 5,000 Gallons

	Locality	Rate: 5K Gallons/month		% Increase Outside v. Inside	Last Rate Chg
		Inside	Outside		
1	Altavista, Town of	\$8.55	\$17.19	101.1%	2007
2	Colonial Heights, City of	\$10.70	\$13.53	26.4%	2008
3	Courtland, Town of	\$11.00	\$13.00	18.2%	1994
4	Fairfax Water	\$11.50			2009
5	King George County	\$12.30			2009
6	Harrisonburg, City of	\$13.08	\$21.46	64.1%	2008
7	Warrenton, Town of	\$13.30	\$19.95	50.0%	2003
8	Tappahannock, Town of	\$13.63	\$20.44	50.0%	2009
9	Stafford County	\$13.77			2008
10	Colonial Beach, Town of	\$14.10	\$21.15	50.0%	2009
11	James City Service Authority	\$14.25			2008
12	Dayton, Town of	\$14.70			2009
13	Rockingham County	\$14.89	\$23.75	59.5%	2008
14	Craigsville, Town of	\$15.00			2009
15	Louisa County Water Authority (NEC)	\$15.00			2007
16	Louisa County Water Authority (Zion)	\$15.00			2003
17	Sussex Service Authority	\$15.00			1987
18	Chesterfield County	\$15.10			2009
19	Vinton, Town of	\$15.35	\$16.19	5.5%	2008
20	Loudoun Water	\$15.41			2008
21	Lynchburg, City of	\$16.12			2009
22	Timberville, Town of	\$16.55			2009
23	Broadway, Town of	\$16.65			2009
24	Galax, City of	\$16.67	\$33.33	99.9%	2006
25	Front Royal, Town of	\$16.69	\$33.38	100.0%	1999
26	Fredericksburg, City of	\$16.94			2009
27	Chatham, Town of	\$17.00	\$26.50	55.9%	2009
28	Herndon, Town of	\$17.00			2009
29	Arlington County	\$17.10			2009
30	Radford, City of	\$17.45			2009
31	Lexington, City of	\$17.49	\$20.99	20.0%	2009
32	Exmore, Town of	\$17.50	\$20.50	17.1%	2001
33	Manassas, City of	\$17.60			2009
34	Falls Church, City of	\$17.64			2007
35	Christiansburg, Town of	\$17.75	\$26.63	50.0%	
36	New Market, Town of	\$17.80	\$31.11	74.8%	2009
37	Chase City, Town of	\$17.94	\$26.91	50.0%	2008
38	Rocky Mount, Town of	\$17.95	\$35.90	100.0%	2007
39	Farmville, Town of	\$17.96	\$26.94	50.0%	2007
40	Dendron, Town of	\$18.00	\$25.00	38.9%	2005
41	Bedford, City of	\$18.20	\$27.06	48.7%	2009
42	Prince George County	\$18.25			2008
43	Leesburg, Town of	\$18.30	\$34.55	88.8%	2009
44	Pulaski, Town of	\$18.50	\$34.00	83.8%	2007
45	Stanley, Town of	\$18.50	\$22.50	21.6%	2009
46	Danville, City of	\$18.59			2006

47	Fairfax, City of (See Note A)	\$18.72			2009
48	Bridgewater, Town of	\$18.82	\$24.86	32.1%	2009
49	Covington, City of	\$19.00	\$33.00	73.7%	2009
50	Lawrenceville, Town of	\$19.00	\$33.25	75.0%	2008
51	Rapidan Service Authority	\$19.50			2001
52	Martinsville, City of	\$19.61	\$29.41	50.0%	2007
53	Dinwiddie County Water Authority	\$19.87			2008
54	Saint Paul, Town of	\$19.88	\$36.38	83.0%	2006
55	Henrico County	\$19.94			2008
56	Claremont, Town of	\$20.00			2009
57	Goshen, Town of	\$20.00			2007
58	Salem, City of	\$20.15			2005
59	Spotsylvania County	\$20.29			2008
60	Blacksburg, Town of	\$20.45	\$35.76	74.9%	2009
61	Chincoteague, Town of	\$20.64			2009
62	Waynesboro, City of	\$20.65	\$38.30	85.5%	2009
63	Kilmarnock, Town of	\$20.75	\$31.12	50.0%	2006
64	Frederick County Sanitation Authority	\$21.03			2009
65	Bristol Virginia Utilities Board	\$21.33	\$32.00	50.0%	2009
66	Pulaski County Public Service Auth'ty	\$21.50			2002
67	Hillsville, Town of	\$21.83	\$31.07	42.3%	2005
68	Pamplin, Town of	\$22.36			2006
69	Smithfield, Town of	\$22.40	\$25.60	14.3%	2005
70	Vienna, Town of (See Note B)	\$22.62	\$24.52	8.4%	2007
71	Remington, Town of	\$23.00	\$38.50	67.4%	2007
72	Mount Jackson, Town of	\$23.90	\$35.85	50.0%	2009
73	Alberta, Town of	\$23.96	\$47.92	100.0%	2008
74	Halifax County Service Authority	\$24.00	\$37.75	57.3%	2009
75	Dublin, Town of	\$24.25	\$33.00	36.1%	2003
76	Gretna, Town of	\$24.30	\$48.60	100.0%	2008
77	Buena Vista, City of	\$24.40			2006
78	Virginia Beach, City of	\$24.60			2009
79	Greensville County Water/Sewer Auth.	\$24.66			2009
80	Richlands, Town of	\$24.75	\$33.00	33.3%	2006
81	Rural Retreat, Town of	\$24.75	\$43.13	74.3%	2009
82	Crewe, Town of	\$25.00	\$26.30	5.2%	2006
83	Independence, Town of	\$25.00	\$31.25	25.0%	2007
84	Norfolk, City of	\$25.00	\$25.65	2.6%	2009
85	Amherst, Town of	\$25.25	\$46.50	84.2%	2009
86	Pennington Gap, Town of	\$25.40	\$29.40	15.7%	1997
87	Keysville, Town of	\$25.50	\$51.00	100.0%	2003
88	Augusta County Service Authority	\$25.62			2009
89	Emporia, City of	\$25.70			2008
90	New Kent County	\$25.87			2009
91	Glen Lyn, Town of	\$26.00	\$32.50	25.0%	2007
92	Kenbridge, Town of	\$26.00	\$34.43	32.4%	2007
93	Rockbridge Cnty Public Svc Authority	\$26.05			2008
94	Floyd County Public Service Authority	\$26.20			2008
95	Wytheville, Town of	\$26.20	\$52.40	100.0%	2009
96	Orange, Town of	\$26.60	\$64.90	144.0%	2006
97	Franklin, City of	\$26.77	\$33.54	25.3%	2008
98	Coeburn, Town of	\$26.98	\$37.85	40.3%	2005
99	Luray, Town of	\$27.00	\$40.50	50.0%	2009

100	Southampton County	\$27.00			2009
101	Edinburg, Town of	\$27.20	\$40.80	50.0%	2009
102	Stuart, Town of	\$27.20	\$38.13	40.2%	2006
103	King William County	\$27.50			2009
104	Culpeper, Town of	\$27.80	\$41.10	47.8%	2009
105	Appalachia, Town of	\$28.40	\$40.86	43.9%	2008
106	Pound, Town of	\$28.60	\$39.60	38.5%	2009
107	Amherst County Service Authority	\$28.85			2009
108	Richmond, City of	\$29.17			2009
109	Albemarle County Service Authority	\$29.39			2009
110	LaCrosse, Town of	\$29.72	\$51.70	74.0%	2009
111	Henry County Public Service Authority	\$30.00			2006
112	Tazewell, Town of	\$30.20	\$45.25	49.8%	2008
113	South Hill, Town of	\$30.50	\$58.00	90.2%	2009
114	Pembroke, Town of	\$30.58			2000
115	Botetourt County	\$31.00			2007
116	Goochland County (Tuckahoe Creek)	\$31.14			2008
117	Washington County Service Authority	\$31.19			2009
118	Pearisburg, Town of	\$31.38	\$54.91	75.0%	2008
119	Purcellville, Town of	\$31.38	\$62.76	100.0%	2009
120	Fauquier County Water/San. Authority	\$31.65			2009
121	Campbell County Utilities/Svc Authority	\$31.96			2008
122	Ferrum Water & Sewerage Authority	\$32.00			2006
123	Rye Valley Water Authority	\$32.00			2001
124	Norton, City of	\$32.05	\$49.95	55.9%	2009
125	Nelson County	\$32.10			2006
126	Big Stone Gap, Town of	\$32.50	\$48.75	50.0%	2007
127	Victoria, Town of	\$32.58	\$49.10	50.7%	2006
128	Appomattox, Town of	\$33.00	\$50.35	52.6%	2008
129	Boones Mill, Town of	\$33.00	\$47.00	42.4%	2009
130	Stoney Creek Sanitary District	\$33.12			2008
131	Bluefield, Town of	\$33.27	\$49.91	50.0%	2009
132	Goochland County	\$34.14			2008
133	Mineral, Town of	\$34.20	\$37.80	10.5%	2008
134	Jonesville, Town of	\$34.75	\$42.70	22.9%	2008
135	Round Hill, Town of	\$34.75	\$52.15	50.1%	2009
136	Alleghany County	\$35.00			2009
137	Bedford County Service Authority	\$35.00			2009
138	Nelson County Service Authority (L)	\$35.30			2009
139	Nelson County Service Authority (W)	\$35.30			2009
140	Gate City, Town of	\$36.00	\$43.00	19.4%	2007
141	Charlottesville, City of	\$36.69			2009
142	Hanover County	\$36.88			2009
143	Cumberland County	\$37.00			
144	Montgomery County Service Authority	\$37.80			2007
145	Gordonsville, Town of	\$37.85	\$58.95	55.7%	2008
146	Cape Charles, Town of	\$37.99			2009
147	Carroll County Public Service Authority	\$38.50			2008
148	Clarke County Sanitary Authority	\$39.70			2009
149	Toms Brook-Maurertown San. District	\$39.75			2008
150	Hamilton, Town of	\$40.00	\$47.00	17.5%	2008
151	Smyth County	\$41.00			2008
152	Buckingham County	\$41.72			2009

153	Bland County Service Authority	\$43.75			2005
154	Dryden Water Authority	\$44.50			2007
155	Montross, Town of	\$45.00			
156	Gloucester County	\$45.54			2009
157	Dickenson County Service Authority	\$50.50			2009
158	Clarksville, Town of	\$58.00	\$115.50	99.1%	2009
159	Middleburg, Town of	\$77.57	\$110.57	42.5%	2009
	Average	\$25.61	\$37.86	47.8%	

NOTE:

- A.** City of Fairfax rates have been corrected from the reported \$6.42 for 5,000 gallons/month.
City quarterly charges: \$19.26 (first 5,000 gallons); \$3.69 (1,000 gallons thereafter).
15,000 gallons/quarter = \$19.26 (5,000) + \$ 36.90 (10,000) = \$56.16.
\$56.16 / 3 months = \$18.72
- B.** Town of Vienna rates were not included in DAA Report and have been added.
Rate per 1,000 gallons: \$3.99 (inside); \$4.37 (outside); all pay \$8.00 service charge.
Inside: 15,000 gallons/quarter = \$59.85 + \$8.00 = \$67.85 / 3 = \$22.62.
Outside: 15,000 gallons/quarter = \$65.55 + \$8.00 = \$73.55 / 3 = \$24.52.

ATTACHMENT 4

**Residential Rates Charged by Public Water Systems Statewide
Systems with Inside and Outside Water Rates
Monthly Cost of 5,000 Gallons of Water**

**DRAPER ADEN 2009 WATER RATE SURVEY: VIRGINIA RESIDENTIAL
MONTHLY RATE BASED ON CONSUMPTION OF 5,000 GALLONS**

	Locality	Resid. Rate: 5K Gall/Mo		% Increase	Last Rate Chg
		Inside	Outside	Outside v. Inside	
1	Norfolk, City of	\$25.00	\$25.65	2.6%	2009
2	Crewe, Town of	\$25.00	\$26.30	5.2%	2006
3	Vinton, Town of	\$15.35	\$16.19	5.5%	2008
4	Vienna, Town of (See Note A)	\$22.62	\$24.52	8.4%	2007
5	Mineral, Town of	\$34.20	\$37.80	10.5%	2008
6	Smithfield, Town of	\$22.40	\$25.60	14.3%	2005
7	Pennington Gap, Town of	\$25.40	\$29.40	15.7%	1997
8	Exmore, Town of	\$17.50	\$20.50	17.1%	2001
9	Hamilton, Town of	\$40.00	\$47.00	17.5%	2008
10	Courtland, Town of	\$11.00	\$13.00	18.2%	1994
11	Gate City, Town of	\$36.00	\$43.00	19.4%	2007
12	Lexington, City of	\$17.49	\$20.99	20.0%	2009
13	Stanley, Town of	\$18.50	\$22.50	21.6%	2009
14	Jonesville, Town of	\$34.75	\$42.70	22.9%	2008
15	Independence, Town of	\$25.00	\$31.25	25.0%	2007
16	Glen Lyn, Town of	\$26.00	\$32.50	25.0%	2007
17	Franklin, City of	\$26.77	\$33.54	25.3%	2008
18	Colonial Heights, City of	\$10.70	\$13.53	26.4%	2008
19	Bridgewater, Town of	\$18.82	\$24.86	32.1%	2009
20	Kenbridge, Town of	\$26.00	\$34.43	32.4%	2007
21	Richlands, Town of	\$24.75	\$33.00	33.3%	2006
22	Dublin, Town of	\$24.25	\$33.00	36.1%	2003
23	Pound, Town of	\$28.60	\$39.60	38.5%	2009
24	Dendron, Town of	\$18.00	\$25.00	38.9%	2005
25	Stuart, Town of	\$27.20	\$38.13	40.2%	2006
26	Coeburn, Town of	\$26.98	\$37.85	40.3%	2005
27	Hillsville, Town of	\$21.83	\$31.07	42.3%	2005
28	Boones Mill, Town of	\$33.00	\$47.00	42.4%	2009
29	Middleburg, Town of	\$77.57	\$110.57	42.5%	2009
30	Appalachia, Town of	\$28.40	\$40.86	43.9%	2008
31	Culpeper, Town of	\$27.80	\$41.10	47.8%	2009
32	Bedford, City of	\$18.20	\$27.06	48.7%	2009
33	Tazewell, Town of	\$30.20	\$45.25	49.8%	2008
34	Tappahannock, Town of	\$13.63	\$20.44	50.0%	2009
35	Martinsville, City of	\$19.61	\$29.41	50.0%	2007
36	Kilmarnock, Town of	\$20.75	\$31.12	50.0%	2006
37	Warrenton, Town of	\$13.30	\$19.95	50.0%	2003
38	Colonial Beach, Town of	\$14.10	\$21.15	50.0%	2009
39	Chase City, Town of	\$17.94	\$26.91	50.0%	2008
40	Farmville, Town of	\$17.96	\$26.94	50.0%	2007
41	Luray, Town of	\$27.00	\$40.50	50.0%	2009
42	Edinburg, Town of	\$27.20	\$40.80	50.0%	2009
43	Big Stone Gap, Town of	\$32.50	\$48.75	50.0%	2007
44	Mount Jackson, Town of	\$23.90	\$35.85	50.0%	2009
45	Bluefield, Town of	\$33.27	\$49.91	50.0%	2009

46	Bristol Virginia Utilities Board	\$21.33	\$32.00	50.0%	2009
47	Christiansburg, Town of	\$17.75	\$26.63	50.0%	
48	Round Hill, Town of	\$34.75	\$52.15	50.1%	2009
49	Victoria, Town of	\$32.58	\$49.10	50.7%	2006
50	Appomattox, Town of	\$33.00	\$50.35	52.6%	2008
51	Gordonsville, Town of	\$37.85	\$58.95	55.7%	2008
52	Norton, City of	\$32.05	\$49.95	55.9%	2009
53	Chatham, Town of	\$17.00	\$26.50	55.9%	2009
54	Halifax County Service Authority	\$24.00	\$37.75	57.3%	2009
55	Rockingham County	\$14.89	\$23.75	59.5%	2008
56	Harrisonburg, City of	\$13.08	\$21.46	64.1%	2008
57	Remington, Town of	\$23.00	\$38.50	67.4%	2007
58	Covington, City of	\$19.00	\$33.00	73.7%	2009
59	LaCrosse, Town of	\$29.72	\$51.70	74.0%	2009
60	Rural Retreat, Town of	\$24.75	\$43.13	74.3%	2009
61	New Market, Town of	\$17.80	\$31.11	74.8%	2009
62	Blacksburg, Town of	\$20.45	\$35.76	74.9%	2009
63	Pearisburg, Town of	\$31.38	\$54.91	75.0%	2008
64	Lawrenceville, Town of	\$19.00	\$33.25	75.0%	2008
65	Saint Paul, Town of	\$19.88	\$36.38	83.0%	2006
66	Pulaski, Town of	\$18.50	\$34.00	83.8%	2007
67	Amherst, Town of	\$25.25	\$46.50	84.2%	2009
68	Waynesboro, City of	\$20.65	\$38.30	85.5%	2009
69	Leesburg, Town of	\$18.30	\$34.55	88.8%	2009
70	South Hill, Town of	\$30.50	\$58.00	90.2%	2009
71	Clarksville, Town of	\$58.00	\$115.50	99.1%	2009
72	Galax, City of	\$16.67	\$33.33	99.9%	2006
73	Front Royal, Town of	\$16.69	\$33.38	100.0%	1999
74	Rocky Mount, Town of	\$17.95	\$35.90	100.0%	2007
75	Alberta, Town of	\$23.96	\$47.92	100.0%	2008
76	Gretna, Town of	\$24.30	\$48.60	100.0%	2008
77	Keysville, Town of	\$25.50	\$51.00	100.0%	2003
78	Wytheville, Town of	\$26.20	\$52.40	100.0%	2009
79	Purcellville, Town of	\$31.38	\$62.76	100.0%	2009
80	Altavista, Town of	\$8.55	\$17.19	101.1%	2007
81	Orange, Town of	\$26.60	\$64.90	144.0%	2006
	Average (See Note B)	\$24.68	\$37.86	53.5%	

NOTE:

- A.** Town of Vienna rates were not included in DAA Report and have been added.
Rate per 1,000 gallons: \$3.99 (inside); \$4.37 (outside); all pay \$8.00 service charge.
Inside: 15,000 gallons/quarter = \$59.85 + \$8.00 = \$67.85 / 3 = \$22.62.
Outside: 15,000 gallons/quarter = \$65.55 + \$8.00 = \$73.55 / 3 = \$24.52.
- B.** Average rates differ from the average rates reported on Exhibit 1 because Exhibit 3 excludes systems with uniform rates for all customers, regardless of location.

ATTACHMENT 5

Regional Water Rate Comparison
Chart prepared by Fairfax Water



Comparison of Local Water Rates

This comparison is based on 24,000 gallons of residential water use by an established customer over a three-month winter period. Rates listed are current as of June 1, 2008.

Jurisdiction/Agency	Basic Water Service Charge*
Town of Leesburg (Outside)	\$158.64
Virginia-American Water Company -Prince William County	123.73
Town of Vienna (Outside Town Limits)	112.88
Town of Vienna (Inside Town Limits)	103.76
City of Manassas Park	91.50
City of Fairfax	91.15
District of Columbia	89.55
Washington Suburban Sanitary Commission -Montgomery and Prince George's Counties, Maryland	85.64
Town of Leesburg (Inside)	85.44
City of Falls Church	85.19
Arlington County	80.40
Virginia-American Water Company -City of Alexandria	76.63
City of Manassas	72.90
City of Bowie, Maryland	68.74
City of Rockville, Maryland	67.44
Prince William County Service Authority	66.75
Loudoun Water	61.17
Town of Herndon	54.96
Fairfax Water (Effective April 1, 2009)	50.97
Fairfax Water (Current)	47.05



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* Basic Water Service Charge includes the account service charge plus water used at the current commodity rate.