

# 12th Annual Virginia Water & Sewer Rate Report



## Residential Water and Sewer Rates Continue to Rise in the New Millennium

With the support of the *Virginia Municipal League* and the *Virginia Association of Counties*, Draper Aden Associates has once again compiled valuable information about the water and sewer rates for utilities throughout the Commonwealth of Virginia.

This year's survey received a 48% response rate with 145 responses received out of a possible 301.

This year's average water rates increased 5% from last year's average to \$17.31 (based on our 12-year Control Group). Since 1990, average water rates have increased by 50%.

Sewer rates increased by only 1% since last year -- from \$20.73 to \$20.92. Sewer rates have increased by 46% since 1990.

Of the 134 systems responding to the question on rate structure, 40% had a uniform rate structure, 22% used a descending structure, 17% used an ascending structure, 5% had a flat rate structure, 1% used a one-charge structure, and 15% used some other type of rate structure.

A majority of the respondents used a monthly billing cycle (56%) while 30% used a bi-monthly cycle, and 14% used a quarterly billing cycle.

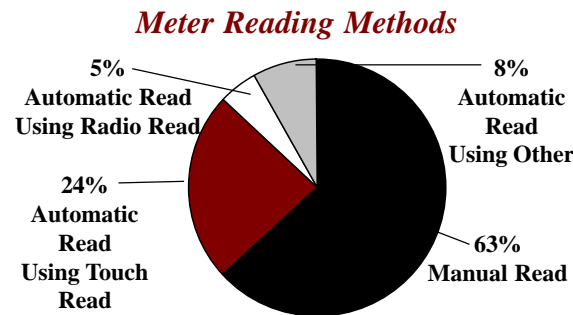
We hope that the information provided proves valuable and helpful to you. Thank you to all who participated in this year's study.

*Note: The information in this report was provided by respondents to a survey and is believed to be correct. However, Draper Aden Associates, the Virginia Association of Counties and the Virginia Municipal League do not warrant the accuracy of this information.*

## Overall Survey Analysis

### Meter Reading

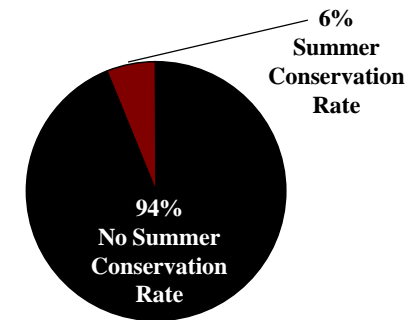
The average number of meters read on a regular basis is 5,349 with a range from 11 to 83,181 meters. Meters are most often read once per month. Of those planning to make changes in their meter reading system, most are planning to switch to a touch read system. Current systems have been in place for an average of 14 years. Meter reading methods are shown in the chart below.



### Summer Conservation Rates

Only 6% of the respondents currently have a summer conservation rate. Those that do calculate the rates a number of different ways:

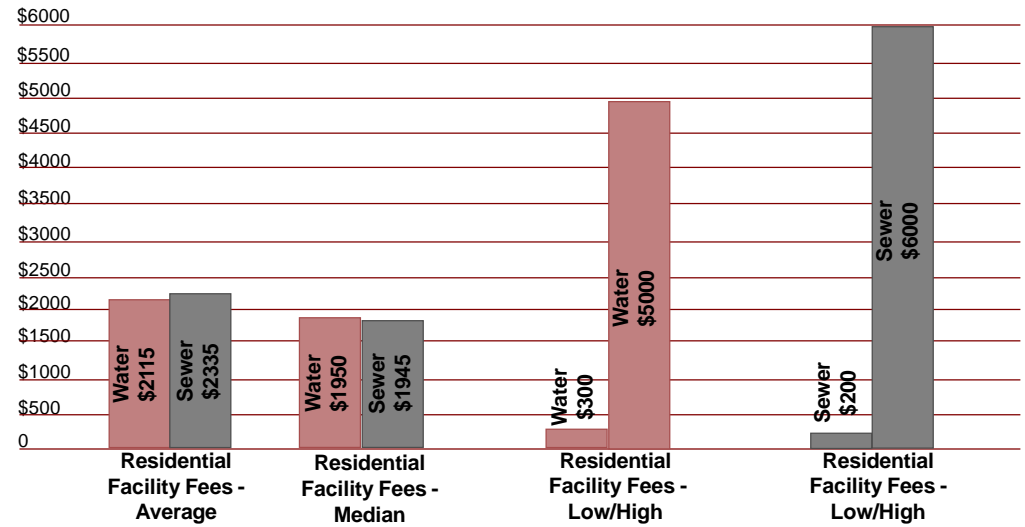
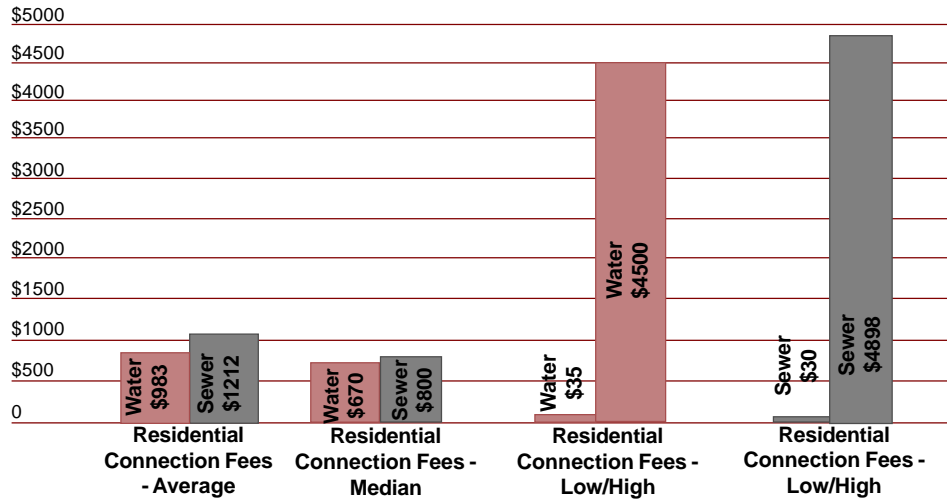
- ♦ Additional \$4.50/1000 gallons is charged;
- ♦ Additional \$2.46/1000 gallons is charged;
- ♦ Additional \$2.70/1000 gallons is charged;
- ♦ A 35% surcharge if winter average is exceeded by 35%; and
- ♦ Based upon May bill.



## Water Survey Facts

- ♦ The average number of residential water units served is 9,080 while the average number of non-residential water units served is 566.
- ♦ 91% of the respondents use gallons to measure water consumption.
- ♦ 85% of the respondents have a per-billing cycle minimum charge. The average minimum is \$14.07.
- ♦ According to respondents, an average of 8 million gallons of water are produced per day while an average of 4 million are consumed.
- ♦ 19% of respondents include capital recovery costs in their water connection fees.
- ♦ Only 32% of respondents said that they have a water facility fee in place.
- ♦ 23% of respondents have a separate water rate structure for business/commercial and industrial customers.
- ♦ The average charge for a business/commercial/industrial customer outside the municipal boundaries who uses 1 million gallons of water per month is \$4,781.25; for 4 million gallons, \$20,423.42.

# Connection and Facility Fees



## Sewer Survey Facts

- ◆ The average number of residential water units served is 6,559 while the average number of non-residential sewer units served is 595.
- ◆ According to respondents, the average daily sewage discharge per day is 3 million gallons.
- ◆ 78% of the respondents base their sewer charge on water consumption.  
5% base their sewer charge on something other than water consumption. The most common methods of determining the charge are rate study and meter size. Others use a flat rate or base it on location while one respondent bases its rates on the August bill.
- ◆ Only 32% of respondents said that they have a sewer facility fee in place.
- ◆ 23% of respondents have a separate sewer rate structure for business/commercial and industrial customers.
- ◆ The average sewer charge for a business/commercial/industrial customer outside the municipal boundaries who uses 1 million gallons of water per month is \$6,510.45; for 4 million gallons, \$24,463.64.

## Rate Structures\*

Year	One-Charge	Ascending	Descending	Uniform	Other
1991	10%	15%	35%	40%	
1992	06%	12%	36%	46%	
1993					
1994			35%	50%	15%
1995	04%	18%	20%	46%	12%
1996	02%	17%	30%	44%	07%
1997	01%	19%	24%	40%	16%
1998	02%	17%	20%	42%	19%
1999	02%	19%	19%	38%	22%
2000	01%	17%	22%	40%	15%

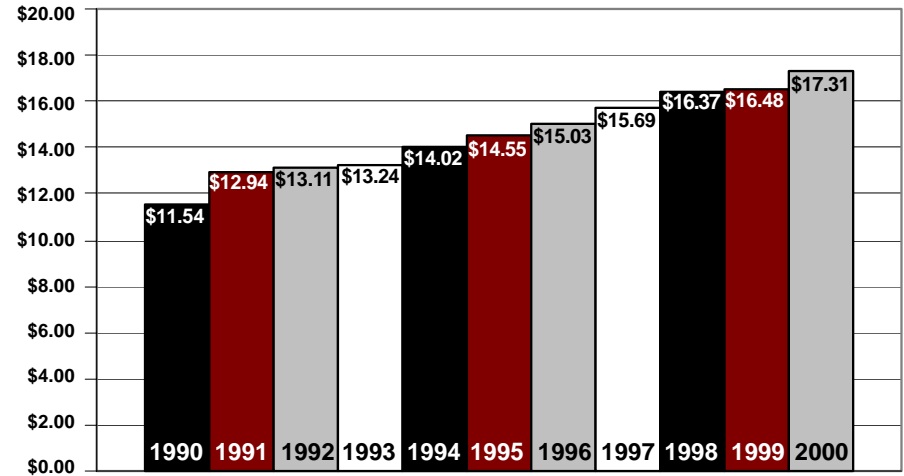
\* Percentages based on total responses to the survey

# Water Survey Analysis

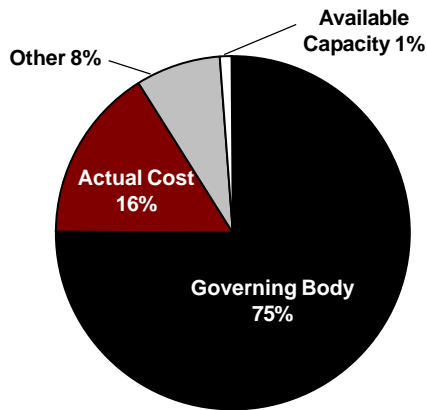
	Number of Responses	Average	Median
Equivalent Residential Water Connections	113	17,289	2,400
Monthly Residential Water Rate Inside Corporate Limits	125	\$17.25	\$16.60
Monthly Residential Water Rates Outside Corporate Limits	86	\$24.04	\$23.03
Residential Connection Fee	106	\$983.48	\$670.00
Residential Facility Fee	38	\$2,115.13	\$1,950.00
Monthly Business/Commercial Water Rate (1 mil. gallons inside)	107	\$3,599.50	\$2,673.80
Monthly Business/Commercial Water Rate (4 mil. gallons inside)	102	\$12,927.32	\$10,513.00

## Average Water Rates

(5,000 gallons per month)  
Based on Control Group

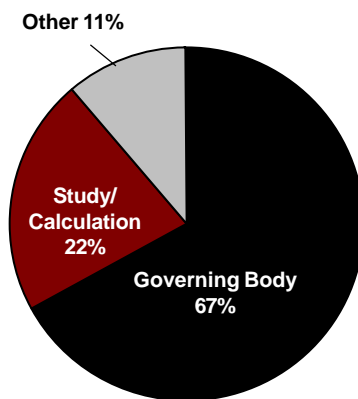


### \*Factors Used in Determining Residential Water Connection Fees



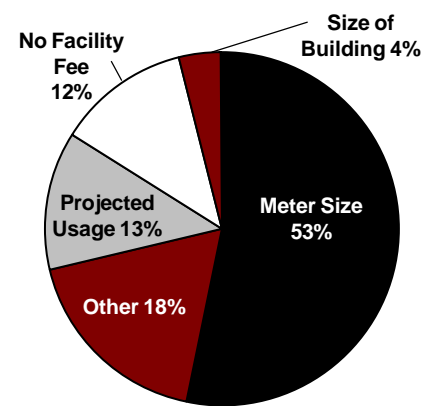
Number of respondents to this question: 142  
(98%)

### \*Factors Used in Determining Residential Water Facility Fees



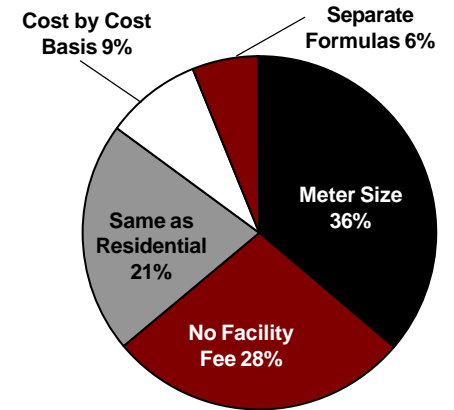
Number of respondents to this question: 58  
(40%)

### Factors Used in Determining Business Water Connection Fees



Number of respondents to this question: 120  
(83%)

### Factors Used in Determining Business Water Facility Fees



Number of respondents to this question: 88  
(61%)

\*Method used by governing body is undetermined.

# Water Survey Data

Locality	# Residential Water Units	# Non-Residential Water Units	# Equivalent Residential Water Connections	Gallons/Cubic Feet (CF)	Residential Water Rate Inside (5,000 gallons per month)	Residential Water Rate Outside (5,000 gallons per month)	Billing Cycle (M=monthly; B=bi-monthly; Q=quarterly; O=Other)	Average Daily Water Production (Millions of Gallons)	Average Daily Water Consumption (Millions of Gallons)	Last Water Rate Change	Residential Connection Fee (in town where applicable)	Last Connection Fee Change	Residential Facility Fee (in town where applicable)	Last Facility Fee Change	Water Charge-Business (1,000,000 gallons/month in town)
Albermarle County Service Authority	18,858	987	19,908	G			M		4.977	2000		1998		1994	\$2,704.25
Altavista, Town of	1,622	112	8,800	G	\$7.60	\$15.60	Q	2.200	2.200	2000	\$250.00				\$15,131.60
Amherst County Service Authority	5,836	352	5,020	CF	\$18.70		B	1.210	1.090	1998	\$650.00	1994	\$1,500.00	1994	\$2,777.38
Amherst, Town of	1,023	144	1,510	G	\$15.50	\$27.00	B	0.479	0.378	1998			\$700.00		\$4,300.00
Appomattox River Water Authority			54,240	G			Q	14.920	13.560	1996					
Appomattox, Town of	824	200	952	G	\$9.15	\$14.50	M			1994	\$500.00	1989	\$500.00	1989	\$1,800.15
Arlington County	34,162	2,086	92,657	G	\$9.30		Q		23.160	2000	\$1,600.00	1990		1997	\$1,860.00
Augusta County Service Authority	12,252	974	12,640	G	\$16.88		B	3.950	3.160	1998	\$870.00	1997	\$2,025.00	1999	\$2,132.26
Bedford County Public Service Authority	5,048	354	6,439	G	\$25.30	\$25.30	B	1.306	1.197	1995			\$1,750.00	1995	\$5,068.00
Bedford, City of	2,785	380	4,000	G	\$13.89	\$15.99	M	1.200	1.000	1999	\$200.00	1989	\$300.00	1989	\$1,702.33
Berryville, Town of	1,355	95		G	\$32.85		B	0.390		1996		1998	\$3,100.00	2000	\$6,570.00
Blacksburg, Town of	7,401	350	14,553	G	\$16.78	\$29.38	B	7.110	3.600	2000		2000	\$423.00	2000	\$2,772.93
Bluefield, Town of	2,300	100	3,200	G	\$24.00	\$30.00	M	1.200	0.800	2000	\$250.00	2000			\$3,036.50
Botetourt County	177	50		G	\$24.95		M	0.120	0.100	1992		1995	\$1,000.00	2000	\$2,766.00
Bowling Green, Town of	729	126	620	G	\$11.25	\$22.50	B	0.155	0.155	1999	\$1,200.00	1993			
Bristol Virginia Utilities Board	6,543	1,089	10,375	G	\$13.50	\$20.25	M	4.119	2.594	1999	\$900.00	1999		1999	\$1,197.00
Broadway, Town of	850	50	1,400	G	\$10.07	\$11.57	Q	0.350	0.350		\$1,500.00	1999			\$2,672.82
Brodnax, Town of	162	21	111	G	\$12.20	\$14.20	M	0.028	0.027		\$600.00				
Buchanan, Town of	525		525	G	\$16.60	\$24.90	M			1990	\$400.00	1996			
Buckingham County	156	3		G	\$43.92	\$43.92	B	0.385		1994					
Buena Vista, City of	2,400	150		G	\$16.70	\$33.40	M	1.000	0.600	1999	\$500.00	1999			
Burkeville, Town of	250	37		G	\$13.60	\$26.10	M	1.426	0.047	1992	\$425.00	1992			
Campbell County Utilities & Service Authority	6,582	346	7,562	CF	\$20.75	\$20.75	B	1.446	1.238	1993	\$500.00	1992	\$1,200.00	1992	\$3,159.60
Cape Charles, Town of	735	75	500	G	\$21.00		M		0.127		\$875.00	1998			
Carroll County Public Service Authority	1,389	134		G	\$28.50		M	69.311	0.902	1995		1995			
Charles City County	190	20		G	\$15.50		M			1994	\$2,000.00	1994	\$1,000.00		
Charlotte Court House, Town of	187	64	90	G	\$11.25		B			1994	\$50.00	1994			
Chesapeake, City of	55,731	1,393	65,596	G	\$15.36		B	16.119	14.835	1995		1995			\$2,908.08
Chesterfield County	90,603	3,553	100,414		\$10.71		B	29.400		1999		1991	\$2,842.00	2000	\$1,580.20
Chilhowie, Town of	2,100	185	254	G	\$11.83	\$23.67	M	1.150	0.635	2000	\$350.00				\$1,996.47
Chincoteague, Town of	2,500	700	2,000	G	\$13.00	\$13.00	Q	0.450	0.450	1999	\$550.00	1999			\$3,650.00
Christiansburg, Town of	7,499	896	8,395	G	\$4.47	\$6.70	B		1.964	1994	\$500.00	1989			\$604.00
Claremont, Town of	280		140	G	\$11.75		B	0.033	0.033	1982	\$750.00	1987			
Clarke County Sanitary Authority	269	36		G	\$22.50	\$22.50	B	0.060		1996		1996	\$1,650.00	1996	\$4,500.00
Clarksville, Town of	845	90		G	\$23.18	\$42.34	B	0.390		2000	\$800.00				
Cleveland, Town of	150	5		G	\$17.00	\$18.95	M					2000			
Coeburn, Town of	1,285	175	1,300	G	\$18.50	\$27.75	M	0.460	0.377	1999	\$350.00	1992			\$2,506.00
Colonial Beach, Town of	1,856	14		G			Q					1995			\$1,095.25
Crewe, Town of	1,100	20	1,900	G	\$15.00	\$22.50	M	0.475	0.453	2000	\$300.00				\$30,000.00
Culpeper, Town of	3,470	470	3,940	G	\$20.25	\$30.38	M	1.400	1.270	1998	\$1,500.00			1990	\$2,505.00
Dayton, Town of	543	85	5,600	G	\$12.00	\$12.00	M	1.400	1.400	2000	\$1,200.00	1992			\$2,002.00
Deer Creek Water Company	67		42	G			M	0.009	0.006	1996	\$750.00	1996			
Dillwyn, Town of	175	54	218	G	\$30.00	\$45.00	M	51.600	0.040	1994	\$350.00				\$6,000.00
Dinwiddie County Water Authority	2,375	135	4,924	G	\$13.67		M		1.231	1997	\$1,700.00	1995			\$1,297.67

Locality	# Residential Water Units	# Non-Residential Water Units	# Equivalent Residential Water Connections	Gallons/Cubic Feet (CF)	Residential Water Rate Inside (5,000 gallons per month)	Residential Water Rate Outside (5,000 gallons per month)	Billing Cycle (M=monthly; B=bi-monthly; Q=quarterly; O=Other)	Average Daily Water Production (Millions of Gallons)	Average Daily Water Consumption (Millions of Gallons)	Last Water Rate Change	Residential Connection Fee (in town where applicable)	Last Connection Fee Change	Residential Facility Fee (in town where applicable)	Last Facility Fee Change	Water Charge-Business (1,000,000 gallons/month in town)
Dublin, Town of	2,512	141	2,653	G	\$17.25	\$23.25	M			1991	\$450.00	1987			\$2,753.50
Edgewood Water Company	108	4	96	G			Q	0.028							
Emporia, City of	2,071	354	6,000	G	\$15.12		M			2000	\$800.00	1998			\$2,161.52
Fairfax County Water Authority	273,126	7,909	489,120	G	\$6.50	\$6.50	Q	134.750	122.280	2000	\$500.00	1998	\$2,820.00	1999	\$1,300.00
Fairfax, City of	9,225	1,225	26,000	G	\$13.98	\$13.98	Q	8.000	6.700	2000	\$989.00	2000	\$2,820.00	2000	\$2,696.45
Falls Church, City of	30,378	2,882	63,640	G	\$13.45		M		15.910	1999		1996	\$2,750.00	1996	\$1,648.25
Farmville, Town of	1,847	301	2,291	G	\$15.95	\$23.93	B	0.922	0.849	1996	\$600.00	1996	\$500.00		\$2,203.85
Fauquier County Water and Sanitation Authority	3,318	370	3,688	G	\$29.84		M	0.922	0.246		\$4,500.00	1995	\$4,400.00	1990	\$5,171.48
Ferrum Water & Sewerage Authority	110	17	550	G	\$21.00		M	0.125	0.100	1998	\$500.00	1998			\$3,523.00
Fincastle, Town of	240	29	269	G	\$12.50		M	0.111	0.880		\$1,500.00	1989	\$950.00	1989	\$1,016.50
Frederick County Sanitation Authority	9,637	353	10,004	G	\$16.91		B	3.003	2.501	1995	\$2,100.00	2000	\$2,200.00	2000	\$2,243.82
Front Royal, Town of	4,300	1,000	6,400	G	\$16.69	\$33.38	M	1.900	1.600	1999	\$2,800.00	1996			\$5,111.09
Galax, City of	2,050	400	6,120	G	\$10.63	\$21.26	Q	1.800	1.530	1989	\$375.00	1989			\$1,343.98
Gate City, Town of	917	226	1,600	G	\$28.00	\$35.00	M	0.420	0.400	1985	\$350.00	1985			\$5,003.00
Goochland County	420	12	432	G	\$18.05		B		0.193	2000	\$2,000.00	1996			\$2,626.00
Gordonsville, Town of	625	65	2,454	G	\$16.66	\$23.38	M		0.500	1998	\$750.00	1997			\$2,270.00
Greensville County Water and Sewer Authority	1,424	82	4,500	G	\$15.00		M	1.125	1.125	1978	\$800.00	1998			\$3,000.00
Henry County Public Service Authority	10,125	500	10,625	G	\$16.00	\$16.00	M	2.500	2.500	1989	\$1,000.00	1989			\$2,699.20
Highland County	56	8	28	G	\$22.28	\$22.28	B		0.007			1999			
Hillsville, Town of	1,200	190	1,560	G	\$16.91	\$18.56	B	0.395	0.390	2000	\$550.00	1998			\$1,973.50
Isle of Wight County Public Utilities	1,803	63		G	\$24.00		B			1998	\$3,000.00	1998			\$2,014.00
Ivor, Town of	158	24	154	G	\$7.00		Q	0.039	0.039	1989	\$350.00	1995			
James City Service Authority	10,547	427	13,483	G	\$12.50		Q	3.200	3.400	1998	\$2,400.00	1995	\$1,050.00	1990	\$2,600.00
John Flannagan Water Authority			12,000	G			M	3.200	3.000	1995					
Jonesville, Town of	454	103	584	G	\$29.25	\$38.75	M	0.400	0.365	1999	\$250.00	1992			\$5,510.00
Kenbridge, Town of	525	100	645	G	\$15.19	\$22.80	M	0.181	0.107	1999	\$500.00	1990			\$4,704.60
Keysville, Town of	335	98	802	G	\$20.00	\$35.00	M	0.250	0.180	1996	\$500.00	1985			\$2,010.00
Kilmarnock, Town of	550	230		G	\$20.00	\$40.00	B	0.230	0.230	1999	\$1,500.00	1999			\$4,145.22
King George County	2,369	185		G	\$13.35	\$13.35	B	0.520		1996	\$3,700.00	1996			\$2,650.00
LaCrosse, Town of				G	\$11.20	\$22.80	M	0.065		1991	\$500.00	1997			\$516.00
Lawrenceville, Town of	938	181	3,368	G	\$15.89	\$23.83	B	0.896	0.842	1999	\$400.00	1993			\$1,754.36
Leesburg, Town of	10,341	679	10,964	G	\$14.68	\$21.28	Q	3.321	3.020	1992	\$1,356.00	1995	\$3,440.00	2000	\$2,688.67
Lexington, City of	2,192	395	3,600	CF	\$9.18	\$11.02	B	1.100	0.900	2000	\$500.00	1995			\$3,930.59
Loudoun County Sanitation Authority	38,600	1,127	41,600	G	\$14.51		Q		10.400	1995	\$80.00	1995	\$3,575.00	2000	\$1,640.00
Louisa County Water Authority	59	36	805	G			M	0.238	0.208	2000	\$1,000.00	1999	\$750.00	1985	\$2,500.00
Marion, Town of	3,347	150	72	G	\$15.00	\$30.00	M	2.400	1.800	1995	\$50.00	1995			\$3,000.00
Martinsville, City of	7,000	450	12,000	G	\$7.78	\$15.56	M	3.200	3.000		\$525.00	1999			\$834.85
Middleburg, Town of	438	292	146	G	\$30.00	\$30.00	Q			1997		1997	\$4,500.00	1997	\$6,082.50
Montgomery County Public Service Authority	2,100	24	2,400	G	\$27.42		M	0.650	0.600	1996	\$500.00	1995	\$2,000.00	1997	\$3,507.67
Mount Jackson, Town of	825	25		G	\$10.00	\$15.00	M			1989	\$1,000.00				\$42,000.00
Narrows, Town of	989	70		G	\$35.00	\$50.00	M	0.321	0.137	1999	\$200.00				\$3,782.50
Nelson, County of	2457			G	\$27.10(WTG)		M			2000	\$1000.00	1993			\$5,428.00
New Market, Town of	729	62	315	G	\$15.11	\$26.44	B	0.629		1996		1993			\$2,572.96
Pearisburg, Town of	1,416	120	1,560	G	\$20.50	\$35.88	M			1999	\$400.00	1992			\$2,266.00
Pennington Gap, Town of	981	175	660	G	\$25.40	\$29.40	M	0.926	0.550	1997	\$200.00				\$6,691.90
Pittsylvania County Service Authority	2,655	50	2,240	G	\$17.90		B	0.030	0.560	1998	\$650.00				\$2,903.40
Portsmouth, City of	30,000	6120		CF	\$18.03		B			2000		1995			\$2,593.00

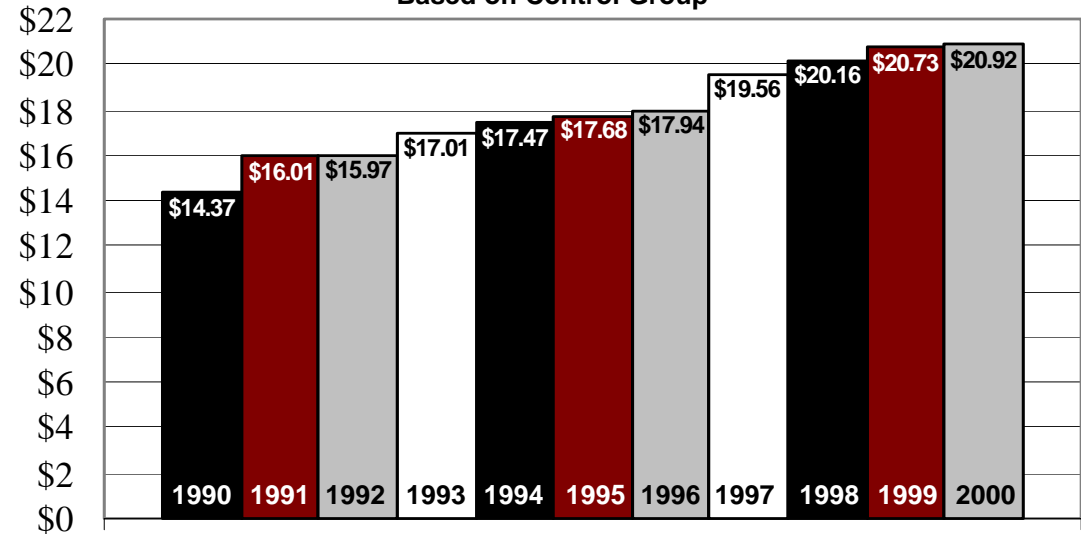
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Pound, Town of	907	85	1,320	G	\$20.00	\$30.50	M			1999	\$250.00			1999	\$3,005.00
Prince George County	2,800	65		G	\$14.30		B			1997	\$2,000.00	1997			\$1,921.00
Prince William County Service Authority	62,563	2,243	62,216	G	\$12.85		M	17.210	15.550	2000			\$4,100.00	1997	\$2,315.65
Pulaski County Public Service Authority	3,505	60	7,500	G	\$21.00		M	2.000	2.000	1990	\$350.00				\$2,512.00
Pulaski, Town of	4,417	240	8,000	G	\$12.85	\$25.70	M	2.000	1.600	1997	\$470.00	1994	\$330.00	1995	\$1,079.00
Purcellville, Town of	1,195	191	1,034	G	\$20.75	\$41.50	B			1997			\$5,000.00	2000	\$4,150.00
Radford, City of	4,433	429	10,223	G	\$10.70		M	3.450	2.540	1994	\$690.00	1990		1975	\$1,775.70
Remington, Town of	428	41	268	G	\$11.00	\$18.50	M	0.071	0.067	1993	\$3,000.00				\$2,001.00
Richlands, Town of	2,257	253	2,136	G	\$18.50	\$24.00	M	1.000	0.700	1994	\$400.00	1986			\$3,003.00
Richmond, City of	48,941	9,823	361,755	CF	\$16.64	\$23.49	M	106.000	10.697	2000	\$35.00	1997			
Ridge Utilities	460		256	G	\$28.34		Q	0.085	0.064		\$2,500.00	1996			
Roanoke County	18,044	1,656	24,398	G	\$22.28	\$22.28	B		5.250		\$500.00	1995	\$2,690.00	1995	\$3,995.25
Roanoke, City of	31,000	3,200			\$7.08	\$14.16	M	18.200	17.600	2000	\$1,064.00	2000			\$1,258.30
Rockbridge County Public Service Authority	1,425	234	2,062	G	\$17.50	\$17.50	B	0.612	0.516	2000	\$1,000.00	1989			\$3,000.00
Round Hill, Town of	200	400	600	G	\$16.60	\$21.90	M	0.120	0.090	1999	\$3,700.00	1999			
Rye Valley Water Authority	498	12	754	G	\$25.00	\$25.00	Q	0.189	0.188	1998	\$325.00	1996			\$1,121.50
Salem, City of	7,515	1,320	13,791	G	\$10.50		M	5.100	4.600	1998	\$800.00				\$1,984.75
Shenandoah, Town of	909	93	1,000	G	\$21.30	\$30.60	M	0.250	0.250	1997	\$1,500.00	1997			\$4,002.20
South Hill, Town of	1,940	381	3,056	G	\$18.81	\$37.62	M	0.965	0.764	1999	\$1,000.00	1991			\$1,762.65
Southampton County	753	75		G	\$18.50	\$18.50	M			1996	\$450.00				
Spotsylvania County	18,170	1,269	19,439	G	\$11.64		M			1997	\$1,080.00	1999	\$3,950.00		\$3,705.82
Stafford County	22,303	804	22,000	G	\$11.63		M	7.200	5.500	1977	\$500.00	1983		1999	\$1,835.45
Stanley, Town of	1,362	58	1,410	G	\$13.50	\$17.50		0.295		1999	\$1,500.00	1991			\$2,115.80
Staunton, City of	9,313	999	16,480	CF	\$13.40	\$20.10	B	4.430	4.120	2000		1995	\$1,160.00	1991	\$2,673.80
Stephens City, Town of	550	50	400	G	\$16.50	\$21.75	B		0.100	1997			\$1,900.00	2000	\$2,330.00
Stoney Creek Sanitary District	1,185	10	1,315	G	\$21.00	\$39.00	B	0.145	0.085	1994	\$1,500.00	1989			\$4,960.00
Strasburg, Town of	1,587	71	2,400	G	\$17.10	\$23.94	M	0.700	0.600	2000			\$3,000.00		\$4,798.15
Suffolk, City of	16,640	1,220	18,800	CF	\$17.75		B	4.700		2000	\$890.00	2000	\$3,900.00	2000	\$3,250.00
Toms Brook Town of	425	18	445	G	\$30.00	\$30.00	M	0.105	0.060	1995	\$2,000.00	1995			\$4,010.00
Troutdale, Town of	78		78	G	\$18.75		M	0.103	0.010		\$450.00				\$3,700.00
Vienna, Town of	8,766	556	10,033	G	\$12.20	\$14.10	M	2.500	2.500	1997	\$2,400.00	1992	\$1,600.00		\$2,440.00
Virgilina, Town of	98	12		G	\$14.75	\$19.00	M	0.013	0.011	1990	\$400.00				
Virginia Beach, City of	155,382	5,699	124,800	CF			B	33.200	31.200	1994		1986		1987	\$3,550.00
Wakefield, Town of	473	88	225	G	\$7.70	\$15.40	M	0.123	0.110	1992		1992		1992	
Warrenton, Town of	3,301	205	3,447	G	\$16.50	\$24.75	M	1.150	0.890	1997	\$2,700.00	1997	\$2,700.00	1997	\$3,100.00
Washington County Service Authority	17,752	200	16,000	G	\$23.40	\$23.40	M	6.400	4.100	1997	\$850.00	1999	\$300.00	1999	\$2,610.40
Washington, Town of	117	27	140	G			M			1995	\$1,000.00	1995			
Waynesboro, City of	7700	400			\$9.85	\$18.20	B			1991	\$800.00	1999	1999		\$1,671.50
West Point, Town of	1,050	250		G	\$6.75	\$13.50	B	0.500		1989	\$600.00	1999			
Winchester, City of	9,900	811	21,535	G	\$11.66	\$17.50		7.220	5.380	1999	\$1,700.00	1999			\$1,543.00
Windsor, Town of	700	10	745	G	\$8.00	\$9.63	B	0.186	0.186	1999	\$1,000.00	1999			\$1,512.00
Wise, Town of	2,470	172	2,249	G	\$18.15	\$27.25	M	0.761	0.562	1994	\$500.00	1986			\$2,754.40
Woodhaven Water Company	430	90	430	G			Q	0.150		2000	\$1,500.00	1997			
WPOA Water Authority	61		50	G	\$37.00		Q	0.015	0.015	1993	\$400.00	2000			
Wytheville, Town of	2,900	516	4,352	G	\$21.80	\$43.60	M	1.880	1.090	2000	\$750.00	1995			\$1,615.05

# Sewer Survey Analysis

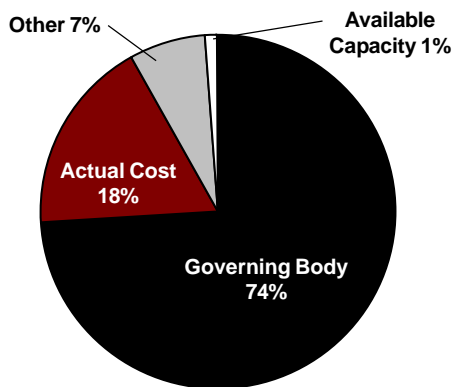
## Average Sewer Rates

(5,000 gallons per month)  
Based on Control Group

	Number of Responses	Average	Median
Equivalent Residential Sewer Connections	89	12,576	2,400
Monthly Residential Sewer Rate Inside Corporate Limits	112	\$20.57	\$19.81
Monthly Residential Sewer Rate Outside Corporate Limits	69	\$28.54	\$27.75
Residential Connection Fee	90	\$1,212.21	\$800.00
Residential Facility Fee	36	\$2,335.61	\$1,945.00
Monthly Business/Commercial Sewer Rate (1 mil. gallons inside)	95	\$4,015.22	\$3,120.00
Monthly Business/Commercial Sewer Rate (4 mil. gallons inside)	92	\$21,619.06	\$12,420.00

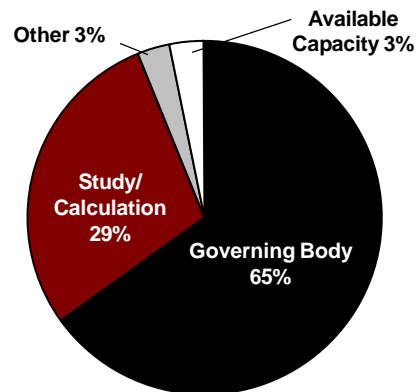


### \*Factors Used in Determining Residential Sewer Connection Fees



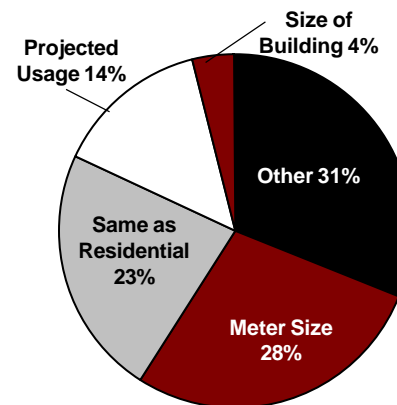
Number of respondents to this question: 116  
(80%)

### \*Factors Used in Determining Residential Sewer Facility Fees



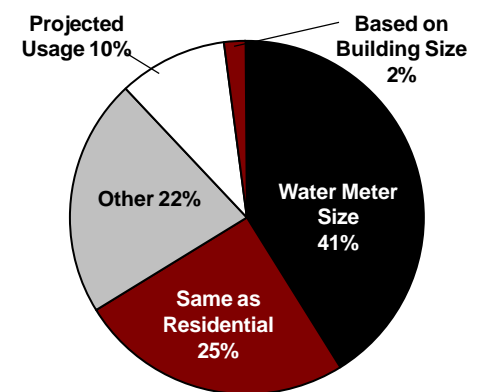
Number of respondents to this question: 62  
(43%)

### Factors Used in Determining Business Sewer Connection Fees



Number of respondents to this question: 102  
(70%)

### Factors Used in Determining Business Sewer Facility Fees



Number of respondents to this question: 59  
(41%)

\*Method used by governing body is undetermined.

# Sewer Survey Data

Locality	# Residential Sewer Units	# Non-Residential Sewer Units	# Equivalent Residential Sewer Connections	Average Daily Sewage Discharge (Millions of Gallons)	Residential Sewer Rate Inside (5,000 gallons per month)	Residential Sewer Rate Outside (5,000 gallons per month)	Last Sewer Rate Change	Residential Connection Fee (in town where applicable)	Last Connection Fee Rate Change	Residential Facility Fee (in town where applicable)	Last Facility Fee Rate Change	Sewer Charge-Business(1,000,000 gallons/month in town)
Abingdon, Town of	3,785	587	5,584	1.396	\$25.20	\$32.76	1998	\$1,000	1997		1998	\$3,783.91
Albermarle County Service Authority	15,617	735	14,217	3.550	\$11.25		1998				1994	\$2,250.00
Altavista, Town of	1,158	8,400	8,400	2.100	\$8.76	\$17.52	1998	\$400	1995	\$600.00	1995	\$1,751.00
Amherst County Service Authority	799	154	1,040	0.260	\$18.05		1998	\$600	1994	\$1,800.00	1994	\$3,619.63
Amherst, Town of	630	128	880		\$15.00	\$30.00	1994			\$2,500.00	2000	\$5,000.00
Appomattox, Town of	778	100	547	0.137	\$24.75	\$34.00	1999	\$500	1989	\$500.00	1989	\$5,113.80
Arlington County	33,819	1,814	109,732	27.400	\$13.00		2000				1997	\$2,600.00
Augusta County Service Authority	6,742	974	9,768	2.442	\$19.75			\$820	1994	\$3,755.00	1999	\$2,930.50
Bedford County Public Service Authority	529	93	1,004	0.179	\$23.75	\$23.75	1995		1995	\$2,000.00	1995	\$3,257.50
Bedford, City of	2,228	334	4,400	1.100	\$14.85	\$17.10	1999	\$200	1989	\$300.00	1989	\$2,627.20
Berryville, Town of	1,355	95		0.220	\$23.00		1996		1998	\$4,455.00	2000	
Blacksburg, Town of	7,037	277	11,194	2.800	\$16.82	\$24.45	2000	\$978	2000	\$401.00	2000	\$2,812.77
Botetourt County	1,800	230		0.001	\$18.50		1992		1995	\$1,000.00	2000	\$2,766.00
Bowling Green, Town of	447	99	360	0.060	\$25.88	\$29.25	1999	\$1,200	1993			
Bristol Virginia Utilities Board	6,338	992	9,339	2.334	\$16.25	\$24.38	1990	\$900	1999		1999	\$1,768.00
Broadway, Town of	713	50	1,100	0.275	\$5.33	\$5.50		\$1,600	1999			
Brodnax, Town of	162	21		0.025	\$25.13	\$30.13	1992	\$1,500				\$952.63
Buchanan, Town of	475		475	1.000	\$16.20	\$24.30	1990	\$500				
Buckingham County	6			0.001				\$1,000				
Buena Vista, City of	2,400	150		0.700	\$13.80	\$27.60	1998	\$1,000	1998			
Burkeville, Town of	250	30		0.060			1997	\$400	1997			
Campbell County Utilities & Service Authority	1,249	171	1,910	0.228	\$16.75		1993	\$500	1992	\$1,600.00	1992	\$3,240.00
Cape Charles, Town of	735	75			\$21.26			\$875	1998			
Carroll County Public Service Authority	547	16		0.104	\$29.50			\$600				
Charles City County	70	2	32	0.008	\$15.50		1994	\$4,000	1994	\$2,000.00	1994	
Chesapeake, City of	54,836	962		15.000	\$8.13							\$1,015.15
Chesterfield County	77,488	2,953	83,817	22.300	\$15.89		1999			\$1,465.00	1991	\$1,724.28
Chilhowie, Town of	836	167	1,824	0.460	\$11.83	\$28.40						
Christiansburg, Town of	82	7,029	9,048	2.352	\$16.00	\$24.00	1996	\$500	1989			\$2,008.00
Clarke County Sanitary Authority	167	20		0.016	\$26.00	\$26.00	1994		1994			\$5,118.60
Clarksville, Town of	820	90		0.350	\$31.04		2000	\$600				
Cleveland, Town of	150	5										
Coeburn, Town of	1,048	192	1,200	0.300	\$18.50	\$27.75	1999	\$325.00				\$2,506.00
Colonial Beach, Town of	1,856	14			\$38.25							
Crewe, Town of	1,036	5	784	0.196	\$23.34	\$23.34	1998	\$800		\$4.00		\$49,800.00
Culpeper, Town of	3,280	470	3,750	1.700	\$20.70	\$31.05	1994	\$1,500	1987			\$3,669.00
Dayton, Town of	521	72	5,600	1.400	\$15.20	\$15.20						
Deer Creek Water Company							2000	\$1,200				

Locality	# Residential Sewer Units	# Non-Residential Sewer Units	# Equivalent Residential Sewer Connections	Average Daily Sewage Discharge (Millions of Gallons)	Residential Sewer Rate Inside (5,000 gallons per month)	Residential Sewer Rate Outside (5,000 gallons per month)	Last Sewer Rate Change	Residential Connection Fee (in town where applicable)	Last Connection Fee Rate Change	Residential Facility Fee (in town where applicable)	Last Facility Fee Rate Change	Sewer Charge-Business (1,000,000 gallons/month in town)
Dillwyn, Town of	166	56	240	0.060	\$30.00	\$45.00	1996	\$500.00				\$6,000.00
Dinwiddie County Water Authority	2,222	101	3,050	0.762	\$20.50		1997	\$3,100.00	1995			\$1,697.76
Dublin, Town of	1,152	110	1,262		\$9.91	\$12.84	1998	\$400.00	1987			\$2,147.49
Emporia, City of	2,062	332	3,600	0.900	\$20.81		1999				1998	\$3,007.96
Fairfax, City of		961		3.800	\$12.53	\$12.53		\$4,898.00	2000			\$2,416.02
Falls Church, City of	2,909	552	6,020		\$19.55		1994	\$4,210.00	1996	\$2,160.00		\$3,910.00
Farmville, Town of	1,838	301	2,291	0.800	\$17.55	\$26.32	1997	\$600.00	1997	\$500.00	1997	\$2,424.24
Fauquier County Water and Sanitation Authority	2,996	315	3,311		\$41.09		1995			\$6,000.00	1990	\$5,125.54
Ferrum Water & Sewerage Authority	80	17	700	0.175	\$24.00		1998	\$500.00				\$4,027.00
Fincastle, Town of		29		0.048	\$24.03	\$24.03			1989	\$1,200.00	1989	\$3,760.36
Frederick County Sanitation Authority	8,530	325	9,500	2.375	\$23.62		1995	\$1,575.00	2000	\$3,220.00	2000	\$3,145.65
Front Royal, Town of	3,900	1,000	8,948	2.237	\$16.69	\$33.38	1999	\$2,800.00				\$5,111.09
Galax, City of	2,050	400	6,000	1.500	\$10.63	\$21.26	1989	\$350.00	1989			\$1,343.98
Gate City, Town of	850	115	1,480	0.370	\$28.00	\$35.00	1997	\$650.00	1985			\$5,003.00
Goochland County	270	8	278	0.078	\$27.60		2000	\$3,000.00	1996			\$3,120.00
Greensville County Water and Sewer Authority	1,405	5	2,868	0.717	\$17.50		1978	\$1,100.00	1998			\$4,000.00
Henry County Public Service Authority	6,606	460	7,066	5.200	\$16.00	\$16.00	1989	\$1,000.00	1989			\$2,699.20
Hillsville, Town of	1,000	175	1,320	0.330	\$22.72	\$30.68	1999	\$400.00	1998			\$3,591.84
Hopewell, City of	7,158	764	124,000	30.000			1998	\$375.00	1988			\$1,145.84
Isle of Wight County Public Utilities	739	38			\$12.00		1996	\$3,000.00	2000			\$2,500.00
James City Service Authority	11,795	427	15,557	3.890	\$11.50		1993	\$2,400.00	1995	\$1,300.00		\$2,300.00
Jonesville, Town of	430		430	0.056	\$21.28	\$27.21	1990	\$250.00	1992			
Kenbridge, Town of	580	105		0.223	\$19.44	\$29.16	1999	\$500.00	1990			\$2,168.64
Keysville, Town of	280	89	641	0.160	\$10.00	\$26.25	2000	\$750.00	1985			\$2,005.00
Kilmarnock, Town of	550	230			\$20.00	\$40.00		\$2,500.00	1999			\$7,992.00
King George County	1,145	79	1,000	0.300	\$25.30		1997	\$4,800.00	1996			\$5,060.00
LaCrosse, Town of	279	37	163	0.041	\$19.87	\$24.87	1995	\$1,000.00				\$3,905.37
Lawrenceville, Town of	896	176	3,832	0.958	\$11.55	\$17.34	1999	\$400.00	1993			\$2,310.00
Leesburg, Town of	10,382	679	10,930	2.730	\$17.38	\$25.33	1992	\$1,356.00	1995	\$5,359.00	2000	\$3,228.67
Lexington, City of	2,139	395	3,600	0.900	\$21.37	\$21.37	2000	\$500.00	1995			\$9,171.75
Loudoun County Sanitation Authority	38,992	669	29,160	7.290	\$18.49		1991	\$80.00	2000	\$4,933.00	2000	\$2,590.00
Louisa County Water Authority	30	26	797	0.239	\$12.50		2000		1985	\$750.00	1985	\$2,500.00
Manakin Water & Sewerage Corp.	127		80	0.020	\$25.75		1997	\$3,000.00	1992		1997	\$5,150.00
Marion, Town of	3,580	270	4,800	1.200	\$14.55	\$29.10	1995					\$2,850.30
Martinsville, City of	6,500	450	10,000	2.500	\$6.90	\$6.90	1997	\$500.00	1999	\$200.00	1967	\$902.40
Middleburg, Town of	435	146	289		\$45.00	\$45.00	1997	\$500.00	1997	\$4,500.00	1997	\$8,630.00
Montgomery County Public Service Authority	1,350	24	1,800	0.450	\$27.25		1996	\$500.00	1995	\$2,500.00	1997	\$3,507.67
Mount Jackson, Town of	825	25		0.180	\$16.10	\$24.15	1989					\$3,220.00
Narrows, Town of	911	2		0.146	\$24.00	\$39.74	1999	\$175.00				\$2,750.00
Nelson, County of	2141				\$37.10 (WTG)		2000	\$1,000.00	1993			\$4,567.42
New Market, Town	711	56		0.400	\$28.22	\$49.40	1995		1993			\$4,567.42

Locality	# Residential Sewer Units	# Non-Residential Sewer Units	# Equivalent Residential Sewer Connections	Average Daily Sewage Discharge (Millions of Gallons)	Residential Sewer Rate Inside (5,000 gallons per month)	Residential Sewer Rate Outside (5,000 gallons per month)	Last Sewer Rate Change	Residential Connection Fee (In town where applicable)	Last Connection Fee Rate Change	Residential Facility Fee (In town where applicable)	Last Facility Fee Rate Change	Sewer Charge-Business(1,000,000 gallons/month in town)
Pennington Gap, Town of	800	100	1,400	0.350	\$33.10	\$39.72	1999					\$4,709.60
Pittsylvania County Service Authority	926	65	1,240	0.310	\$18.50		1998	\$1,000.00				\$2,854.25
Portsmouth, City of	30,000	6,120		8.400	\$9.79	\$34.40	2000		2000		1990	\$1,944.00
Pound, Town of	484	72	1,500	0.375	\$26.40	\$34.40	1999	\$250.00				\$3,548.70
Prince George County	3,000	73			\$25.00		1997	\$3,000.00	1997			\$1,795.00
Prince William County Service Authority	59,935	2,212	61,920	15.480	\$25.75		2000			\$5,700.00	1997	\$4,210.35
Pulaski County Public Service Authority	294	51	875	0.396	\$21.00			\$500.00				\$3,011.00
Pulaski County Sewerage Authority	200	125					1987	\$300.00	1987		1987	\$3,267.00
Pulaski, Town of	4,067	240	5,600	1.400	\$26.87	\$53.74	1997	\$450.00	1997			\$3,090.00
Purcellville, Town of	1,178	180	1,400	0.350	\$30.15	\$60.30	1997			\$6,000.00		\$603.00
Radford, City of	4,300	425	5,500	1.370	\$16.35		1987	\$650.00	1990		1975	
Richlands, Town of	2,138	242	4,400	1.100	\$18.50	\$24.00	1994	\$300.00	1986			\$3,003.00
Richmond, City of	47,444	8,561	194,400	48.600	\$26.58	\$31.03	2000	\$30.00	1997		2000	
Roanoke County	13,299	1,347	20,000	5.132	\$15.31	\$15.31	1995	\$100.00	1984	\$1,500.00	1995	\$2,762.96
Roanoke, City of	3,100	3,200		36.000	\$11.34		1999					\$2,159.46
Rockbridge County Public Service Authority	510	123	672	0.124	\$19.75	\$19.75	2000	\$1,200.00	1989			\$3,950.00
Round Hill, Town of	555	45	555		\$28.45	\$39.70		\$450.00				
Salem, City of	7,034	1,154		5.300	\$12.75			\$1,700.00	1999			\$2,649.50
Shenandoah, Town of	800	59	600	0.150	\$21.30	\$30.60	1997	\$2,000.00	1997			\$4,002.20
South Hill, Town of	1,718	338	2,793	0.698	\$22.57	\$45.14	1999	\$1,500.00	1991			\$2,115.18
Southampton County	1,170	150			\$26.50	\$26.50	1996	\$400.00				
Spotsylvania County	17,569	1,213	18,782		\$14.84		1997	\$1,875.00	1999	\$2,850.00	1999	\$2,850.59
Stafford County	20,279	792	22,600	5.690	\$21.30		1997	\$500.00	1983		1999	\$3,376.04
Stanley, Town of	780	51	831	0.130	\$20.00	\$23.50	1999	\$2,000.00				\$1,759.00
Staunton, City of	8,890	999	12,280	3.070	\$14.27	\$21.41	1999		1995	\$640.00	1991	\$2,847.60
Stephens City, Town of	525	50	800	0.200	\$41.75		1997			\$2,100.00	2000	\$5,070.00
Stoney Creek Sanitary District	1,200	10	1,330	0.260	\$21.00	\$39.00	1994	\$1,500.00	1989			\$4,960.00
Strasburg, Town of	1,587	71	2,400	0.700	\$20.20	\$28.28	2000			\$3,000.00		\$4,998.50
Stuart, Town of	500	100		0.003				\$300.00				
Suffolk, City of	12,460	1,005			\$10.56		2000	\$1,165.00	2000	\$1,890.00	2000	\$2,112.00
Toms Brook Town of	492	23	560	0.090	\$29.00	\$29.00	1995	\$3,000.00	1995			\$10,949.00
Vienna, Town of	8,766	556	10,033	2.500	\$15.80	\$15.80	1998	\$3,200.00	1992		1992	\$12,640.00
Virgilina, Town of	95	120	28	0.007	\$35.00	\$35.00		\$500.00				
Virginia Beach, City of	154,116	4,690	124,800	31.200	\$11.38		1992		1987		1998	
Warrenton, Town of	2,840	205	3,040	1.170	\$29.40	\$44.10	1997	\$4,100.00	1997	\$4,100.00	1997	\$6,200.00
Washington County Service Authority	1,145	50	1,200	0.300	\$32.40	\$32.40	1997	\$800.00	1999	\$1,300.00	1999	\$3,415.40
Waynesboro, City of	7,700	400		2.600	\$17.45	\$31.90					1999	\$2,890.00
Winchester, City of	9,900	811	21,535	4.840	\$17.75	\$17.75	1995	\$2,200.00	1999			\$3,550.00
Wise, Town of	1,963	111			\$27.23	\$40.88	1991	\$500.00	1986			\$4,131.60
Wytheville, Town of	2,835	516		1.550	\$15.00	\$30.00	2000		1995			\$3,497.50



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