

10.0 FINANCIAL AND ADMINISTRATIVE ALTERNATIVES

10.1 Code of County of Spotsylvania

The Code of County of Spotsylvania, Virginia, adopted July 11, 2000 (Supplement No. 41), Chapter 22, authorizes the County to collect availability fees primarily to pay for existing and future water works or sewage works facilities. The value of availability fees are included in the Code for each water meter size that may be provided for the water and sewer service user; fees differ for residential, non-residential, and irrigation users. Water availability fees range from \$3,950 to \$14,770 for residential users and up to \$59,250 for irrigation users. Sewer availability fees range from \$2,850 to \$10,700 for residential users and up to \$56,500 for non-residential users.

The Code of County of Spotsylvania also authorizes the collection of a debt service charge of \$0.59 per month from each water service user and \$0.59 per month from each sewer service user. The Code does not identify the disposition of the debt service charges. The Code also authorizes the collection of connection and meter fees, to finance the cost of standard water connections and standard sewer connections (less than 10' deep, less than 45' long, and without a new manhole or road crossing).

Chapter 20, Subdivisions, of the Code requires a developer to pay for all necessary improvements within the proposed subdivision and to make a pro rata contribution for off-site water and sewer costs, provided: 1) the improvements are necessitated at least in part by the new development, 2) a general sewer and water improvements program has been defined for the area in which the subdivision is located, 3) the cost of water and sewer improvements in the program area has been estimated, and 4) an estimated water/sewer flow has been established for the area of the improvements program. The developer share of the off-site costs shall be limited to the proportion of the development share of water/sewer flow, as compared to the estimated total flow from the area of the improvements program.

10.2 Pro Rata Contribution Policies in Virginia

The Code of Virginia, Section 15.2-2243 allow a locality to provide a subdivision ordinance to require a developer to pay a pro rata share of the cost of providing reasonable and necessary sewerage, water and drainage facilities located outside the property limits of the land controlled by the developer and which are necessitated or required at least in part by construction of the new development.

The Code of Chesterfield County, Chapter 18 (Water and Sewers), defines a pro rata contribution program. In Chesterfield County, the developer must pay a connection fee that is the sum of a meter installation charge (equivalent to an availability fee) and a capital cost recovery charge (equivalent to a pro rata contribution for off-site costs). The capital cost recovery charge is the estimated cost of providing water and sewer facilities to serve the development. The Chesterfield County developer may be directed to by the County to construct an oversized line or force main or to construct utilities outside the limits of the development. For this construction, the developer is entitled to a refund of the construction costs, from capital cost recovery charges

already collected by the County from the area being developed (equivalent to the Water and Sewer Improvement Area).

The Code of the County of Henrico, Chapter 23, Water and Sewer, defines a similar local facilities fee and off-site and oversized mains credit policy.

The Code of the County of Hanover, Chapter 20, defines a credit paid to the developer for any portion of the cost of a pump station or other facility constructed by the developer that is included in the County's capital improvement program. The credit is paid to the developer as a deduction from the developer's water and sewer capacity fees. The amount of the credit cannot exceed the developer's water and sewer capacity fee payments.

The Code of County of Stafford, Chapter 25, authorizes the payment by developers of a pro rata share of the cost of providing reasonable and necessary water and sewerage facilities located outside the developer's property limits. The pro-rata share is defined as a proportionate share of total estimated cost of ultimate water and sewerage facilities required to serve a common area, when the common area is fully developed. The pro rata cost is the portion of the total estimate flow in the fully developed common area that is generated by the subdivision flow.

10.3 Implementation of Pro Rata Contributions to Fund 2002 Master Plan Revisions

All water and sewer infrastructure identified in the Spotsylvania County 2002 Master Plan Revisions, to meet build-out conditions, should be financed from Availability Fees and Pro Rata Contributions paid to the County by developers. Sufficient Availability Fees should be charged to fund all water and wastewater treatment projects identified in the 2002 Water/Sewer Master Plan Revisions. Sufficient Pro Rata Contributions should be charged to fund all water mains, booster stations, finished water storage tanks, sewage interceptors, sewer trunk mains, and sewer collectors identified in the 2002 Water/Sewer Master Plan Revisions.

To implement the Pro Rata Contribution policy, the following amendments to the Code of County of Spotsylvania may be required:

1. Designate in the Code the following five Water Improvement Areas within Spotsylvania County:
 - Five Mile Fork Pressure Zone
 - American Central Pressure Zone
 - Battlefield Pressure Zone, including Thornburg Development District
 - City Pressure Zone
 - Mine Road Pressure Zone
2. Define in the Code the Water Improvement Area boundary, the water improvements to meet build-out conditions, the estimated costs, and the estimated flow for each of the Water Improvement Areas, according to the Master Plan in effect. The estimated cost and flows are tabulated below.

Table 10.1 – Water Improvement Area Flows and Estimated Costs

Water Improvement Area Pressure Zones	1999 Flow Water Demand gpd	Build-out Flow Water Demand gpd	Cost of Water Improvements
Five Mile Fork	1,561,557	2,962,087	\$21,220,000
American Central	91,126	359,032	\$1,110,000
Battlefield	2,928,861	9,063,351	\$71,160,000
City	710,134	759,359	\$900,000
Mine Road	66,256	3,550,549	\$5,800,000
TOTAL	5,357,934	16,694,378	\$100,190,000

3. Designate in the Code the following seven Sewer Improvement Areas within Spotsylvania County:
 - Courthouse Area
 - American Central System
 - Thornburg Development District
 - Hazel Run Drainage Basin
 - Deep Run Drainage Basin
 - New Post (Rappahannock River) Basin
 - Massaponax Creek Drainage Basin

4. Define in the Code the Sewer Improvement Area boundary, the sewer improvements to meet build-out conditions, the estimated costs, and the estimated flow for each of the Sewer Improvement Areas, according to the Master Plan in effect. The estimated cost and flows are shown in Table 10.2.

Table 10.2 – Sewer Improvement Area Flows and Estimated Costs

Sewer Improvement Area	1999 Flow Water Demand gpd	Build-out Flow Water Demand gpd	Cost of Sewer Improvements
Courthouse Area	171,302	799,935	\$1,050,000
American Central	193,547	593,299	\$3,699,000
Thornburg Development District	132,547	2,751,565 + 3 mgd industrial	\$22,789,000
Hazel Run	1,334,068	2,302,833	\$5,724,000
Deep Run	319,363	1,365,987	\$670,000
New Post (Rappahannock River)	66,256	427,166	\$777,000
Massaponax Creek (not including New Post, Courthouse, and American Central areas)	2,498,560	8,453,592	\$27,418,000
TOTAL	4,715,643	16,694,378	\$62,120,000

5. Define in the Code the method of calculating the flow (water demand) generated by new development, as follows:
 - 200 gpd/residential connection for residential development
 - 625 gpd/acre for Commercial 2 development
 - 1000 gpd/acre per acre for Commercial 3 development
 - Documented water demand projections for all other development

6. Define in the Code the method of calculating the pro rata share of build-out water and sewer improvements. The pro rata share should be the sum of the following factors:
 - The portion of the Build-out Water Demand in the Water Improvement Area (in which the development is located) that is generated by the development flow.
 - The portion of the Build-out Sewer Demand in the Sewer Improvement Area (in which the development is located) that is generated by the development flow.
 - The portion of the Build-out Sewer Demand in the Massaponax Creek Sewer Improvement Area that is generated by the development flow. This portion applies only to development located within the Courthouse Area, American Central, Thornburg Development District, and New Post (Rappahannock River) Sewer Improvement Areas.

7. Establish in the Code a cost reimbursement program that would enable a developer to:
 - Construct portions of the water and sewer improvements defined in the Master Plan in effect, that are integral with new development
 - Receive a credit from the County for the off-site improvements or oversized water and sewer facilities. The credit would be applied against the pro rata share contribution.
8. Define in the Code the limits of County sewer service. Service will be provided only in designated Sewer Improvement Areas and up to 200 feet horizontally outside the designated areas; development outside the designated areas must be able to be served by a gravity sewer no deeper than 15 feet.

10.4 Adequacy of Availability Fees

The total cost, in 2000 dollars, of all water and sewer infrastructure improvements to meet build-out conditions is approximately \$163 million, of which \$180 million is for water improvements and \$63 million is for sewer improvements. An additional \$50 million will be required to expand the FMC and Massaponax wastewater treatment plants to build-out capacity. An additional \$20 million will be required for water resource development and water treatment production to meet build-out conditions. Total cost for all infrastructure and treatment projects to meet build-out conditions is \$184.5 million. This investment will coincide with a growth in average annual dry weather water demand in Spotsylvania County from 4.72 mgd in 1999 to 16.7 mgd at build-out and a corresponding growth in number of water/sewer service users from 24,259 in 1999 to approximately 87,400 (based on 1999 demand of 191 gpd/ERU). The approximately 63,000 new water service users will generate a minimum of \$249 million from water availability fees and \$180 million from sewer availability fees.

10.5 Future Water and Sewer Master Plan Revisions

This 2002 Water/Sewer Master Plan Revision report includes the following electronic documents (refer to Appendices G and H) that can be used to facilitate future Water and Sewer Master Plan Revisions:

- Reconciled 1999 E911 and Water Billing Address File Spreadsheet in Excel
- Sub-basin boundaries in ArcView and AutoCAD
- 1999 Spotsylvania County Land Use and Zoning Shape File in ArcView
- 1999 Spotsylvania County Developed/Undeveloped Area Shape File in ArcView
- Water Quantity Calculation Program in Excel

It is recommended that Spotsylvania County eliminate the use of separate E911 and water billing address files. Once these two files are consolidated and reconciled, every existing and new water meter on the water billing address file will automatically have an E911 geographic location. Determining the updated average annual dry weather water demand in each sub-basin (for comparison with 1999 demands, build-out demands, and water and sewer infrastructure capacities) will then become a routine process.