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## **8.0 STATEMENT OF NEED**

In accordance with the Regulations (9 VAC 25-780-130), a water supply plan shall determine the adequacy of existing water sources to meet current and projected demand based upon the information and analyses conducted by 9 VAC 25-780-70 through 9 VAC 25-780-110, and provide a Statement of Need for the water systems covered by the Plan. In addition, the plan shall present alternatives to remedy the inadequacies discovered in these analyses.

The following discussion evaluates water demand projections for each system in the region as compared to limiting supply capacity in order to estimate whether a water supply surplus or deficit will result from future demand through the planning period (i.e., through the year 2060). Based upon this analysis, a Statement of Need is presented for the systems included in the region that are projected to experience a water supply deficit (Table 8.2.10).

### **8.1 Methodology**

Water demand projections were presented in Section 5.0, and known capacities of water resources identified. Projected water demand through the planning period (through 2060) was compared to limiting capacity to identify a current or future surplus or deficit. Assumptions were made regarding economic and demographic trends, as discussed below. Table 8.1.1 below summarizes the total existing capacity, along with the limiting capacity factor for each community in the WPPDC region.

**Table 8.1.1 Summary of PWS Capacities for WPPDC Localities**

<b>Community</b>	<b>Total Existing PWS Capacity (MGD)</b>	<b>Limiting Factor</b>
Henry County	4.0	WTP Design Capacity (4.0 MGD)
Patrick County	N/A	No demand projections provided
Pittsylvania County	0.0984	VDH Permitted Capacity (0.0984 MGD)
City of Danville	18	WTP Design Capacity (18.0 MGD)
City of Martinsville	10	WTP Design Capacity (10.0 MGD)
Town of Chatham	1.32	WTP Design Capacity (1.32 MGD)
Town of Gretna	0.230	Safe Yield of Reservoir (0.230 MGD)
Town of Hurt	N/A	No demand projections provided
Town of Stuart	0.776	WTP Design Capacity (0.776 MGD)

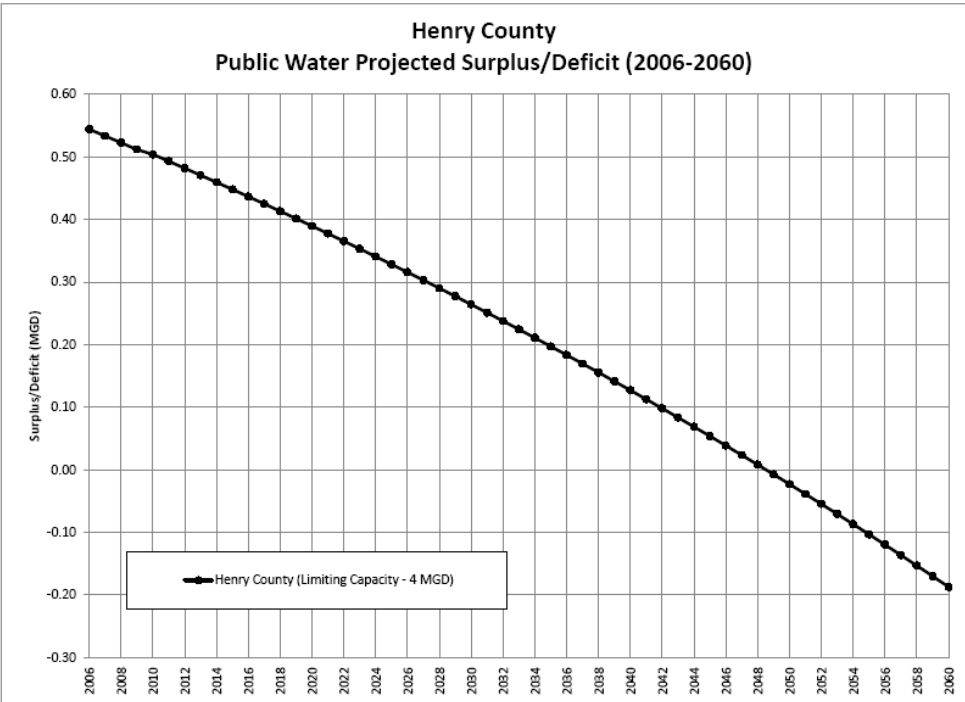
## **8.2 Statements of Need by Community**

Water supply surplus or deficit results for each water system addressed in the Planning Region are identified in the following sections along with graphical representation of the surplus/deficit expected for each utility from 2006 through 2060. A Statement of Need, if applicable is presented for the water systems that are projected (or currently experience) a deficit in water supply. Table 8.2.10 summarizes the Statement of Need for all water systems included in this Water Supply Plan.

### **8.2.1 Henry County**

Henry County currently maintains a surplus (0.50 MGD) in available water resources. However, Figure 8.2.1.1 shows that, based upon the water demand projections, Henry County is anticipated to experience a deficit in available water resources starting in 2049, ultimately ending with a 0.19 MGD deficit in 2050. Public water supply in Henry County comes from the Upper Smith River Water Treatment Plant (WTP), as well as groundwater. The WTP has a limiting capacity of 4.0 MGD.

Figure 8.2.1.1 WPPDC Water Supply Plan Statement of Needs - Henry County



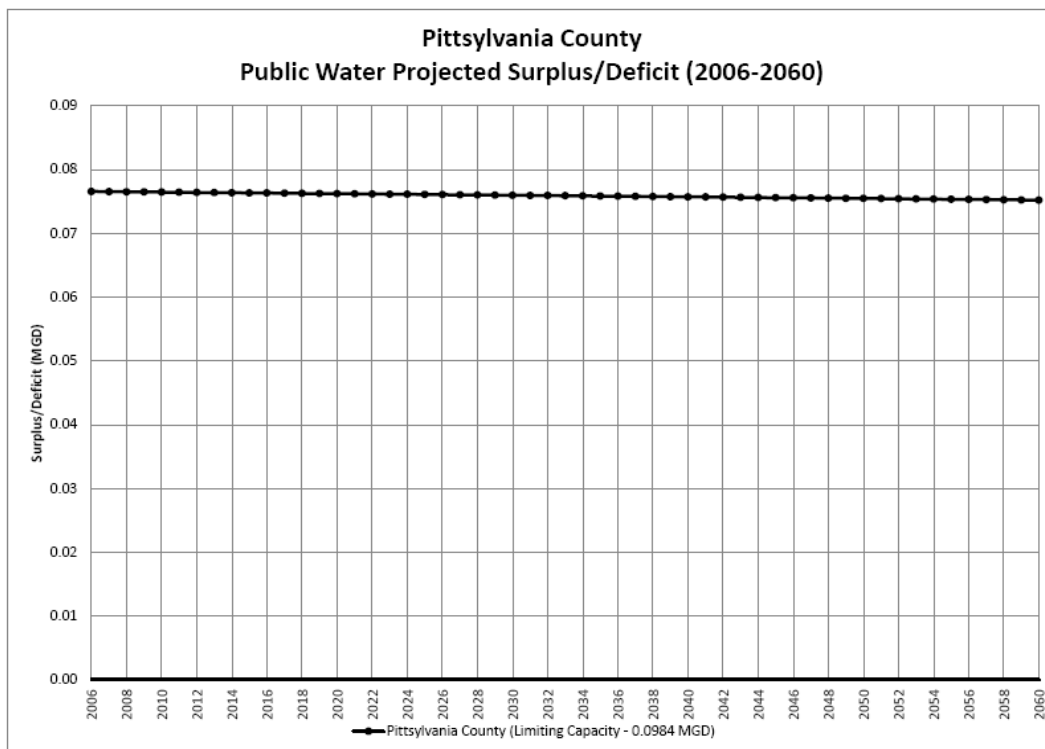
### 8.2.2 Patrick County

No public demand projections provided, as Patrick County has no public system.

### 8.2.3 Pittsylvania County

Based upon the water demand projections, Pittsylvania County maintains a surplus (2.11 MGD) in available water resources. Figure 8.2.3.1 shows that Pittsylvania County will not experience a water deficit in 2060 but will maintain a surplus of approximately 0.08 MGD. Demands are anticipated to stay the same through 2060. Public water supply in Pittsylvania County comes primarily from groundwater, with a limiting capacity of 0.0984 MGD.

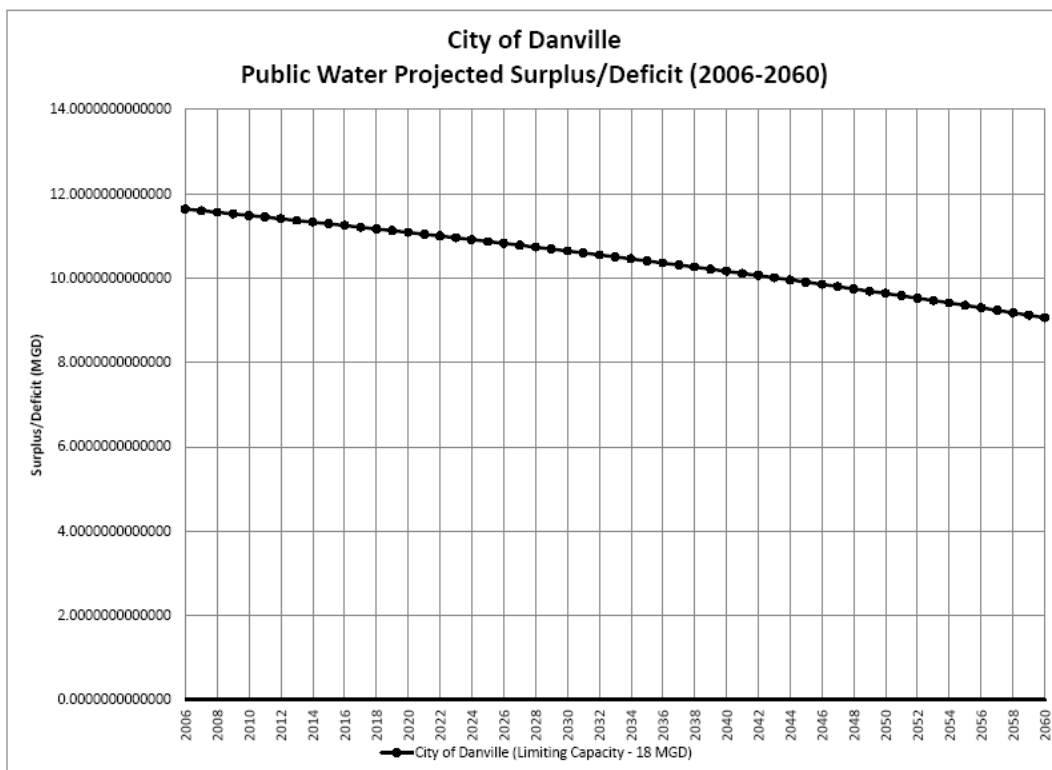
**Figure 8.2.3.1 WPPDC Water Supply Plan Statement of Needs – Pittsylvania County**



## 8.2.4 City of Danville

Based upon water demand projections, the City of Danville is currently experiencing a surplus (11.6 MGD) in available water resources. Figure 8.2.4.1 shows that the City will not experience a water deficit in 2060 but will maintain a surplus of approximately 9.06 MGD. Public water supply in Henry County comes from the Dan River. The WTP has a limiting capacity of 18.0 MGD.

**Figure 8.2.4.1 WPPDC Water Supply Plan Statement of Needs – City of Danville**

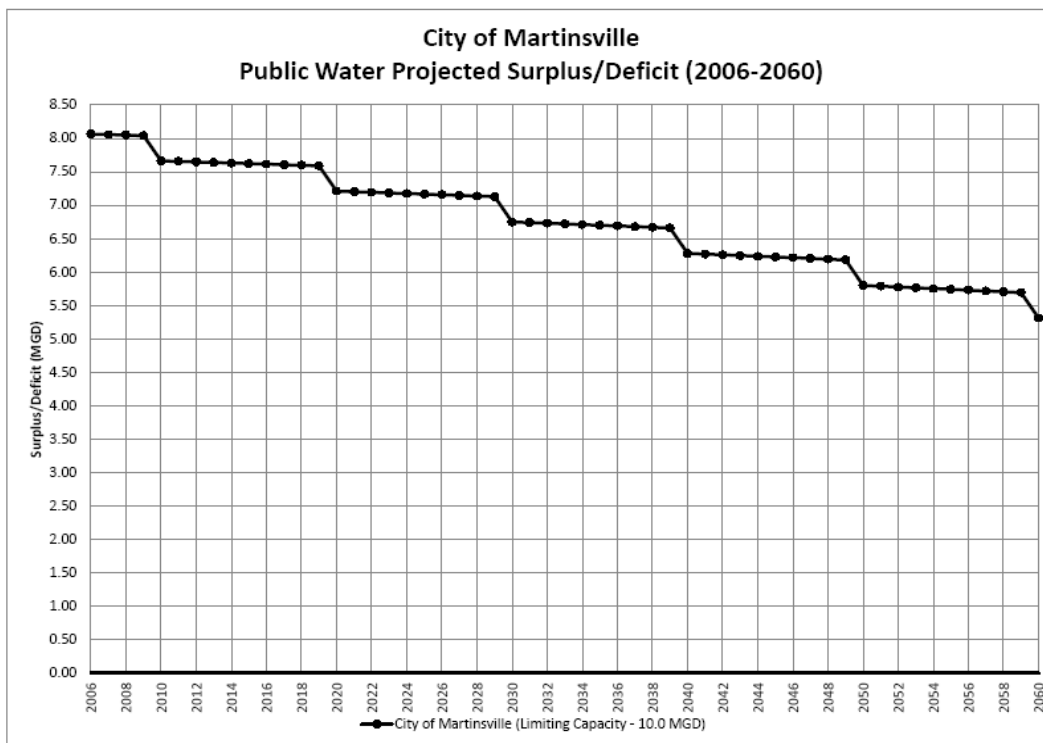




### 8.2.5 City of Martinsville

Based upon water demand projections, the City of Martinsville is currently experiencing a surplus (8.04 MGD) in available water resources. Figure 8.2.5.1 shows that the City will not experience a water deficit in 2060 but will maintain a surplus of approximately 5.31 MGD. The primary public water supply in the City of Martinsville comes from Beaver Creek Reservoir. The WTP has a limiting capacity of 10.0 MGD.

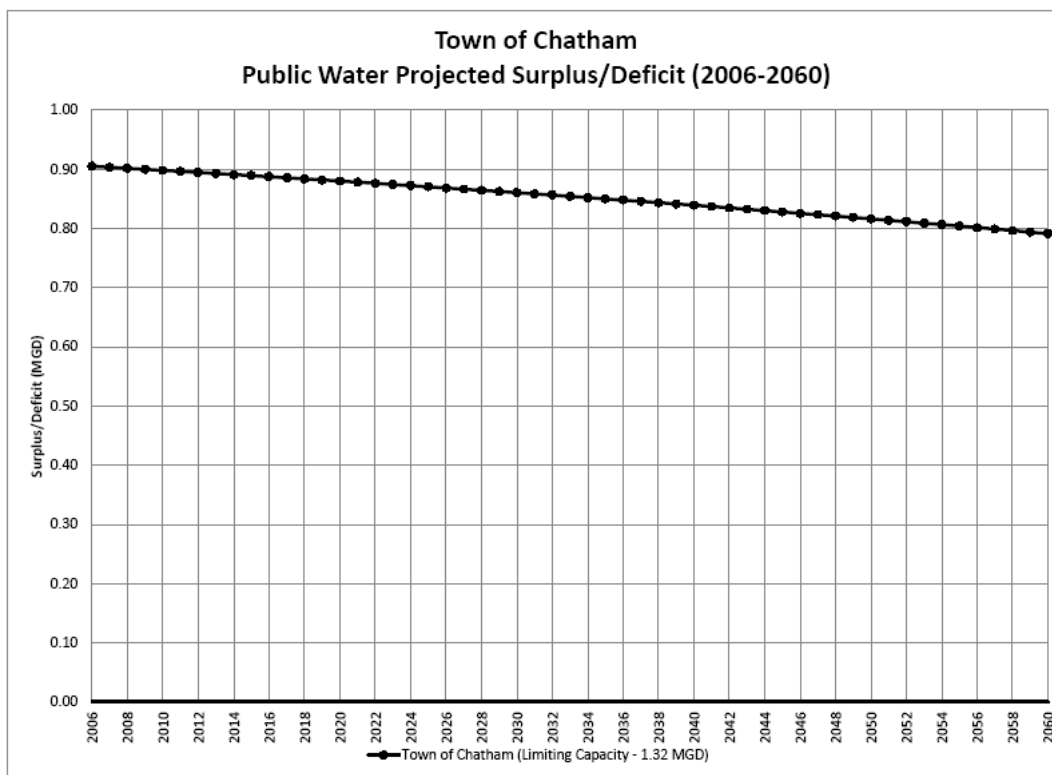
**Figure 8.2.5.1 WPPDC Water Supply Plan Statement of Needs – City of Martinsville**



## 8.2.6 Town of Chatham

Based upon water demand projections, the Town of Chatham is currently experiencing a surplus (0.91 MGD) in available water resources. Figure 8.2.6.1 shows that the City will not experience a water deficit in 2060 but will maintain a surplus of approximately 0.79 MGD. Public water supply in the Town of Chatham comes from the Cherrystone Creek Reservoir. The WTP has a limiting capacity of 1.32 MGD.

**Figure 8.2.6.1 WPPDC Water Supply Plan Statement of Needs – Town of Chatham**



### 8.2.7 Town of Gretna

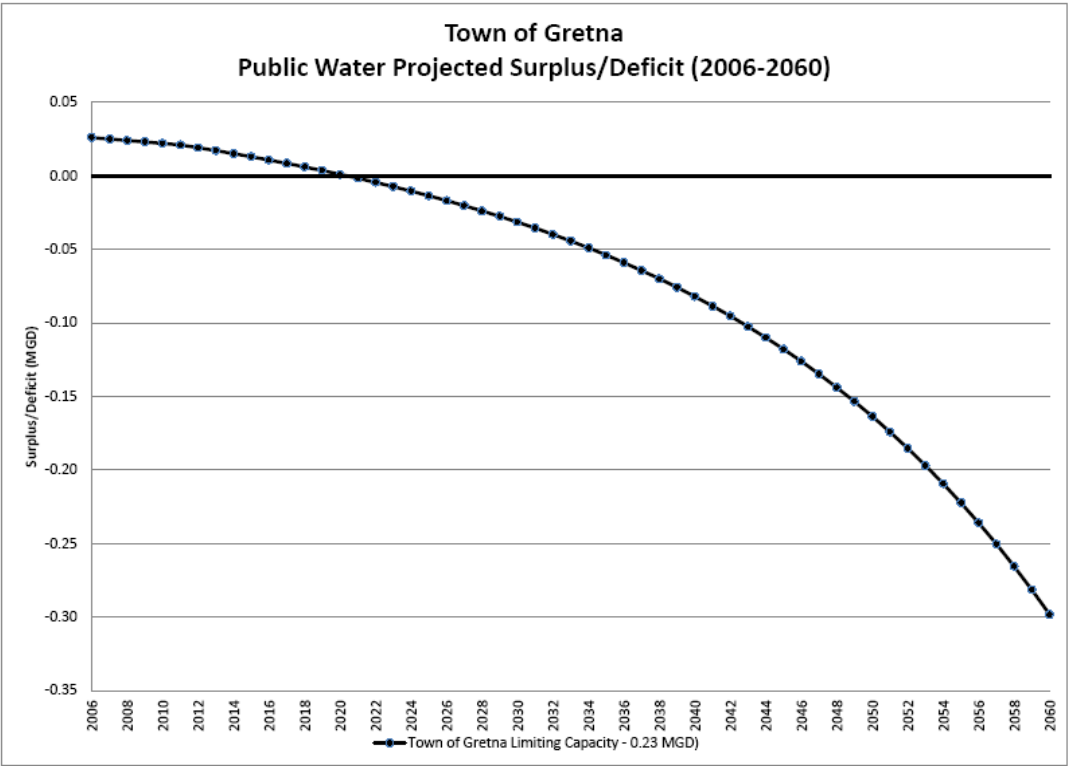
The Town of Gretna currently maintains a surplus (0.03 MGD) in available water resources. However, Figure 8.2.7.1 shows that, based upon the water demand projections, the Town of Gretna is anticipated to experience a deficit in available water resources starting in 2023, ultimately ending with a 0.3 MGD deficit in 2060.

The Town of Gretna has recognized the need for additional raw water capacity or an alternate water supply over the last 30 years. This need became more apparent when the existing Georges Creek Reservoir nearly went dry during the drought of 2002. In order to maintain service during the drought of 2002, the Town of Gretna constructed a temporary raw water pipeline from an unnamed tributary of Whitethorn Creek to the Georges Creek Reservoir, which allowed the Town to maintain water service.

Following the drought of 2002, the regional VDH Office of Drinking Water (ODW) in Danville determined that the safe yield of the Georges Creek Reservoir was approximately 0.18 MGD, which is significantly less than the permit capacity of 0.432 MGD. As a result, the ODW reduced the permit capacity and requested the Town of Gretna develop an alternate water supply.

On June 11, 2008, the Town of Gretna entered into a Consent Order with VDH, which gives the Town until June 1, 2012 to develop a water supply alternative or the ODW will permanently reduce the Town's design capacity.

Figure 8.2.7.1 WPPDC Water Supply Plan Statement of Needs – Town of Gretna



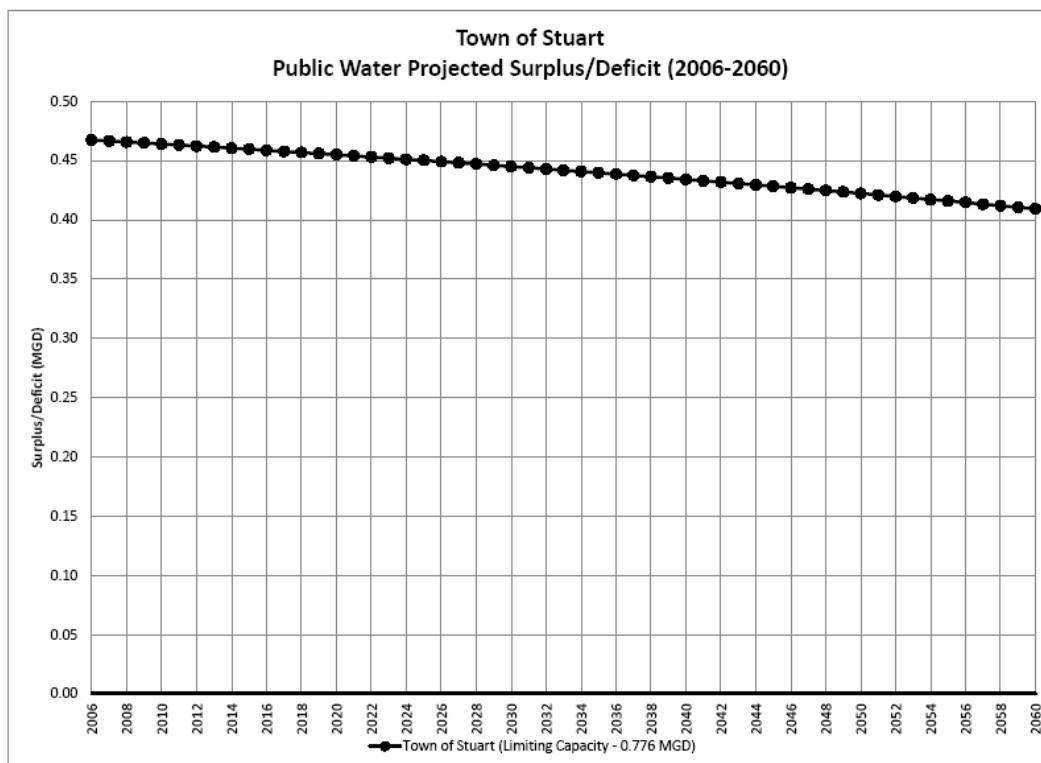
#### 8.2.8 Town of Hurt

No demand projections provided. The Town purchases 36 million gallons of water per year from Altavista.

### 8.2.9 Town of Stuart

Based upon the water demand projections, the Town of Stuart currently maintains a surplus (0.47 MGD) in available water resources. The Town of Stuart does not rely on bulk water purchases. Figure 8.2.9.1 shows that the Town of Stuart will not experience a water deficit in 2060 but will maintain a surplus of approximately 0.41 MGD. Public water supply in the Town comes from the South Mayo River. The Town of Stuart has a VDH permitted withdrawal amount and limiting capacity of 0.776 MGD.

**Figure 8.2.9.1 WPPDC Water Supply Plan Statement of Needs – Town of Stuart**



## 8.2.10 Regional Overview

Based upon the individual statements of need, a summary of the water supply surplus and deficits is shown below. A regional surplus of 15.2 MGD will be realized if the existing public water systems implement the use of system interconnections to provide shared water sources by 2060. Some uncertainty in these numbers should be expected when projecting 50 years into the future. Data is based on projected demands and current limiting capacities as reported by each community.

**Table 8.2.10 Summary of 2060 Water Needs by Community and as the Total Region**

Community	2060 Water Demand Projections			Total Existing PWS Capacity	Public WS Surplus or Deficit
	Public Systems	Private Systems	Total		
	MGD	MGD	MGD	MGD	MGD
Henry County	2.57	4.83	8.91	4.0	-0.19
Patrick County	N/A	2.99	2.99	N/A	N/A
Pittsylvania County <sup>1</sup>	0.02	11.94	11.96	0.0984	0.08
City of Danville	8.94	1.30	10.24	18.0	9.06
City of Martinsville	4.69	0	4.69	10.0	5.31
Town of Chatham	0.53	0	0.53	1.32	0.79
Town of Gretna	0.53	0	0.53	0.230	-0.30
Town of Hurt <sup>2</sup>	0.12	N/A	0.12	N/A	N/A
Town of Stuart	0.37	0.003	0.37	0.776	0.41
<b>Total</b>	<b>17.8</b>	<b>21.1</b>	<b>40.3</b>	<b>34.4</b>	<b>15.2</b>

<sup>1</sup>Pittsylvania County purchases water from the HCPSA, Danville, Chatham, Gretna, and Altavista.

<sup>2</sup>The Town of Hurt purchases water from the Town of Altavista.