

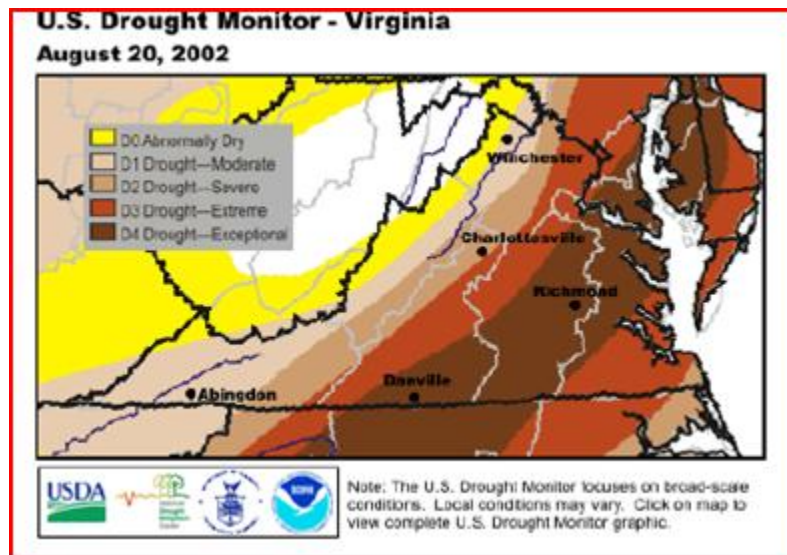
# BUCKINGHAM COUNTY AND TOWN OF DILLWYN Regional Water Supply Plan 2009

## I. EXECUTIVE SUMMARY

### Regulation Background

In 1977, the State Water Study Commission was charged with the task of overseeing water supply planning for the state. However, the implementation of the Clean Water Act diverted resources and attention from water supply matters. Partially, in reaction to the severe drought of 1999-2002, the Virginia Water Supply Task Force was organized.

The years 1999-2002 and the drought conditions created a heightened appreciation of water supply planning and water resource management. The need to determine adequacy of future water supply and formulate plans to react to future drought became apparent in those years of rainfall shortage. As a result of this situation, in 2002, Governor Mark Warner commenced the Virginia Water Supply Initiative. Aimed at local governments understanding their role in water supply management, along with the Department of Environmental Quality (DEQ), supporting the means of healthy water supplies, this initiative began with an overall effort to examine the issue regionally. Thus, a stakeholder committee was formalized in March 2003. The Water Policy Technical Advisory Committee (WPTAC) was tasked to create a Water Supply Planning Regulation.



Representing local, regional, state, and the federal government, along with representatives from conservation, agriculture, trade organizations, power generation, water production, recreation, and academia, the WPTAC was formed with thirty members. A two year process

based on consensus ensued. Then the WPTAC provided a draft of the Local and Regional Water Supply Regulation to DEQ. This draft was forwarded to the State Water Commission. On 28 June 2005, the regulation was approved and became effective 2 November 2005.

*These completed local and regional plans will be reviewed by the Department of Environmental Quality and a determination will be made by the State Water Control Board on whether the plans comply with this regulation.*

*Within five years of a compliance determination by the board the plan will be reviewed to assess adequacy, and significant changes will require the submission of an amended plan and review by the board. All local programs will be reviewed, revised and resubmitted to the Department of Environmental Quality every ten (10) years after the last approval.*

Deadlines were established for submission of these Plans based on population. The Buckingham County and Town of Dillwyn Water Supply Plan is a regional plan and, therefore, shall be submitted no later than 2 November 2011.

### **Buckingham County/Town of Dillwyn Water Supply Plan (BDWSP) Background**

In early 2006, the Commonwealth Regional Council (CRC) notified member localities of this requirement. Shortly thereafter, during the development of the Buckingham Comprehensive Plan, Buckingham County and the Town of Dillwyn began discussions as to how they could come together to address the requirements of having a water supply plan. To comply with the regulation, both localities agreed to collaborate in a regional plan.

On 12 December 2008, notification was received from the Virginia Department of Environmental Quality (VDEQ) that funds in the amount of \$5,500 were available from the FY 2009 Water Supply Planning Grant Program for the completion of two tasks under Phase I. Through this planning project, Task 1, 9 VAC 25-780-70, Existing Water Source Information, and Task 2, 9 VAC 25-780-80, Existing Water Use Information, will be completed.

It is the intent of the jurisdictions to apply again in future rounds for additional grant money under the Local and Regional Water Supply Planning Competitive Grants Program to complete a Phase II and Phase III Water Supply Planning Proposal. It is anticipated the additional grant funds will be required for the completion of the following remaining elements: Existing Resource Information, Projected Water Demand Information, Water Demand Management Information, Drought Response and Contingency Plans, and Statement of Need and Alternatives Plan. If this grant program is not active or the localities are not successful in the competition it is the intent of these localities to locally fund both the Phase II and Phase III initiatives.

Data collected for the Phase I elements was primarily gathered through local water treatment plant operators, the Virginia Department of Health-Office of Drinking Water, the Buckingham County Health Department, and the Virginia Department of Environmental Quality. Furthermore, a Water Supply Planning Working Committee was formed to review all material. The Committee was made up of the Buckingham County Administrator, the Buckingham Director of Utilities, and representatives from Planning, Zoning and the Water Department. This review ensured that all required information in the Regional Water Supply Plan collected was the most recent and correct.

Buckingham County and the Town of Dillwyn are committed to addressing water needs for their jurisdictions. As a reflection of this commitment, a Strategy is identified in the 14 July 2008 adopted Buckingham County Comprehensive Plan to develop a long-term Master Plan...to accommodate...growth in service areas...for a 10 to 20 year period. The information obtained through this Water Supply Plan will complement and enhance the success of meeting this Goal and Objective.

While Buckingham County is rich in its water supply, preliminary research indicates that periods of drought have had a major effect on the County. During the drought conditions of 1999-2006, there were [redacted] replacement well applications issued in the County (additional current water resources WaterWatch drought information can be viewed at <http://water.usgs.gov/waterwatch/?m=dryw&r=va&w=dryw%2cmap> )

Therefore, the intent of the final Buckingham County and Town of Dillwyn Regional Water Supply Plan is to quantify how much water is being consumed, identify areas with limited water supply and evaluate existing water use. The goal will be to enhance water supply for present and future needs with the fewest environmental impacts for Buckingham County and the Town of Dillwyn.

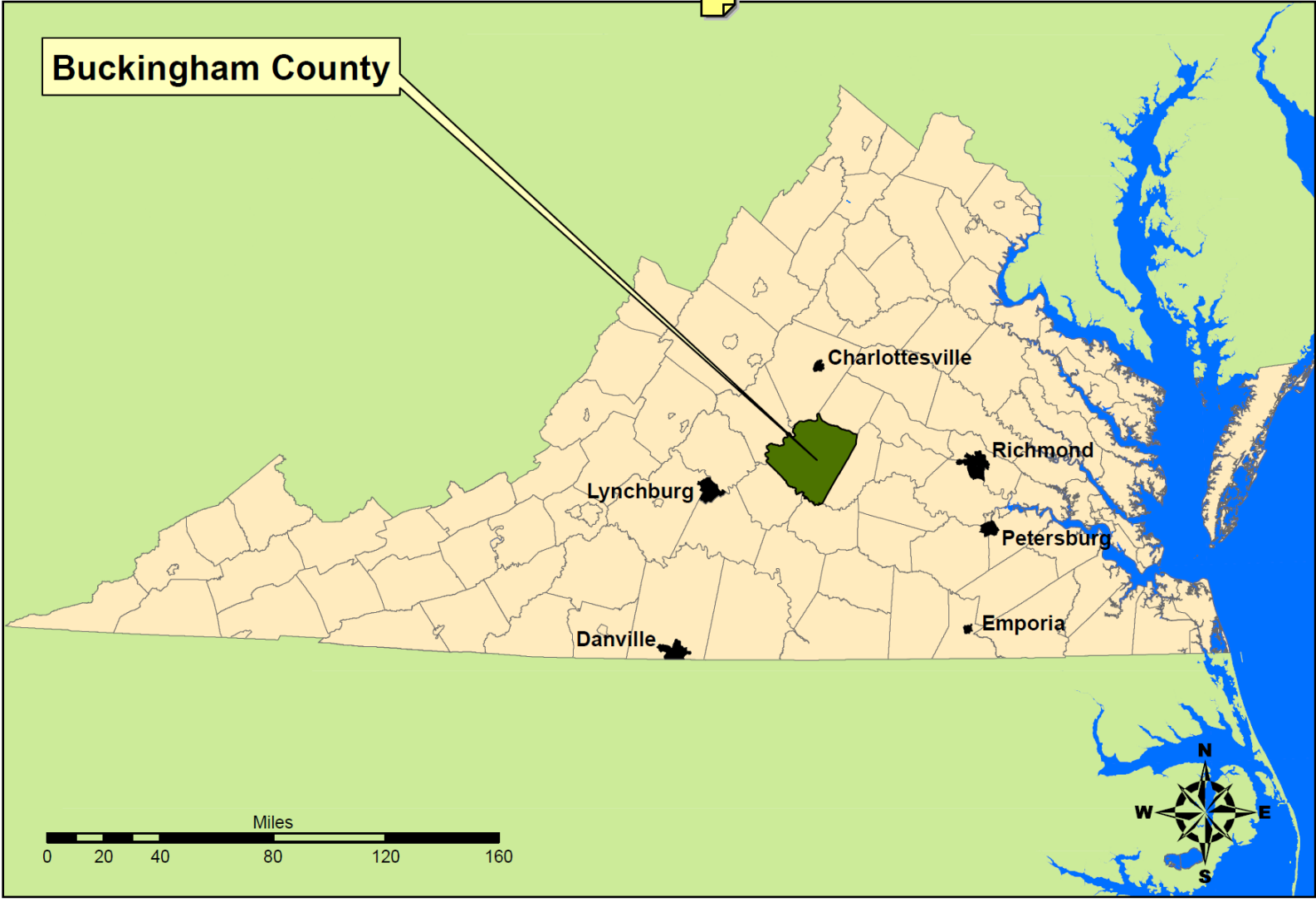
## **Project Area**

Buckingham County and the Town of Dillwyn are located in the heart of central Virginia. The County consists of 582 square miles, and is bounded on the north by the James River and the southwest by the Appomattox River. Buckingham County is approximately 45 miles south of the City of Charlottesville; 38 miles due east of the city of Lynchburg; and 173 miles south/southwest of Washington, DC (see Map I and Map II on the next two pages).


Buckingham County is rural in character with sparsely developed residences, community businesses and churches, interspersed in a gently rolling, central piedmont landscape. According to the 2000 US Census, the total population is 15,623. There is one incorporated Town located within the Buckingham County border—the Town of Dillwyn (Map III on page [redacted])

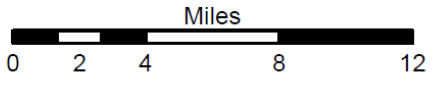
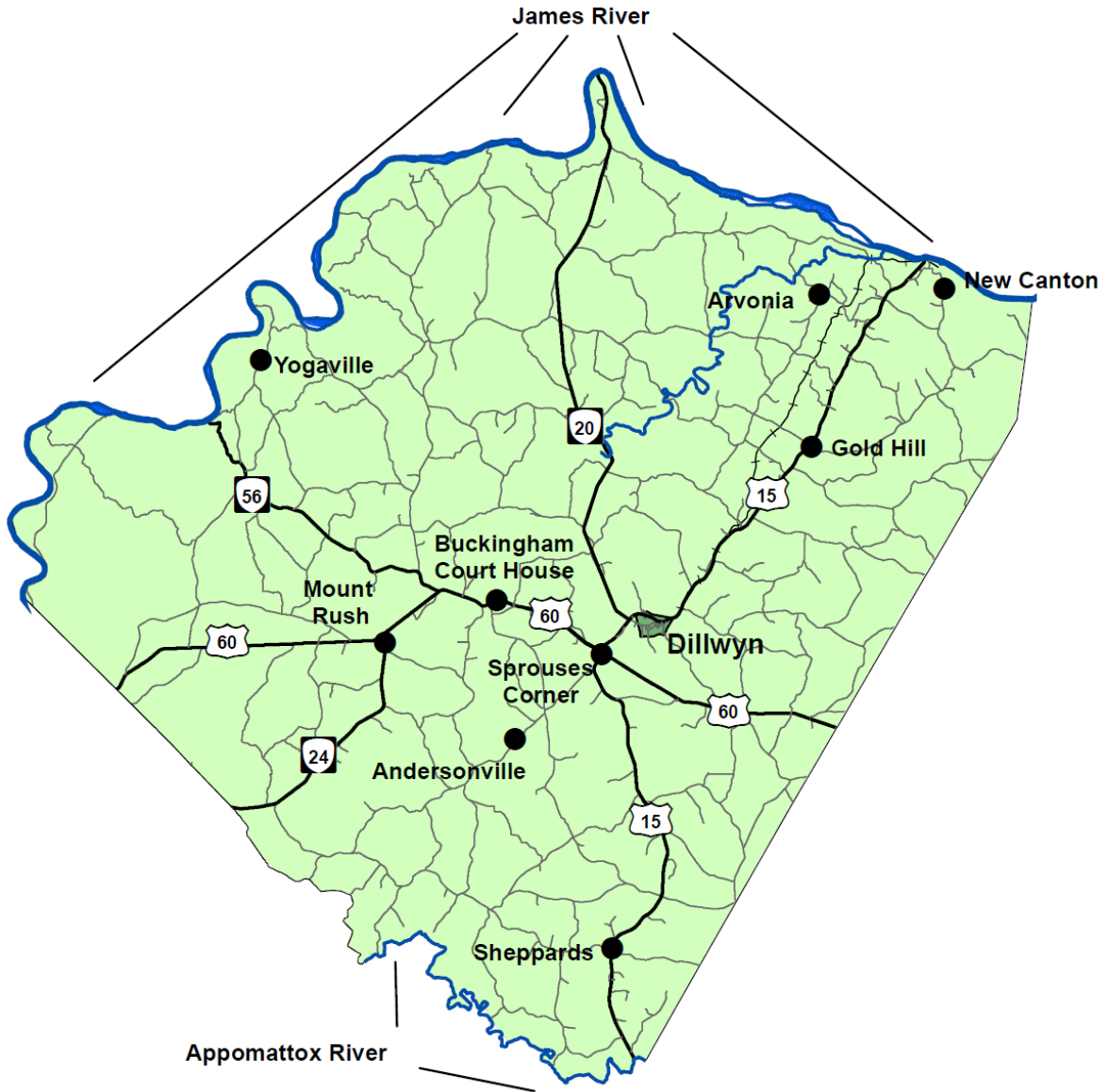
Buckingham County was formed in 1761 from Albemarle County and was probably named either for the English county of that name or for the Duke of Buckingham. According to some sources, however, the name came from Archibald Cary's tract of land called Buckingham, on what was then Willis' Creek. It is the only Buckingham County in the United States.

In 1821, Buckingham County resident, Charles Yancey, secured a design from his friend, Thomas Jefferson, for a new courthouse in Buckingham. The new courthouse, using Jefferson's design, was built between 1822 and 1824, but this courthouse and all of its records was destroyed by fire in 1869. Another courthouse was built on the same site in 1873 and is a registered Virginia Historic Landmark. An archeological study during recent courthouse renovation has revealed much information about "Jefferson's Courthouse". The footprint of Jefferson's design has been preserved in the Courthouse Square landscape plan.



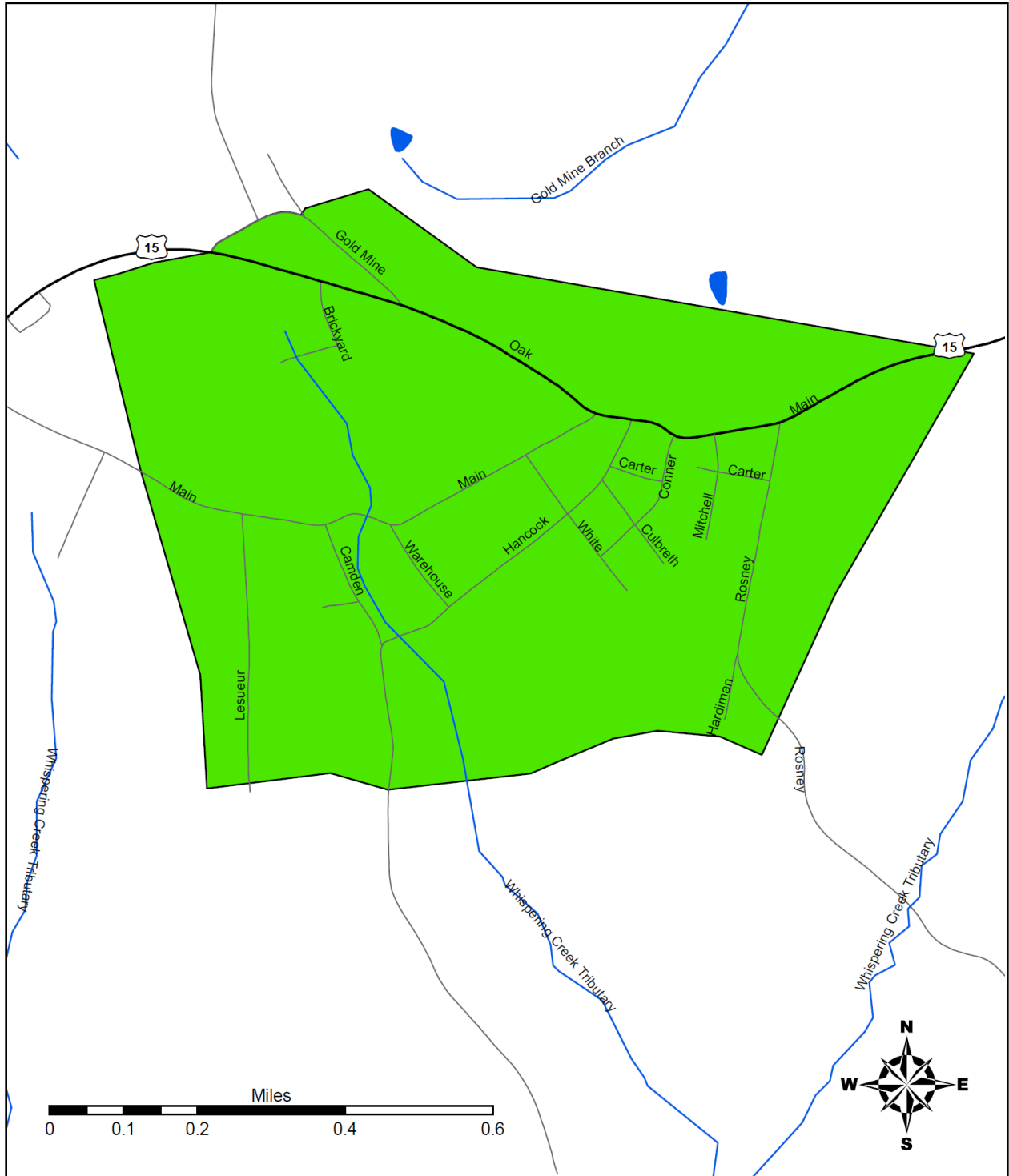
Map Created by CRC--February 2009

**Map II** 



Map Created by CRC--February 2009

**Map III**



**Map Created by CRC--February 2009**

## **Water Supply Summary**

Buckingham County and the Town of Dillwyn are located within the James River Drainage Basin. The water sources are varied-- wells; surface water. Future plans include utilizing water from the James River.

## **Plan Design**

Tasks which will be addressed in this portion of the Buckingham County and the Town of Dillwyn Water Supply Plan are: 1) Task 1, Existing Water Source Information and 2) Task 2, Existing Water Use Information. The ensuing chapters will follow this design to document the existing water sources and existing water usage. The first chapter describes the overall environment within Buckingham County and the Town of Dillwyn outlining conditions that could factor into a determination of future water needs.

## **II EXISTING WATER SOURCE & USE EVALUATION 9 VAC 25-780-70**

### **Purpose**

To evaluate the local water resources and adequately predict future demand to assess needs, if any, an inventory of existing water supply and usage must be prepared. The following sections will identify current water supply sources, systems capacities, local users and usage.

### **Water Sources—Community Water System**




This section consists of a collection of current data on existing water sources. Current information is provided for community water systems using surface water reservoirs, and stream intakes. Included are lists detailing current information of all self-supplied users of more than 300,000 gallons per month of surface water for nonagricultural uses. Additional information includes a list of agricultural users who utilize more than 300,000 gallons per month, an estimate of the number of residences that are self supplied by wells withdrawing less than 300,000 gallons of water per month, an estimate of the population served by individual wells, and a summary of findings and recommendations from source water assessment plans or wellhead protection programs.

There is one community water system within Buckingham County. Wells provide the main supply of domestic water needs of the County's rural residents. However a small portion of the County is serviced by a public water system (see Map IV). The total number of customers currently on the Buckingham County Water System is 399, plus the Buckingham Correctional Center and the Dillwyn Correctional Center. The total population served is 5,159.



Troublesome Creek Reservoir, with a surface area of 58 acres, is the water source for the Buckingham County Water System.

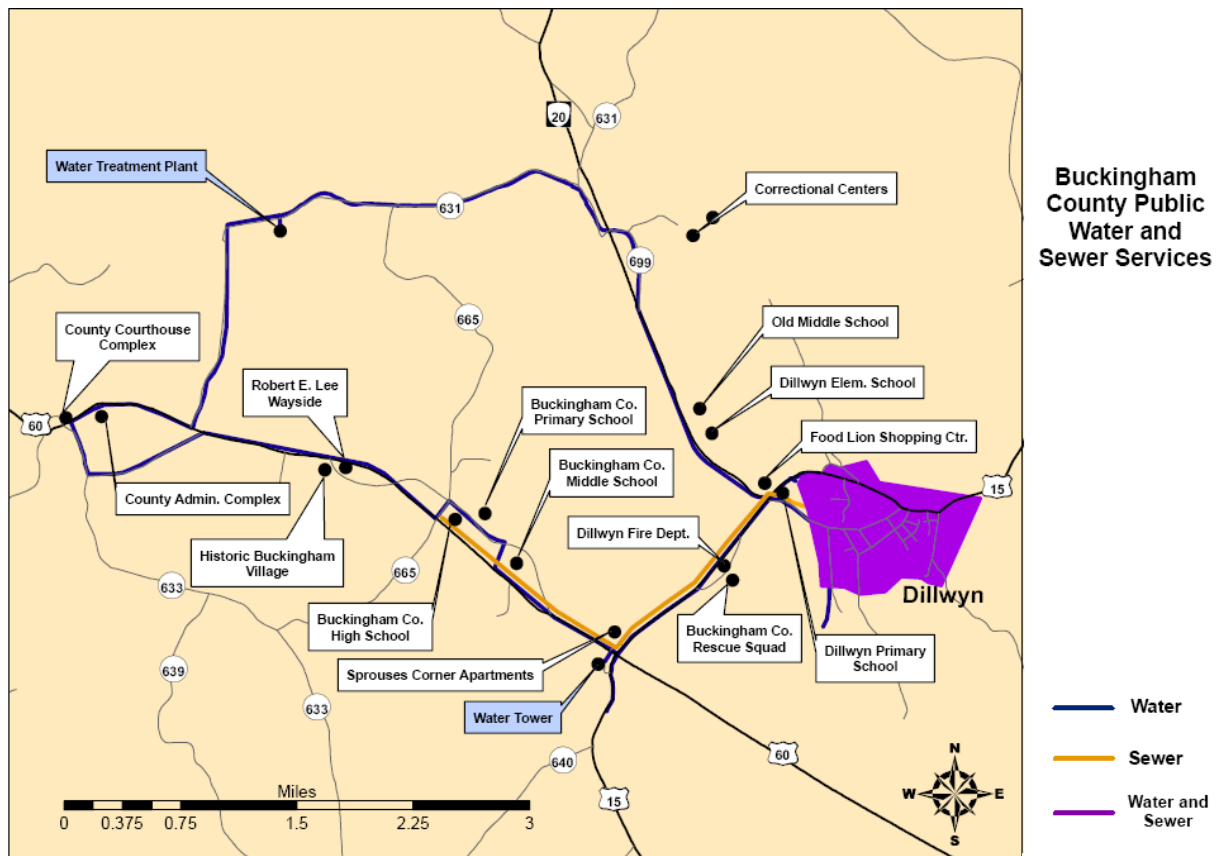
The Buckingham County Water Plant was constructed in 1981-1982 and was upgraded in 1999. The average of the existing water plant is 310,000 gpd. 

To meet new EPA regulations and to prepare for future growth, the County is in the process of designing a new water treatment facility. The new plant will be designed to produce 1.1 million gallons in a 16-hour day. Along with the new plant, there will be modifications to the reservoir and the raw water pump station.

Currently, there are no plans in the future for the extension of public water into the unserved areas of the County.


Unique in Buckingham County is the community of Yogaville. It is served by a state approved 10,000 gpd rated system supplied by a well and storage tanks.

**Map IV**



Map created by CRC - May 2007  
Source: VEDP and Buckingham County

## **Groundwater**

Buckingham County is currently not located within a Ground Water Management Area. Therefore, no groundwater is used for community water systems in Buckingham County or the Town of Dillwyn. 

The Department of Environmental Quality (DEQ) retains permit data for water withdrawals across the Commonwealth. Permitted withdrawals are not applicable for Buckingham County or the Town of Dillwyn.

### **Streams**

No streams are utilized in the waterworks supply.

### **Reservoirs**



The water source is the Troublesome Creek Reservoir, with a surface area of 58 acres.

### **Water Purchased Beyond Local Boundaries**

No user in Buckingham County or the Town of Dillwyn purchases or utilizes water from outside the County.

### **Water Available for Purchase Beyond Local Boundaries**

There is no data available at this time.



### **Self-Supplied Users**

The Water Supply Planning Regulation defines “self-supplied user” as any person making a withdrawal of surface or ground water from an original source (e.g., river, lake, reservoir, etc.) for their own use. Self-supplied users do not receive water from a community water system.

In this area, available information from the County waterworks operator indicates that there are no users that withdrew at least 300,000 gallons per month.



### **Self-supplied Users—more than 300,000 GPM (non agricultural)**

Currently there are no self-supplied surface water systems utilizing 300,000 gpm or more identified in Buckingham County or the Town of Dillwyn. Data was obtained from the County waterworks operator. Additionally, there are no self-supplied groundwater systems utilizing 300,000 gpm or more in the locality.



### **Golf Courses**

There are no golf courses in Buckingham County or the Town of Dillwyn.

### **Self-supplied Users—more than 300,000 GPM (agricultural)**

Based on information received from the County waterworks operator, there are no permitted farms in Buckingham County or the Town of Dillwyn. Therefore, there are no agricultural self-supplied users using more than 300,000 gpm.



As reported by the USDA in the census data for 2002, the following crops were grown in Buckingham County: forage—land used for all hay and haylage, grass silage, and greenchop—corn for silage, corn for grain, all wheat for grain, and tobacco.

Source: [www.nass.usda.gov/Statistics\\_by\\_state/Virginia/Publications/County\\_Estimates/buckingham.pdf](http://www.nass.usda.gov/Statistics_by_state/Virginia/Publications/County_Estimates/buckingham.pdf)

An estimated [redacted] individual wells are utilized in the County, and with few exceptions, these are located outside the community system service area. These wells withdraw less than 300,000 gallons per month.

*Buckingham County Surface Water Resources*

Reservoir	Sub-basin	Drainage Area (Square Miles)	Surface Area (Acres)	On Stream Storage (Million Gallons)	Safe Yield Million Gallons per day
Troublesome Creek	James				

**Findings from Source Water Assessment Plans and/or Well Head Protection Programs**

DEQ to provide PDF

### III. EXISTING WATER USE 9 VAC 25-780-80

The Virginia Water Supply Planning Regulation defines a community water system as a waterworks that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents, and is regulated by the Virginia Department of Health Waterworks Regulation (12 VAC 5-590).

This section consists of a collection of current data on existing water use. The following information is provided for community water systems in the Town of Dillwyn: (a) population within the planning area; (b) number of connections within the planning area; (c) average and maximum daily withdrawal; (d) amount of water used within the planning area on an annual and monthly average basis; (e) peak day water use by month; (f) estimate of the water used on an average annual basis by self-supplied nonagricultural users of more than 300,000 gallons per month of groundwater; (g) estimate of the water used on an average annual basis by self-supplied agricultural users of more than 300,000 gallons of water per month of surface and groundwater; (h) estimate of the number of self-supplied users of less than 300,000 gallons per month of groundwater, as well as an estimate of their total water consumption on an average annual basis; (i) estimate of the disaggregated amounts of water used in categories appropriate for each system; and (j) qualitative description of existing in-stream beneficial use within or outside the planning area that may be affected by the point of stream withdrawal

Additional information provided in this section includes estimates of the water used on an average annual basis by self-supplied nonagricultural and agricultural users of more than 300,000 gallons per month of groundwater outside the service areas of community water systems, and an estimate of the number of self-supplied users of less than 300,000 gallons per month of groundwater, as well as an estimate of their total water consumption on an average annual basis outside the service areas of community water systems.

#### **Community Water Systems**



At this point in data compilation, the Buckingham County Water System has [redacted] water connections in the County and the Town of Dillwyn. Of this number [redacted] are residential, and [redacted] are business commercial.

Peak day water use data: The Buckingham County Water System records peak day water use as [redacted] gpd.

Monthly Average: The Buckingham Water System records the monthly average as [redacted] gallons of finished water per day (year of data)

Annual Average: The Buckingham Water System annual average of finished water is approximately [redacted] gallons (year of data) .

## **Existing In-Stream Beneficial Uses**

Natural resources are closely linked with the most prevalent beneficial uses of water in Buckingham County and the Town of Dillwyn. Wildlife thrives in the watersheds in the region—the James River Watershed, encompassing the James River and the Appomattox River—and the supporting environment. Additionally, through the years, approximately 18 watershed dams have been constructed in Buckingham County. (See Map **to be provided later** ). Outdoor recreation—hunting, fishing, boating, etc., are strongly linked to the quality and supply of water resources.

