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6.0 WATER DEMAND MANAGEMENT INFORMATION

The Local and Regional Water Supply Planning Regulation (9 VAC 25-780-110) requires the Plan to address conservation as a part of overall water demand management in accordance with practices for more efficient water use, water conservation measures through reduction of use, and practices to reduce water loss.[1] Water conservation as part of overall water demand management is described in the following sections.

6.1 Practices for More Efficient Use

As required by 9 VAC 25-780-110.A.1, the regional water plan shall include information that describes practices for more efficient use of water that are used within the region. The type of measures to be described may include, but are not limited to, the adoption and enforcement of the Virginia Uniform Statewide Building Code sections that limit maximum flow of water closets, urinals and appliances; use of low-water use landscaping; and increases in irrigation efficiency. This section describes practices for more efficient water use in the WPPDC region. Information regarding practices for more efficient water use was not provided by the Town of Chatham or the Town of Hurt.

6.1.1 Virginia Uniform Statewide Building Codes

The VUSBC is a state regulation promulgated by the Virginia Board of Housing and Community Development (Board). The Board is appointed by the Governor of Virginia for the purpose of establishing minimum regulations to govern the construction and maintenance of buildings and structures. The provisions of the VUSBC are based on nationally recognized building and fire codes published by the International Code Council, Inc. The 2003 editions of the International Codes are incorporated by reference into the VUSBC.

The following jurisdictions in the WPPDC region have adopted the VUSBC: the cities of Danville (1994) and Martinsville (1973); the counties of Henry (1973) and Patrick (1991); and the towns of Stuart (1991) and Ridgeway (1973). The VUSBC requires 1.6 gallon-per-flush toilets and limits the maximum allowable flow rates for showerheads and faucets to 1.5 gallons-

[1] 9 VAC 25-780-110 A.

per-minute. The codes are generally enforced in the region by the each County's Building Official through plan reviews and routine inspections. In addition, each County enforces the codes in the towns within the County.

6.1.2 Other Practices for Water Use Efficiency

In addition to adopting the VUSBC, the City of Martinsville, Patrick County, and Town of Stuart implement additional water use practices for more efficient water use. Practices for more efficient water use include, but are not limited to, practices to increase irrigation efficiency, participating in the U.S. Environmental Protection Agency (USEPA) WaterSense Program, adopting ordinances declaring wasteful water use unlawful, and other practices.

In 2008-2009, the City of Martinsville will consider the option to charge customers for sewer, including irrigation. In addition, the City of Martinsville Code, Section 23-20, states that it is considered unlawful to run water in a wasteful manner and service can be discontinued. When water leaks are identified in Patrick County and the Town of Stuart, the Town of Stuart reserves the right to turn off water until repairs are made.

There are no ordinances or policies in place at this time regarding more efficient water use for the City of Danville; Henry County, Pittsylvania County, or the Town of Gretna.

6.2 Water Conservation Measures through Reduction of Use

As required by 9 VAC 25-780-110.A.2, the regional water plan shall include information describing the water conservation measures used within the planning area to conserve water through the reduction of use. The types of measures to be described may include, but are not limited to, technical, educational and financial programs. This section describes water conservation measures through reduction of use in the WPPDC region. Information regarding water conservation measures through reduction of use was not provided by the Town of Chatham or the Town of Hurt.

6.2.1 Technical Programs

The following implement technical programs to address water conservation through reduction of use: City of Danville and HCPSA. Practices to address water conservation through reduction of use may include, but are not limited to, adjusting standard operating procedures at facilities to

reduce water use, installation of low-flow and/or no-flow fixtures (e.g., faucets, showers, urinals) in government buildings and facilities, offering "yard taps" to customers, using Clean Water State Revolving Funds (CWSRF) or Drinking Water State Revolving Funds (DWSRF) to upgrade/retrofit facility fixtures, build new facilities, or purchasing efficient landscape irrigation equipment for publicly owned facilities (e.g., buildings, parks, golf courses).

The City of Danville will provide lawn irrigation taps to customers upon request. The lawn irrigation taps do not include wastewater fees. In addition, Danville installs low-flow fixtures through an adopted ordinance (No. 97-8.15, 8-5-97). Danville did not provide a copy of this ordinance and additional details are not available at this time. Finally, Danville has used CWSRF or DWSRF to upgrade or retrofit facility fixtures, build new facilities, or purchase efficient landscape irrigation equipment for publicly owned facilities; however, additional details are not available at this time.

The HCPSA adjusted their standard operating procedures by reducing filter backwash frequencies in an effort to improve water conservation.

The City of Martinsville, counties of Patrick and Pittsylvania, and towns of Gretna and Stuart do not currently implement technical programs to address water conservation through reduction of use.

6.2.2 Educational Programs

The HCPSA attends trade shows and community events and provides educational materials addressing water conservation issues. In addition, the HCPSA plans to visit the local schools in the area to education students on the importance of water conservation.

The cities of Danville and Martinsville; counties of Patrick and Pittsylvania; and towns of Gretna and Stuart do not currently implement educational programs to address water conservation through reduction of use.

6.2.3 Financial Programs

The cities of Danville and Martinsville; counties of Henry, Patrick, and Pittsylvania; and towns of Gretna and Stuart do not currently implement financial programs to address water conservation through reduction of use.

6.3 Practices to Reduce Water Loss

As required by 9 VAC 25-780-110, the WPPDC Plan shall include information that describes practices to address water loss in the maintenance of water systems to reduce unaccounted for water loss. The types of items to be described may include, but are not limited to, leak detection and repair and old distribution line replacement. This section describes practices to reduce water loss in the WPPDC region.

6.3.1 Connection Meters

The following have both source and service connection meters: City of Danville, City of Martinsville, HCPSA, and PCSA. The City of Danville reads source meters and service meters on a monthly basis. The City of Martinsville reads service meters on a monthly basis and source meters are read daily. According to Martinsville, the majority of service meters were replaced during the 1980's and now are being considered for replacement and possible upgrade to an automatic meter reading system. Meter testing is completed by request or when receiving questionable readings.

The HCPSA reads both source and service meters on a monthly basis. Meter inventory is monitored continuously and meter maintenance and replacement is completed on an as needed basis.

The PCSA reads source meters on a monthly basis and service meters on a bimonthly basis. Service meter readings are compared to source meter readings each month. Service meters are replaced as needed.

The following only have service connection meters: Patrick County, Town of Gretna, Town of Ridgeway, and Town of Stuart. Patrick County and the Town of Stuart did not indicate type of meter or how often a meter is read; however, both indicated that residential meters are tested annually and meters are replaced when they no longer work properly or are out of calibration.

The Town of Gretna reads service meters on a bimonthly basis and the Town of Ridgeway reads service meters on a monthly basis. The HCPSA manages all meters for the Town of Ridgeway.

6.3.2 Leak Detection

The following have implemented leak detection practices to reduce water loss: City of Danville, City of Martinsville, Patrick County, Town of Stuart, and HCPSA. Leak detection practices include, but are not limited to, regularly scheduled water audits, development of education programs to reduce customer-side water loss such as offering leak detection tablets and conducting customer leak detection audits.

The City of Martinsville monitors and reviews the amount of water produced each month to the amount of water sold each month to determine unaccounted for water. In addition, the system notes potential leaks when excessive or abnormal customer water use is identified. The City of Martinsville Code, Section 23-14, "Terms and Conditions of Water & Sewer Service" states that leaks are the responsibility of the customer. Failure to repair leaks may result in disconnection of service.

The HCPSA also monitors and reviews the amount of water produced each month to the amount of water sold each month to determine unaccounted for water and identify trends. In addition, the HCPSA offers a home audit form to customers as well as information to identify potential leaks.

Patrick County and the Town of Stuart complete monthly water audits and meters are continuously monitored each day at the water treatment plant (WTP) by plant operators.

The City of Danville Code, Section 38-48, allows customer rebates or credits in case of certain water leaks. Once the leak has been repaired, a plumbing inspector inspects the repair for code compliance. A letter is then drafted requesting a rebate. The inspections office forwards the letter to customer service where the rebate is approved or rejected. The following is a section from the City of Danville Code discussing customer rebates or credits:

(a) Subject to the approval of the City Manager, a rebate or credit may be allowed for an excessive flow of water through a meter due to a leak in, or a rupture of, a water pipe caused by

severe weather conditions; due to an undetected leak in, or rupture of, an underground water pipe; or due to an undetected leak in, or a rupture of, a water pipe in the area where the City has made modifications and/or improvements of water distribution system for the purpose of improving and increasing water pressure if: (1) upon detection, such defect is promptly corrected according to the requirements of the law; and (2) A written statement is provided to the Director of the Division of Water and Gas Distribution by the person lawfully making such repairs and corrections setting forth the date and nature of the corrections and repairs made; and (3) Such corrections and repairs are inspected and approved by the Inspections Division of the Department of Community Development; (4) If the leak is in an area where the City has made modifications and/or improvements to the water distribution system for the purpose of improving and increasing water pressure, such leak must have occurred or been detected within sixty (60) calendar days of the increase in pressure.

(b) The rebate or credit provided for in this section shall be allowed only for the billing period in which the defect is detected and repaired and, where applicable, for that portion of the subsequent billing period until such defect is promptly repaired; provided, however, that in all cases where there are less than twelve (12) regularly scheduled billing periods for water for the premises in any calendar year, the water flow to such premises shall, for the purposes of this section, be prorated as if there were twelve (12) such billing periods in each calendar year and the charges, rebates and credits provided for herein shall be calculated accordingly.

(c) For the billing period for which a rebate or credit is requested under this section, a charge shall be made, at the then applicable regular rate of the applicable minimum charge, whichever is greater, for the normal flow of water to the premises during such period, the normal flow of water to be the average flow of water to the premises for the twelve (12) preceding billing periods during which the premises were occupied, and the rebate or credit shall be for the flow of water to the premises during such period which is in excess of the average normal flow of water for which such regular or minimum charges are to be made; provided, however, that for such excessive flow of water, a charge shall be made for at least the actual cost of treatment and delivery thereof.

(d) The provisions contained in this paragraph, providing for a credit or rebate in the case of an excessive water flow in areas of the water distribution system where the City has made modifications and/or improvements for the purpose of improving and increasing water pressure, are intended to afford a method of relief to the customers of the City's water distribution system and no such rebate or credit shall be deemed or construed as an admission of liability on the part of the City.

(Code 1962, § 32-26; Ord. No. 86-9.9, § 3, 9-1-86; Ord. No. 91-10.13, 10-1-91)

6.3.3 Line Replacement

The following have programs or operating strategies in place for the repair or replacement of water mains, service connections, fire hydrants, valves, etc. to reduce water loss: City of Danville, City of Martinsville, Patrick County, Town of Stuart, and HCPSA.

The City of Danville recently developed a distribution system pipe replacement program. The City of Martinsville, Patrick County, and Town of Stuart all repair water main breaks as soon as possible. In Patrick County and the Town of Stuart water main breaks are repaired as soon as possible with a two hour maximum time frame, service connections are repaired with a maximum time frame of eight hours, and fire hydrants are repaired or a new hydrant is installed as soon as possible. Water valves are installed as needed.

The Henry County Capital Improvement Plan (CIP) includes funds for the HCPSA to replace water lines in older sections of the system, replace fire hydrants, and complete water plant improvements.

The City of Martinsville implements a fire hydrant repair and replacement program that is funded through the CIP and has been active for over two years. In addition, Martinsville building inspectors and line maintenance personnel continuously monitor for unauthorized connections.