Fauquier County
Regional Water Supply Plan

Submitted for:
Fauquier County, the Town of Remington, and the Town of The Plains

Fauquier County Office of Community Development

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ACRONYMS

bls	Below Land Surface
CWS	Community Water System
FCWSA	Fauquier County Water and Sanitation Authority
gpd	Gallons per Day
gpm	Gallons per Minute
MG	Million Gallons
N/A	Not Available
NASS	National Agricultural Statistics Service
N/I	No Information
NOAA	National Oceanic and Atmospheric Administration
STP	Sewage Treatment Plant
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VADEQ	Virginia Department of Environmental Quality
VDH	Virginia Department of Health
VHEDA	Vint Hill Economic Development Authority

Introduction

In 2005, the Commonwealth of Virginia adopted regulations requiring all regions and localities to prepare plans identifying their water sources, projected future water needs and conservation tactics. According to the regulations, these Water Supply Plans (WSP) could be prepared by an individual locality or by a region consisting of at least two separate localities. Fauquier County, the Town of Remington and the Town of The Plains opted to work together on a plan for the region. This work involved data collection by two distinct water suppliers as well as statistical data collection to account for the many rural self-supplied water users throughout the region. Although the Town of Warrenton lies within the borders of Fauquier County, the citizens residing in Warrenton rely on two reservoirs for the majority of their drinking water. For this reason, they opted to submit an individual Water Supply Plan.

The citizens residing within Fauquier County, the Town of Remington, and the Town of The Plains rely exclusively on groundwater for the majority of their water needs. The County explored the option of constructing reservoirs for drinking water supplies in the past, however only one of these was constructed. In 2001 the Fauquier County Board of Supervisors (BOS) passed a resolution committing the County to groundwater for its public drinking water supplies. The Fauquier County Water and Sanitation Authority (FCWSA) works as a partner with the County by, in most cases, owning and operating the current public water supplies through a collection of community water supply systems utilizing wells.

Fauquier County is a headwaters community for two major river basins: the Potomac and the Rappahannock. Most of the County's 660 square miles of land is rural in nature with new development guided towards service districts, towns, and villages. Fauquier County has vibrant conservation easement and Purchase of Development Rights programs. As of 2009, over 92,000 acres in the county were held in some form of easement. This dedication to land conservation helps to ensure the county preserves and protects its groundwater supplies.

Located approximately 45 miles west of Washington, D.C., Fauquier County's neighbors include Loudoun, Prince William, Warren, Clarke, Rappahannock, Culpeper, and Stafford counties. It spans two geological provinces, including the Blue Ridge in the northwestern part of the county, and the Piedmont to the southeast.

In 2009, Fauquier County's population, according to Weldon Cooper Center's provisional estimate, consisted of 67,702 residents. The county seat is the Town of Warrenton. The culture of the County remains predominantly agricultural in nature with many wineries, festivals, and recreational opportunities.

The town of The Plains lies in the northern part of the county on State Route 55. This small town prides itself on its rich history. An active Norfolk Southern freight rail line runs through the town with a cross roads of shops, churches, and restaurants. The Plains is also home to Great Meadows

which is hosts several events including the Gold Cup, polo matches, wine festivals, and the Scottish Games.

The Town of Remington, incorporated in 1890, is located in the southern portion of Fauquier County along the Rappahannock River State Route 17 and US Route 29. Throughout its history Remington has served as a crossroads between Charlottesville and Manassas. During the Civil War the town experienced a number of engagements. Today shops and restaurants line the grid pattern streets of the downtown. An active rail line carries freight but has also been considered for Virginia Railway Express expansion.

Water supply planning in Virginia dates back to the 1920's when the state produced the first water use planning documents organized by major river basins. These early plans focused primarily on surface water but lacked gage data and water availability information. These documents were issued every five to eight years through the early 1960's. After an extended drought the water planning process started again in 1968. The plans created between 1968 and 1972 included the water availability and the first inventory of local water use. After 1972, much of the focus switched from water quantity to water quality due to the adoption of the federal Clean Water Act. However, after a two year drought in the 1980's the state updated the water supply plans, again preparing a plan for each major river basin. The first analysis of safe yield and local demand was included, as well as water availability and an inventory of local systems and use. Common elements found in each plan were the development of water availability and the inventory of local use.

After 20 years, the Virginia drought of 1999-2002 found some localities unprepared with no drought contingency plans and an over-estimation of safe yields. Therefore, in order to address the issue the General Assembly moved to pass Senate Bill 1221 which amended the comprehensive water supply planning process at the State, regional and local levels. In 2005 the final regulations were released and incorporated into the State Code of Virginia under 9 VAC 25-780 Local and Regional Water Supply Planning. These regulations detailed out the components required of the regional water supply plan that now make up this document. The regulations also require a locality to adopt a water supply program that must review its plan every five years and update its plan every ten years. All local and regional plans must be submitted to the Virginia State Water Control Board for review and compliance.

In 2003 the BOS created a Water Resource Management Program with the goal of establishing a baseline of groundwater usage and availability. Over the next few years the County was successful in creating a database of all the historical Department of Health permits indicating the location of wells, producing several hydrogeological studies of its service districts, and creating a water resource management plan detailing a work plan for the County to pursue long term. Like the state, the County's work was undertaken to ensure the water availability could support current and future needs.

The goal of this plan is to identify where and how water is being used within this region and to develop a working document that can be used to plan for responsible growth based on water

availability and sustainability. This document is the compilation of available water supply data from 2009 for Fauquier County, Remington, and The Plains with a planning horizon ending in 2040. The document is organized into the following sections:

- Description of Existing Water Sources
- Description of Existing Water Use
- Description of Existing Water Resource Conditions
- Assessment of Projected Water Demand
- Description of Water Management Actions
- Statement of Need
- Alternative Analysis
- Maps identifying Important Elements of the Program
- Copies of Program Documents
- Resolution of Approval from Each Jurisdiction
- Record of the Public Hearings

Regulation 9 VAS 25-780-50.D requires that the water supply plan be reviewed within five years of the compliance determination to assess the plan's adequacy in addressing the Regulation, given then-current water supply planning uses. Any significant changes in water supply issues that are identified at the 5-year compliance review will require the submission of an amended water supply plan. Regulation 9 VAC 25-780-50.E requires that each water supply plan be revised and resubmitted to the VADEQ every 10 years. Through the preparation of this plan, data gaps have been identified. These gaps have helped to better define data collection deficiencies that will inform the preparation of subsequent Water Supply Plans.

Section I: Existing Water Sources (9-VAC 25-780-70)

The purpose of this section is to review the existing water sources in use in 2009 by Fauquier County, Town of The Plains, and Town of Remington. As discussed in the introduction, the Town of Warrenton is addressed through its own local Water Supply Plan, but where appropriate this plan will reference the community water systems located outside of the Town of Warrenton but within the Warrenton Service District.

For over thirty years, nine Service Districts (Marshall, Warrenton, New Baltimore, Opal, Bealeton, and Remington, and the Village Service Districts of Catlett, Calverton, and Midland) have been identified in the Fauquier County Comprehensive Plan as the designated growth areas. These Service Districts are also the only planned locations for publicly owned community water systems. The Towns of Remington and The Plains are included within the Service District discussion. Each Service District system is dependent on groundwater and would require additional wells to support growth. Therefore, for planning purposes this document delineates Service Districts, as opposed to the possible multiple individual community water systems located in each Service District, as community water systems. The existing VDH community water systems are then listed under their respective Service Districts. Figure 1.1 Service Districts of Fauquier County illustrates the Service District boundaries as of 2009.

The rural areas of Fauquier County, or those areas outside Service Districts or Towns, are also dependant on groundwater for drinking water supplies. In an attempt to determine how many individual wells might exist in the rural area, Fauquier County catalogued 4,080 historical well logs (recorded mostly by well drillers) located in the local VDH files. The well permits were entered into a database and geo-referenced (See Figure 1.2 Existing Wells in Fauquier County). However, the County quickly determined that these well logs were incomplete in scope and reliability. Therefore, the County needed another data source for estimating the number of existing individual wells outside the Service Districts. The best available source was the County's E911 address system (See Figure 1.3). E-911 Address Points in Fauquier County identified 14,425 data points outside of the Service Districts. In comparing the two data sets (See Figure 1.4 – E-911 Address Points and Existing Wells) with the knowledge that rural development is dependent on individual wells, it was determined that the E-911 address points would be a truer indication of possible groundwater use.

For the users of larger groundwater systems, community water supplies have been developed both in Services Districts and in rural areas. Figure 1.5 Public Water Systems in Fauquier County illustrates the location of the Community and Non-Community Public Water Supply wells as reported by VDH in 2009. The non-community systems serve schools, restaurants, and various other non-residential uses.

Existing Water Source Information

The data provided on existing water sources reflects 2009, except as noted. As referenced in the Introduction, the reliance on groundwater as a drinking water source was a policy decision made by the County. The exception to this policy is limited to agricultural and irrigation use, incidental water use for mining and manufacturing, and turf watering for landscaped and recreational areas from pond or stream intakes. All data collected on existing water sources have been summarized and included in spreadsheets located in Appendix I.

Community Water Systems Using Groundwater

The information itemized in Appendix I details the community water systems that are regulated by the VDH and report to the VADEQ. Where available, the spreadsheet includes information on:

- Well depth
- Well construction information
- Capacity
- Engineering and permitted limitations

Throughout the County all of the wells were constructed in either fractured bedrock, the near surface overburden, or alluvium. These are further discussed in a later section addressing existing water resource conditions.

There are twenty-three (23) community water systems, as identified and regulated by VDH, of which fourteen (13) are owned and operated by FCWSA. FCWSA is the governmental entity that provides public water service within the County. The Vint Hill water system is owned by the Vint Hill Economic Development Authority (VHEDA) with an agreement in place for FCWSA to operate it.

The Town of The Plains community water system is also owned and operated by FCWSA. With the exception of a private school (Wakefield) located adjacent to the town, the system only serves properties within the Town's boundaries.

The Town of Remington owns and operates a system in a portion of the Remington Service District. The system serves properties in the town boundaries, as well as a residential subdivision (The Meadows), which is located outside the town but in the Service District. FCWSA serves the remainder of the Service District, outside of the Town.

The following Community Water Systems are owned and operated by FCWSA: Marshall, New Baltimore Regional, WSA-Remington, Bealeton Regional, Green Meadows, Catlett Subdivision, Auburn Crossing, Whitewood Forest, Opal Regional, Bethel Academy, Botha, Paris and Turnbull. Both the Town of The Plains and the Vint Hill Community Water Systems are privately owned however they are operated by the FCWSA.

The following Community Water Systems are both privately owned and operated: Lakeway, Blue Ridge Christian Home, Waterloo Estates, Drysdale Water, Baldwin Ridge Marsh Run Mobile Home Park, and Fauquier Springs-Sulfur Springs. The Town of Remington also owns and operates its own CWS.

As discussed earlier, there are nine (9) Service districts in Fauquier County. They include: Bealeton, Calverton, Catlett, Marshall, Midland, New Baltimore, Opal, Remington, and Warrenton. While these Service Districts are identified for public water systems, several are only partially supported and some are not currently served at all. The Service Districts of Calverton and Midland currently have no community water systems. Meanwhile, there are plans to expand public water service in Opal and upgrade service in Marshall. For the Town of Remington, a water system is in place within the town boundaries, but does not extend through the entire Remington Service District. It is important to note that the Town of Remington's Water Service District does not mirror the boundaries of the Fauquier County Comprehensive Plan's Remington Service District, which is larger to allow for long term growth.

There are three distinct hydrogeologic settings in the County, including the Blue Ridge, Culpeper Basin, and Piedmont bedrock. Each of these settings has distinct characteristics which affect the way water moves through the subsurface and how much water can be sustainably produced. The geology and hydrogeology are both described in further detail in the Existing Resources section of this report. The Marshall and Warrenton Service Districts are wholly located in the Blue Ridge while New Baltimore and Opal both straddle the Blue Ridge and Culpeper Basin. The remaining Service Districts, Remington, Bealeton, Midland, Catlett, and Calverton, fall completely within the Culpeper Basin. There are no Service Districts or plans for public water supplies in the Piedmont, which is located in the most southeastern edge of the County. The community water system wells range in depth from 175 to 655 feet below land surface (bls) for the systems supported by FCWSA in Fauquier County and The Plains. The wells in the Town of Remington range in depth from 250 to 550 feet bls.

System Summaries

The summary information below is organized for community systems located inside or outside designated growth areas (Service Districts and Towns) as specified in the Fauquier County Comprehensive Plan. This data was collected from the FCWSA, the Towns, and privately owned community water systems. For the charts delineating withdrawal capacities, FCWSA estimates were based on a maximum day withdrawal capacity of 24 hours (assuming maximum pumping); an average day withdrawal capacity of 13.333 hours a day; and an average day maximum month of 13.333 hours a day. The town of Remington used an estimate of a maximum day withdrawal capacity of 13.5 hours; an average day withdrawal capacity of 12 hours a day; and an average day maximum month of 13.5 hours a day. For each table below, the information provided under the "VDH Permitted Capacity" tab refers to what VDH currently allows based on the system (i.e. wells, tank, treatment plant) in place at that specific location. The permitted capacity may be limited due to the size of the storage tank rather than the actual ability of the wells to produce. The "Withdrawal Capacity" column refers to the maximum amount of water that could be pumped based on past pump tests performed on the systems. Please note that in some tables below, the Withdraw Capacity number (i.e. the maximum potential withdraw for a given system) is greater than the Permitted Capacity based on infrastructure limitations. Where either a pump test was not performed,

or the data not available the column will be filled in with N/I or "No Information". After the name of each system is listed, the identification number used by the VDH for that system is given.

Marshall Service District

There is only one Community Water System located within the Marshall Service District, and it is owned and operated by the FCWSA. Two wells and a water tower are being constructed at the 17/66 industrial park, and will be dedicated to FCWSA upon completion. See figure 1.6 for a map of the Marshall Service District Wells.

> ***Marshall Water Systems*** – PWSID6061200 has a VDH permitted capacity of 124,000 gpd (0.124 mgpd). Formerly known as Marshall Water Works, the system is served by four wells ranging in depth from 105 to 600 feet bls. The system is currently limited by storage constraints. A new storage tank was erected in 2009 however it is not yet on-line. Demand is expected to grow in the future. FCWSA owns the water distribution lines but leases the wells. Table 1.1 contains information regarding the Marshall Water System Capacity.

Table 1.1-Marshall Water System Capacity

	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
Marshall Water Systems	124,000	N/I	N/I	N/I

Data provided by FCWSA, see Appendix I, FCWSA Data page 2

Warrenton Service District

The Warrenton Service District includes the Town of Warrenton, which provides water via a series of interconnected reservoirs and wells (for more detailed information, see the Town of Warrenton's 2010 Water Supply Plan WR&A 2010). While the Town supplies drinking water to some Fauquier County residents in neighborhoods outside the town boundaries, mainly Ivy Hill, Warrenton Lakes, areas off Walker Drive and Culpeper Street, and residences off Bear Wallow Road, towards the Warrenton Training Center, there are also large areas that are self-supplied by wells. The remaining Fauquier County residents residing in the Warrenton Service District that are served by the New Baltimore Regional system, owned and operated by FCWSA, which is detailed below. See Figure 1.7 for a map of the Warrenton Service District

New Baltimore Service District

The following Community Water Systems are located within the New Baltimore Service District. See Figure 1.8 for a map of the New Baltimore Service District.

> ***Lakeway Subdivision Water System*** – PWSID6061090 located near Lake Brittle has been operating a residential subdivision system with a pressurized storage tank. It supplies 12 houses and approximately 25 persons. As of 2009, it was owned and operated by K&S Enterprises per contract with the homeowners. There is a record of contamination with total coliforms from five

years ago according to VDH from the previous owner/operator. The storage tank is considered to be a significant issue related to the threats to drinking water quality and supply. The homeowners and K&S are currently in discussion with VDH on how to address and correct the problems. VDH would ordinarily expect a system of this size to provide 400 gpd per household for a total of 4800 gpd for the 12 unit subdivision. Interconnection to FCWSA is also an available alternative, but cost prohibitive to the existing homeowners. The lack of information for the Lakeway System is included in Table 1.2 below.

Table 1.2- Lakeway System Water Capacity

Lakeway	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	N/I	N/I	N/I	N/I

Data provided by VDH, see Appendix I, VDH data page 2

Baldwin Ridge Public Water System PWSID 6061020 serves 12 homes located directly off of State Route 605 on the north side. The Leazer Pump and Well, Inc. driller's well log from 1965 is available at VDH. Well yield over eight hours was less than 30 gallons per minute (gpm). The installed pump capacity is 25 gpm. Because the system was in place prior to regulation, VDH has allowed this system to operate without permitted capacity information for these 12 connections. The calculated permitted capacity totals 4800 gpd based on 250 gpd per connection multiplied by 12 connections multiplied by a factor of 1.6. This information was not included in the Table 1.3 since it is not listed on the permit for this system. The well is 97 feet deep and the water-bearing zones are between 72 and 87 feet bls. Data on this system was not available due to the age of the system. The information available for the Baldwin Ridge System is included in table 1.3 below.

Table 1.3 Baldwin Ridge System Water Capacity

Baldwin Ridge	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	N/I	N/I	N/I	N/I

Data provided by VDH, see Appendix I, VDH data page 2

New Baltimore Regional- PWSID6061318 has a VDH permitted capacity of 936,794 gallons per day. There are 11 wells that range in depth from 265 to 505 feet below land surface. The system serves schools, industrial and residential land uses, the majority of which is residential. The High Rock well feeds directly to the storage tank. All other wells pump directly to residential areas with the excess going to the tank. The system is gravity fed. Information on the New Baltimore Regional Water System Capacity is included in table 1.4 below.

Table 1.4- New Baltimore Regional Water System Capacity

New Baltimore Regional	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	936,794	1,130,400	2,034,720	1,130,400

Data provided by FCWSA See Appendix I, FCWSA Data page 2

Vint Hill EDA – PWSID6061595 has a VDH permitted capacity of 294,400 gpd. The system, which is owned by the Vint Hill Economic Authority and operated by FCWSA, contains three wells ranging in depth from 415 to 650 feet bls. Information on the Vint Hill EDA water system capacity is included in Table 1.5 below.

Table 1.5- Vint Hill EDA Water System Capacity

Vint Hill EDA	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	294,400	N/I	N/I	N/I

Data provided by FCWSA See Appendix I, VHEDA Data page 2

Remington Service District

The Remington Service District includes both the Town of Remington's and the FCWSA Remington community water systems. The Town of Remington's Water Service District, defined by Route 29 to the west and the railroad tracks to the east, is served by three wells, two of which are contaminated. One contaminated well is in use, while the other well is held in reserve. The intent is to remove the contaminated well offline and replace it with one of the reserve wells in the near future. The Town of Remington's policy is to require all new development to provide VDH approved wells and storage in order to be accepted into the town system. A proposed project, Remington Business Park, if developed, will be supplying a fourth operational well and a storage facility. The Barb property (Ellerslie Farm) is approved to be a future single family residential subdivision of approximately 198 units and will also supply a VDH approved well which will bring the total to five operational wells in Remington. The demand by residential, light industrial and commercial uses is expected to grow in the future. Pressure is maintained by a 244,000 gallon well #3 Lee's Glen Storage tank and a 150,000 gallon well #1 for the 5th Street storage tank.

The remaining land within the Remington Service District, as defined by the Fauquier County Comprehensive Plan, is supplied public water service by FCWSA. Public water in this part of the Remington Service District is derived from wells located in various subdivisions and school sites throughout the Bealeton and Remington Service Districts. These wells are connected into a loop system of pipes, while pressure is maintained by means of a 500,000 gallon storage tank and a 285,000 gallon standpipe. Presently three wells generate 405,000 gpd of water to take care of system users. Additional pumps at these wells could raise their yield by 136,000 gpd. FCWSA has also already drilled, tested, and capped three additional wells with a collective capacity of 780,000 gpd. Thus, FCWSA's Southern

Fauquier water system has a current capacity in excess of 1.3 mgpd and is using about 25 percent of that capacity. See Figure 1.9 for a map of the Remington Service District.

WSA Remington (The Meadows and Ridge) – PWSID6061505 has a VDH permitted capacity of 47,093 gallons per day. Information on The Meadows and Ridge system capacity is included in Table 1.6 below.

Table 1.6- The Meadows and Ridge System Water Capacity

The Meadows and Ridge	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	47,093	84,000	151,200	84,000

Data provided by FCWSA, See Appendix I, FCWSA Data page 2

Town of Remington – PWSID6061500 Lee's Glen Well #3 is 353 feet bls and serves as the Town's primary source of supply. Well #2 is the other active well and is contaminated. The well is 281 feet bls. The inactive Well #1 is 580 feet bls and has a high arsenic level. The Town of Remington is working to upgrade the treatment for the water coming out of Well #1. However, because this report is current as of 2009, the permitted capacity does not include the information on the retrofits to Well #1.

Based on information provided by the Town of Remington, there are a total of 598 connections to the Town water system (295 connections within the Town and 303 connections outside of the Town). There are 36 houses and 13 businesses within the Remington Water District that are served by individual wells and are therefore not included within the Town system. Information on the Town of Remington system capacity is included in Table 1.7 below.

Table 1.7- Town of Remington System Water Capacity

Town of Remington	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	162,800	183,600	206,550	206,550

Data provided by Town of Remington, see Appendix I, Town of Remington Data page 2

Bealeton Service District

The following Community Water Systems are located within the Bealeton Service District. See Figure 1.10 for a map of the New Baltimore Service District.

Blue Ridge Christian Home- PWSID6061055 has one well at a depth of 160 feet bls. Because the system was developed prior to current regulations being in place, VDH has allowed this well to operate for 42 citizens. Data on this system is not available due to the system age. The available data on the Blue Ridge Christian Home is included in Table 1.8 below.

Table 1.8- Blue Ridge Christian Home System Water Capacity

Blue Ridge Christian Home	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	N/I	N/I	N/I	N/I

Data provided by VDH, see Appendix I VDH Data page 2

Bealeton Regional – PWSID6061129 has a VDH permitted capacity of 564,000 gpd. There are four wells ranging in depth between 405 and 500 feet bls. Meadowbrook # 1 is offline due to high arsenic levels. This well has not been abandoned because it is being considered for blending treatment, similar to the Remington Well #3. Blending results in lower arsenic levels and may allow the well to be operational again in the future. Miller School, Mintbrook, and Meadowbrook #2 are all operational wells in this system. Information on the Bealeton Regional System water capacity is included in Table 1.9 below.

Table 1.9- Bealeton Regional System Water Capacity

Bealeton Regional	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	564,000	564,000	1,015,200	564,000

Data provided by FCWSA, see Appendix I, FCWSA Data page 1

Opal Service District

The only Community Water System in the Opal Service District is the system serving the Green Meadows Subdivision. See Figure 1.11 for a map of the Opal Service District.

Green Meadows Subdivision – PWSID6061055 has a VDH permitted capacity of 40,400 gpd. There are two wells ranging in depth from 225 to 405 feet bls. Information on the Green Meadows Subdivision System Capacity is included in Table 1.10 below.

Table 1.10-Green Meadows Subdivision System Water Capacity

Green Meadows Subdivision	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	40,400	72,000	129,600	40,400

Data provided by FCWSA, see Appendix I, FCWSA Data page 2

The Opal Regional Community Water System serves some citizens residing within the Service District however the system is located (and serves primarily citizens) outside of the Service District as of 2009.

Catlett Service District

The Catlett Subdivision Community Water System is the only system located within the Catlett Service District. See Figure 1.12 for a map of the Catlett Service District.

Catlett Subdivision- PWSID 6061220 is served by FCWSA with two wells. The treated well water is piped and stored in a storage tank located on Dumfries Road. Wells range in depth from 207 to 270 feet bls. The VDH permitted capacity is 62,000 gpd for the system. This area is often considered for development and treatment. However, the lack of infrastructure would make expansion of the system extremely expensive. Information on the Catlett Subdivision system water capacity is included in Table 1.11 below.

Table 1.11-Catlett Subdivision System Water Capacity

Catlett Subdivision	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	62,000	72,000	129,600	72,000

Data provided by FCWSA, see Appendix I, FCWSA Data page 2

The Town of the Plains

The following Community Water Systems are located within the Town of The Plains. The Town owns its own system however the system is operated by FCWSA. See Figure 1.13 for a map of the Town of The Plains.

The Plains – PWSID6061450 has a VDH permitted capacity of 54,400 gpd. The system consists of two wells ranging in depth from 415 to 610 feet bls. FCWSA has planned development for potential future wells.

Table 1.12-The Plains System Water Capacity

The Plains	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	54,400	54,400	97,920	54,400

Data provided by FCWSA, see Appendix I, FCWSA Data page 2

Outside Service Districts

The systems listed below are community water systems that are not in the defined Service Districts or Towns of Fauquier County. These systems are operated and maintained by facilities staff, private utility companies, and/or contract operators. Some of these systems are physically located near existing FCWSA public systems but find it cost prohibitive to hook up. Conversely, some of these systems are owned and maintained by FCWSA but located outside of Service Districts. These discreet situations came into being when neighborhoods partnered with FCWSA after the private system was developed. For the foreseeable

future, private community systems are likely to stay private systems. This means each private system has its water sources (i.e. wells), treatment facilities as needed, and distribution systems that are not interconnected to FCWSA or others. Figure 1.14 shows all the public water systems within Fauquier County, including those located outside of the Service Districts

Auburn Crossing – PWSID6061008 is served by one well with a permitted system capacity of 19,600 gpd. The well is 175 feet bls and is owned and operated by FCWSA. The Auburn Crossing system serves some of the residents within the New Baltimore Service District however the system is physically located outside of the service district. Information on the Auburn Crossing System water capacity is included in Table 1.13 below.

Table 1.13-Auburn Crossing System Water Capacity

Auburn Crossing	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	19,600	56,000	100,800	56,000

Data provided by FCWSA, see Appendix I, FCWSA Data page 2

Whitewood Forest – PWSID6061666 with a VDH permitted capacity of 19,600 gallons per day. The system consists of 1 well, 150 connections, a generator, and no back up well. There is no well report. The Whitewood Forest system serves some of the residents within the New Baltimore Service District however the system is physically located outside of the Service District. Information on the Whitewood Forest system water capacity is included in Table 1.14 below.

Table 1.14-Whitewood Forest System Water Capacity

Whitewood Forest	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	19,600	33,600	60,480	33,600

Data provided by FCWSA, see Appendix I, FCWSA Data page 2

Opal Regional – PWSID6061117 has a VDH permitted capacity of 88,000 gpd. The system initially consisted of two independent systems of Edge Hill and English Meadows with wells ranging in depth from 300 to 303 feet bls. Fecal coliform in exceedence of EPA Primary Drinking Water Standards (USEPA 2010) was detected in a privately owned subdivision system, Canterbury Village, and FCWSA was encouraged to take over this third system by connecting it to English Meadows. This increased the English Meadows system to over 50 connections, which forced a connection to Edge Hill. Information on the Opal Regional system water capacity is included in Table 1.15 below.

Table 1.15-Opal Regional System Water Capacity

Opal Regional	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	88,000	94,000	169,200	94,000

Data provided by FCWSA, see Appendix I, FCWSA Data page 2

The Waterloo Estates-Waterloo POA Water System- PSWID 6061665 is located immediately outside the Warrenton Service District boundaries off Waterloo Road. The system consists of five active wells. Four of these wells are active for the community's potable water supply system with one additional well serving the neighborhood common space landscaping. As of 2009, the system wells were Well #3, Well #9, Well #10 and a new Well #11 (also known as Well #14) in the VDH "reporting" files. Well #1 supports the irrigation for the landscaping. Between 1985 and 2008, a total of sixteen wells were drilled. Various wells have served the community through time as some wells have been taken out of service or abandoned due to failing yields and/or bacteriological contamination. The VDH permitted capacity was 64,000 gpd to serve 73 connections and a population of 182 as of June 2009. Information on the Waterloo Estates system water capacity is included in Table 1.16 below.

Table 1.16-Waterloo Estates System Water Capacity

Waterloo Estates – Waterloo POA	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	64,000	51,072	91,160	51,072

Data provided by VDH, see Appendix I, VDH Data page 2

The Drysdale Water System- PWSID 6061125 is currently owned and operated by Skyline Water Company, Inc. The system serves the 26 lots comprising the Drysdale Subdivision, located off of Virginia State Route 685, Routt's Hill Road. The system contains two wells and its allowed functioning capacity was "grandfathered" by VDH in 1978 at 27 connections based on past performance. Well number 1 has a capacity of less than or equal to 12 gpm and no well log information is available. As of 2007 it is used for supplemental capacity during peak periods or for backup during emergency use. Well number 2 is 165 feet bls with water bearing zones between 60 and 120 feet bls. The well capacity is also estimated to be 12 gpm based on a 1-hour pump test conducted in 2002. There is no withdrawal data available for this system due to its age. Information on the Drysdale system water capacity is included in Table 1.17 below.

Table 1.17-Drysdale Water System Capacity

Drysdale	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	N/I	N/I	N/I	N/I

See Appendix I, VDH Data page 2

Bethel Academy- PWSID6061050 has a VDH permitted capacity of 54,400 gpd. The system is located outside of the Warrenton Service District by more than one mile, but was acquired by FCWSA in the early 2000's from an independent system. Consisting of two wells ranging in depth from 455 to 621 feet bls, there is limited to no room for additional growth. Information on the Bethel Academy System water capacity is included below in Table 1.18

Table 1.18-Bethel Academy System Water Capacity

Bethel Academy	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	54,400	54,400	97,920	54,400

Data provided by FCWSA, see Appendix 1, FCWSA Data page 1

Botha Subdivision – PWSID6061057 consists of separate water systems with a limited number of connections (17). Built as part of a Habitat for Humanity project, FCWSA acquired it from the County. The existing well has a depth of 400 feet bls and there is no room for further growth. With fewer than 50 connections and no generator, there is no back up well. Information on the Botha Subdivision System water capacity is included below in Table 1.19.

Table 1.19-Botha Subdivision System Water Capacity

Botha	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	N/I	N/I	N/I	N/I

See Appendix I, VDH Data page 2

Fauquier Springs – Sulphur Springs Investment Corp- PWSID 6061114 This system, originally given a 48-hour test in 1991, consists of one well (Well #1) that is 265 feet bls with a design capacity of 29,600 gpd. The well produces 61 gpm at 231 feet bls with a pump yield of 37 gpm. The system includes a 20,000 gallon atmospheric tank, a 2,000 gallon hydropneumatic tank, two booster pumps rated at 100 gpm each, 500 feet of 3-inch diameter pipe from the well to the storage booster pump station, and a distribution system that contains a section of 2-inch galvanized waterline but is primarily constructed of 1-inch to 4 inch-diameter PVC pipe. As of 2009, the system contained 20 connections (74 connections possible) serving a population of 400 which includes residences and a country club. The average daily use for the entire system is 10,208 gpd, and an average of 510 gpd per connection. This average gpd per connection is high because of clubhouse and pool use by non-resident water users. Information on the Fauquier Springs-Sulfur Springs System water capacity is included below in Table 1.20.

Table 1.20-Fauquier Springs-Sulfur Springs System Water Capacity

Fauquier Springs – Sulphur Springs	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	29,600	29,526	53,160	29,526

Data provided by VDH, see Appendix I, VDH Data page 3

Marsh Run Mobile Home Park –PWSID6061150 (Amended)- contained four wells total. Well #1 has been abandoned. Well #2 (also called the Route 17 well) is inoperable and has been disconnected from the water system. The two active wells have a design capacity of 120,000 gpd and both undergo disinfection by hypochlorination. Well #3 (the Ball Field Well) is 400 feet deep and contains a submersible well pump with a capacity of 45 gpm. The well was originally pump-tested over 48-hours in 1987 to yield 70 gpm 120 feet bls, but a 2-hour test in 1991 determined the yield had dropped to 45 gpm. The well is located in a secure concrete floored cinderblock well house. Well #4 (White Property Well) is located 187 feet northwest of Well#2. It is 245 feet bls with a yield of 200 gpm as determined by a 48-hour pump test done in 1990. The well is equipped with a 10 horsepower submersible pump rated at 156 gpm, an approved pitless adapter, and a sanitary seal with screened vent. A concrete pad surrounds the well. The ground storage consists of one 30,000 gallon tank, one 25,000 gallon tank, and one 10,000 gallon hydropneumatic tank. The two booster pumps are rated at 315 gpm each. Due to storage limitations, the capacity of the system is 120,000 gpd for 400 connections while the yield is 196,000 gpd for 653 connections. Information on the Marsh Run Mobile Home Park System water capacity is included below in Table 1.21.

Table 1.21-Marsh Run Mobile Park System Water Capacity

Marsh Run Mobile Park	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	120,000	160,000	289,440	160,000

Data provided by VDH, see Appendix 1, VDH Data page 3

Paris Water System- PWSID6061400 has a VDH permitted capacity of 16,000 gpd. The system has two wells ranging in depth from 411 to 520 feet bls. Information on the Paris System water capacity is included below in Table 1.22.

Table 1.22-Paris System Water Capacity

Paris Water	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	16,000	19,200	34,560	19,200

Data provided by FCWSA, see Appendix 1, FCWSA Data page 1

Turnbull – PWSID6061575 has a VDH permitted capacity of 15,200 gpd. The system has one well 655 feet bls. There is one elevated storage tank with limited connections. The well has no

back up but does have a generator. Information on the Turnbull System water capacity is included below in Table 1.23.

Table 1.23-Turnbull System Water Capacity

Turnbull	VDH Permitted Capacity GPD	Withdrawal Capacity (GPD)		
		Average Daily	Max. Daily	Average Day Max Month
	15,200	15,200	27,360	15,200

Data provided by FCWSA, see Appendix 1, FCWSA Data page 1

The following table 1.24 includes a summary of the owners and operators of Community Water Systems within the planning region and a list of the systems which they operate:

Table 1.24- CWS with Owner and Operator Information

FCWSA Owned and Operated	Privately Owned with FCWSA Operation	Privately Owned and Operated	Town of Remington Owned and Operated
New Baltimore Regional	Vint Hill EDA	Baldwin Ridge	Town of Remington
Meadow and Ridge	The Plains	Blue Ridge Christian Home	
Bealeton Regional	Waterloo Estates	Botha	
Green Meadows	Drysdale	Fauquier Springs-Sulfur Springs	
Catlett	Marsh Run		
Auburn Crossing			
Opal Regional			
Whitewood Forest			
Bethel Academy			
Turnbull			
Paris			

Community Water Systems Using Surface Water Reservoirs

Not applicable to the Planning Region.

Community Water Systems Using Stream Intakes

Not applicable to the Planning Region.

Community Water Systems Operating an Interconnected System of Reserviors

Not applicable to the Planning Region.

Self Supplied Surface Water Users for Non-Agricultural Uses (More Than 300,000 Gallons Per Month)

In 2008 ***Vulcan Sanders Quarry*** used the discharge from their pit pump (surface water) 29.9 mg annually or 2.49 mg per month as an annual average. The peak month discharge was 6.7 million gallons per month. The 2008 discharge data is also considered to be withdrawal data. There was no data reported to DEQ in 2009.

The source of water for the ***Kastle Green Golf Course*** in the southern part of the County has not been reported to VADEQ. Based on anecdotal information provided by the golf course operators it is understood that the golf course is supplied using a combination of surface water and groundwater. VADEQ records indicated that a nearby golf course, Lake Manassas's Stonewall Golf Course, reports using 5 mg per month of surface water. The annual average withdrawal is 0.062 mgpd. According to DEQ records, Stonewall Golf Course uses the least amount of water of the three golf courses located closest to Kastle Greens. Based on size, the assumption is that Kastle Green Golf Course would support similar withdrawals.

Self-Supplied Groundwater Users for Non-Agricultural Uses (More Than 300,000 Gallons per Month)

Located outside of the Remington Service District, there are two electrical "peaking facilities", Dominion Generation and Marsh Run Old Dominion Electric Cooperative (ODEC). A peaking facility only comes on-line during times of high electricity demand. Because of the sporadic nature of high electricity demands (i.e. extreme weather events) these self-supplied users do not have consistent withdrawal patterns. In 2009, the Remington Combustion Turbines (operated by Dominion Generation) reported to DEQ 5.1 mg withdrawn annually with an annual average of 0.425 mg per month. The peak month withdrawal was 0.97 mg per month. Working in cooperation with FCWSA, the ODEC Facility has employed a water reuse program of treated effluent from the Remington Wastewater Treatment plant for cooling turbines under certain operation conditions.

The former Trinity Plastics industrial site (currently not in operation) outside the town of Remington (the property is located within the Remington Service District boundaries but outside the town limits) reports to DEQ that it has been operating under the 300,000 gpm threshold since 2006. However, prior to 2006 it reported using an average of 18,000 gpd and retains the capacity to withdraw similar amounts of groundwater from wells on the property.

There is no detailed well information available at this time for any of the systems listed in this section.

Groundwater or Surface Water to be Purchased (Water Supplies Outside Geographic Boundaries)

FCWSA purchases tanked truck services from a private company for emergency purposes on very rare occasions in order to move water from one FCWSA system to another FCWSA system *within* Fauquier County. There are some residential and commercial users located in close proximity to the Town of Warrenton that are serviced by the Town of Warrenton (rather than FCWSA). These individual users contract directly with the Town and there is no coordination with the Planning Region. There are no other known circumstances in which water is purchased from outside the boundaries of the geographic planning area.

Water Available to be Purchased

None of Fauquier County, the Town of Remington, the Town of The Plains, or FCWSA, has actively reviewed the availability of water to be purchased outside its geographic boundaries. However, there are specific circumstances when the Town of Remington and FCWSA will allow others to purchase water from their systems. For example, the Town of Remington allows water to be purchased in bulk quantities by interested parties. The water is available upon request through fire hydrants and billed according to the metered gallons withdrawn. Available quantities are subject to conditions of available water as determined by the Town operator's daily water logs, water resource management techniques, and drought contingency planning. In FCWSA's case, water can be purchased on a case by case basis for needs like swimming pools, construction, and drilling activities. There are no agreements with neighboring utilities to allow for water sharing in case of emergencies.

Agricultural Users (More Than 300,000 Gallons per Month)

In 2009, Woodward Turf Farm reported to VADEQ the withdrawal of 76.32 mg annually during a five month growing season from June to October. Averaged over 12 months, the average monthly withdrawal is 6.36 mg per month with a peak month use of 31.68 mg. There is a Virginia Marine Resources Commission (VMRC) permit 02-V1801 which states that 90 percent of the flow in the Rappahannock River must always pass through the stream gage in Remington. Therefore, up to 10 percent of the flow may be withdrawn, up to a maximum of 1,700 gpm.

Two other large agricultural operations: Virginia Beef and Kettle Wind all have turf farm irrigation on location but there are no reports to VADEQ. These two companies also operate in neighboring jurisdictions.

For agriculture, there is one tomato and a few greenhouse irrigators. There may be agricultural irrigators who are unknown and/or not reporting. According to the 2007 USDA National Agricultural Statistics

Service NASS there is 921 acres of irrigated land but when broken down by specific farm, may be under the reporting thresholds.

Based on NASS numbers Fauquier County has a significant agricultural industry. From a livestock standpoint, Fauquier County contains no large poultry production houses or parent company poultry contracts. In addition there are no contract swine facilities in Fauquier County. There are a number of horse facilities with more than five horses and farms with beef and dairy cattle, goats and sheep. Agricultural water use is examined more closely in the next section.

Self Supplied Users (Less Than 300,000 Gallons Per Month)

As explained above, Fauquier County residents are dependent on groundwater for their drinking water supplies. Therefore, anyone not served by a community water system would be dependent on an individual well. The exact number of users is difficult to determine. In using the E-911 addresses from 2009, the County found 14,425 data points outside the service districts. Each could be considered a building unit served by an individual well. This unit could then be multiplied by 2.75 persons per household (based on the 2000 U.S. Census) to come up with an estimated 39,669 population served. There are 49 non-community water systems serving business and institutional users. NASS reported 1,344 farm users with a mix of surface and groundwater sources. There is more information on each category of user in the Existing Water Use Section of this report. Information regarding self-supplied users on individual wells can be found below in Table 1.25.

Table 1.25- Self Supplied Users on Individual Wells

Self Supplied Users on Individual Wells	
E-911 Addresses Outside Service Districts	14,425 users
Non-Community Water Systems	49 business and institutional users
NASS Reporting Farms	1,344 farm users
Potential User Population Outside Service Districts (E-911 * 2.75 persons per house)	39,669 people

Summary of Findings and Recommendations of Previous Source Water Assessment Plans

Fauquier County, the Town of Remington, and the Town of The Plains have several studies that have previously been conducted on source water assessments. Below is a synopsis of related documents.

Groundwater Management Plans

Fauquier County contracted Emery & Garrett Groundwater, Inc. to develop a Water Resource Management Plan (EGGI 2007). Though this document was never finalized, it was used to lay the foundation for much of the data in this Water Supply Plan, including researching existing groundwater use, and projecting future groundwater needs. The recommendations from this document have helped

develop the County's work plan for water supply related issues. Key recommendations from the Water Resources Management Plan are listed below:

- Groundwater Resources Objective GW1 (Planning): Plan for the future, especially in Sensitive Groundwater Use Areas. Identify critical areas for groundwater investigation, groundwater monitoring, and groundwater protection based upon projected growth and water use, contaminant threats to groundwater quality, and the County's variable geologic and hydrogeologic settings.

- Groundwater Resources Objective GW2 (Exploration): Ensure that groundwater supplies are identified and developed based on the best available science and exploration methodologies.

Sensitive Areas are identified in Table 1.26 as follows, and are listed in the priority order of sensitivity.

Table 1.26- Sensitive Groundwater Development Areas

Sensitive Groundwater Development Areas	Percent of Available Groundwater Recharge needed to meet Anticipated Groundwater Uses (2005)*	Percent of Available Groundwater Recharge needed to meet Anticipated Groundwater Uses at Full Build-out*	Presence of Potential Contaminant Threats within Groundwater Development Area**
Marshall	26%	114%	Moderate to High
Bealeton	27%	86%	Moderate
New Baltimore	22%	45%	Moderate
Warrenton	36%	55%	Moderate
Remington	16%	74%	Low
Opal Service	10%	15%	High

*Data included in EGGI Water Resources Management Plan
**Data supplied by the VDH Source Water Assessment Program

- Groundwater Resources Objective GW3 (Management/Protection): Develop management strategies for protecting existing groundwater supplies. Such measures can include acquisition of property or easements within critical wellhead protection areas, developing redundancy in the groundwater supply systems (such as multiple wells or supply interconnections), and the development of

contingency plans for maintaining secure sources of water when contaminant spills or other emergencies threaten the quality and quantity of available groundwater resources.

- Groundwater Resources Objective GW4 (Monitoring): Establish a program for long-term monitoring of groundwater resources to assess whether the quality or quantity of groundwater resources are being adversely impacted through time. Data collected during this monitoring program shall be shared with the public and be used to promote groundwater resource protection.

- Groundwater Resources Objective GW5 (Education): Engage, educate, and enable the public to utilize groundwater resources more efficiently and to protect both groundwater quality and sustained availability.

  - Surface Water Resources Objective SW1 (Planning): Work with State and regional partners to preserve and protect the health of streams and reservoirs located within Fauquier County.

  - Surface Water Resources Objective SW2 (Planning): Coordinate a surface water management program with state and regional initiatives, including water supply planning, TMDL studies and implementation plans, Tributary Strategies, and other Chesapeake Bay programs.

- Surface Water Resources Objective SW3 (Management/Protection): Promote innovative stormwater management, including Low-Impact Development (LID). Coordinate groundwater and surface water protection.

- Surface Water Resources Objective SW4 (Management/Protection): Develop a riparian buffer protection program that leverages resources from state and regional partners.

- Surface Water Resources Objective SW5 (Monitoring): Work with DEQ, USGS, JMSWCD, and citizen volunteers to establish and maintain a monitoring program for County streams that can be used to gage changes through time and that is accessible to the public.

- Surface Water Resource Objective SW6 (Education) Engage, educate, and enable the public to utilize surface water resources more efficiently and protect surface water quality.

Wellhead Protection Programs

As stated above in Groundwater Resources Objective GW3, Fauquier County wants to pursue a wellhead protection program that includes the delineation of capture zones of public water supply systems. As resources allow, this objective will move forward.

Updated in 2007, the New Baltimore Service District Comprehensive Plan identifies groundwater protection as critical to the development of this area and delineated the general areas needing attention. This plan also recommended implementation of a wellhead protection program. That recommendation served as the leverage needed for the FCWSA to prepare for such a planning effort.

In 2008 the consulting firm Olver Incorporated produced a Wellhead Protection Plan for the Fauquier County Water and Sanitation Authority through a grant from the Virginia Department of Health (Olver, 2008). This study looked at the communities of Marshall, The Plains, Whitewood Forest, Green Meadows, Turnbull, Botha, Paris, Bethel Academy, Catlett Subdivision, Auburn Crossing, Opal Regional, and The Meadows to provide recommendations for promoting and protecting the public drinking water supply. Recommended actions included:

- Fauquier County designating a Source Water Protection Overlay District for public water systems.
- Considering wellhead protection requirements for future well locations.
- Developing a brochure that describes Source Water protection for FCWSA.
- Promote general education of the community on source water protection.
- Mail a Wellhead Protection brochure to each residence with the FCWSA distribution of the Consumer Confidence Report.
- Continue the practice of a FCWSA employee being at the well houses during fuel delivery to protect areas from spills.
- Consider an annual review with pertinent emergency response personnel in the Wellhead Protection Areas.
- Educate pesticide and herbicide applicators about the Wellhead Protection stressing safe application and storage practices.

In addition, Olver produced a similar document for the Town of Remington. Recommended actions in that document include:

- Develop a brochure describing Source Water Protection specifically for the Town of Remington and promote the general education of the community on Wellhead Protection.
- Mail the Town of Remington brochure to each residence in the WHPA and to each water customer coincident with the distribution of the annual Consumer Confidence Report.
- Install signs along the roadway in high visibility locations near to the designated boundary of the wellhead protection area that state “Entering a Source Water Protection Area.”
- Notify VDOT State and District offices of the Wellhead Protection Area (WHPA) that is crossed by Route 15.

- Identify active septic systems within the WHPA and distribute brochures on the importance of septic system maintenance.
- Identify homes with private wells and distribute information on proper management practices and well abandonment information.
- Identify homes with heating oil storage tanks and send information on monthly maintenance and drinking water protection.
- Annually review with pertinent emergency response personnel the designated WHPA zone and appropriate response procedures.
- Develop with the County the option of designating a Wellhead Protection Overlay District for public water systems in the County.
- Annually review and update the WHPP.

In 2010, Fauquier County applied for a grant from VDH and VADEQ to identify the recharge areas contributing to the wells in the Bealeton Community System. If awarded, the County will contract with EGGI in order to delineate these recharge areas. Once this information has been collected, the County will use this as the basis for a Wellhead Protection Program applied to the capture zone in Bealeton.

Monitoring Wells Program

Currently there are no adopted well monitoring programs in Fauquier County or the Towns of Remington and The Plains. However, Fauquier is working with EGGI to design a County-wide well monitoring program which would be implemented as resources allow. The design for the well monitoring program is scheduled to be completed in early 2011.

SECTION II: Existing Water Use Information (9 VAC 25-780-80)

The purpose of this section is to breakdown the different water users by type and amount. An attempt is made here to examine each category of water user listed in the regulation, and how much water they are using. While the previous section framed the capacity of the infrastructure currently in place, this section will focus on the actual use of the system. The existing water use information provided in this plan is current as of 2009, unless otherwise noted, and provided by Fauquier County Water and Sanitation Authority (FCWSA), the Town of Remington, Virginia Department of Health (VDH) files (monthly operations report and sanitary survey reports), and Virginia Department of Environmental Quality's (VADEQ) Water Use Data System.

This section of the regulation calls for information relating to each community water system located within the planning area. As discussed in Section I, Existing Water Sources, Fauquier County's planning approach is to define each community water system by the Towns and Service Districts laid out in the Fauquier County Comprehensive Plan. Therefore, individual community water systems are detailed within the service district and town context. In addition, the regulation calls for information about self-supplied users located within the planning area. Likewise, these users are presented either within a service district or outside the service districts.

It is important to note that each water authority sets its own estimate of persons per household. For example, if an authority does not identify its own estimate, VDH defaults to 4 persons per household in its permitting of a system capacity. However, FCWSA found 3.7 persons per household to be appropriate for reporting and design based on its experience with its systems. The Town of Remington uses 2.48 persons per household for reporting purposes. For planning purposes, Fauquier County uses the 2000 U.S. Census data of 2.75 persons per household. This section focuses on water usage, connections and population served, as reported to VDH.

Whenever Fauquier County undertakes a water use and projection planning process, it applies an accepted value of 100 gpd per person. This number is derived by incorporating the McGraw Hill Water Distribution System Handbook's estimate of 75 gpd per Virginian and increasing the amount by 25 gallons to account for other land uses such as agriculture and business (Mays 1999). Thus, when appropriate, 100 gallons per person per day is used in this section when no reported data are available.

When reviewing the FCWSA water use data the maximum day number can be misleading due to the fact that FCWSA often performs maintenance activities, such as flushing out the systems which requires a large amount of water. A high reading may also reflect a water main break or a lapse in readings due to inaccessibility of the meter. When appropriate, FCWSA adjusted the peak day data to replace atypical findings. Removing atypical findings got rid of the anomalies in order to generate more meaningful data suitable for planning purposes. For example, when a peak day was an obvious outlier for which FCWSA could identify, the second highest peak day was reported. The idea being that the jurisdiction should plan for "normal" peaking days, not anomalies.

The following information refers to the 2009 data contained in spreadsheets found in Appendix I.

Community Water Systems and Self-Supplied Users

The data provided in this section addresses indicators of water usage including the population served, the number of connections, the average and maximum daily withdrawal, the average monthly use, the total annual water use, average daily use and peak day use by month, and the disaggregated water use by customer category within the planning area of each community water system. This information is important as it serves as a baseline for evaluation of future water use trends.

The data provide a basis for developing water use projections. Once future use numbers have been established, the data generated here can be used as quality control in order to test the methodology used for the future projections. If the actual trends deviate from what is projected here, the basic assumptions made in this report may need to be modified during future submissions. The compilation of the data may also present areas where water demand management techniques could be effective. Most importantly, the data will be used to ensure sustainable water use by the community by comparing projected use to actual capacity and groundwater availability.

For each of the community water systems described below, the data was provided by FCWSA records with the exception of the Town of Remington who provided their own data. The data are based on metered water withdrawal well reports totaled for each community water system, and the metered water use of individual customers (used for billing purposes). There are instances where the average daily withdrawal and the average daily use totaled from the disaggregated customer categories do not match. This is due to the fact that the two sets of meters are reported on different schedules. In general, the metered water withdrawals should be considered the more accurate set of data because it is reported daily and evaluated monthly.

In addition to reporting on the community water systems, the regulation requires information about self-supplied users, both agricultural and non-agricultural, with an average annual water usage of either above 300,000 gpm or below 300,000 gpm. Each of these self-supplied users with available data is characterized by their location of, within or outside of a Service District boundary. At this time, there are no known self-supplied agricultural users, located within a Service District requiring more than 300,000 gpm. Woodward Turf Farm is the only known agricultural users requiring greater than 300,000 gpm and this operation is located outside of the Service District. For planning purposes self-supplied agricultural users requiring less than 300,000 gpm are all considered outside the Service Districts.

For each community water system described below, a table and a graph showing the Average Daily and Peak Day by Month is included. These figures are used to illustrate the variation of water use throughout the year within the community water system. As stated above, the systems are grouped by service districts and towns. All remaining systems, not located within a Town or Service District, are described in the “Outside Service Districts” category. Where available, given the data, a “multiplier” was generated by dividing the average daily use in a given peak month by the average annual daily use rate. This multiplier is used in the Projected Demand Section (Section IV) of this report in order to extrapolate peak month data for future use projections.

There are no Community Water Systems using stream intakes for water supply within the Planning Region, therefore stream intakes are not discussed in this Section.

Marshall Service District

The Marshall Service District contains one community water system that is operated by FCWSA. In 2009 the system was limited by lack of available storage and the necessity for line upgrades. It is important to note that the average daily water usage by resident may be artificially low due to the encouraged water demand management measures in place during the system upgrade. The figures and charts below outline the information presented in the data spreadsheets. Information is presented in million gallons (MG).

In the twelve months of 2009, the Marshall Service District has one community water system that withdrew a total of 39.96 MG. The total Service District average daily withdrawal was 109,000 gpd (0.109 MG per day) and the average monthly withdrawal was 3,330,000 gallons (3.33 MG per month). Information regarding the Marshall Service District water use can be found below in Table 2.1.

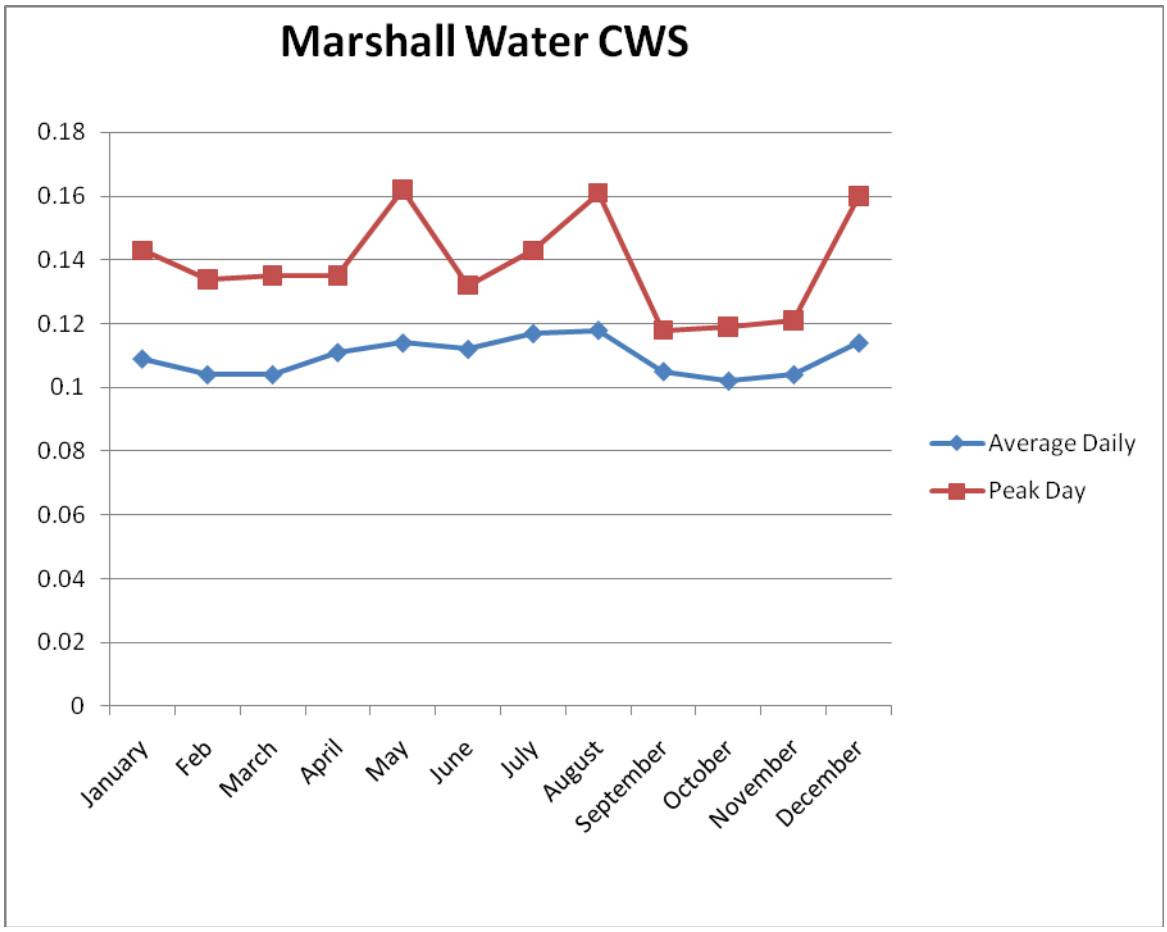
Table 2.1- Marshall Service District Water Use

Marshall Service District	Population (FCWSA)	Connections	Withdrawal (MG)		Avg. Monthly Use (MG)	Total Annual Use (MG)
			Avg. Daily	Max. Daily		
Marshall Service District CWS	2,039	551	0.109	0.162	3.33	39.96

Information provided by FCWSA in Appendix 1 FCWSA Data page 9

For the Marshall Community Water System, May contained the peak day for 2009 with 0.162 MG. August was the peak month of water use based on the average daily withdrawal was 0.118 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal (see table above) a "multiplier" of 1.08 is derived for future water use projections. (Average Daily in Peak Month/Annual Average Daily=Multiplier) Further discussion of the multiplier is included in Section Projected Water Use. Average daily peak days by month for the Marshall Service District are found below in Graph 2.1.

Graph 2.1- 2009 Average Daily Peak Day by Month for Marshall Service District



Information provided by FCWSA in Appendix 1 FCWSA Data page 13

For the Marshall Service District, the total residential water use was 0.056 MG per day, the total commercial water use was 0.019 MG per day, the unaccounted for loss was 0.018 MGD, and the total water use was 0.094 MG per day. Where available, this data was collected from the individual customer billing records. Table 2.2 includes information on the Marshall Service District water use broken down by user type.

Table 2.2- Marshall Service District Water Use Breakdown by User Type

Marshall Service District	Residential (MG per day)	Commercial (MG per day)	Other* (MG per day)	Unaccounted for Losses (MG per day)	Total CWS (MG per day)
Marshall Service District Total	0.056	0.019	0.001	0.018	0.094

Information provided by FCWSA in Appendix 1, FCWSA Data page 16

*Other refers to unmetered institutional uses by the Water Authority such as flushing and processing and fire flow in some cases

Self-Supplied Users in the Marshall Service District

In the Marshall Service District there are no non-agricultural or agricultural users of more than 300,000 gpm. There are four known commercial/institutional self-supplied users of less than 300,000 gpm, listed by the VDH as:

- Northern Fauquier Community Park
- Marshall/Coleman Schools
- Fauquier Livestock Exchange
- Frogs & Friends Restaurant

Based on the 2009 E-911, there are 522 residential and 150 commercial address (672 total addresses) points in the Marshall Service District. There are 551 connections to the community water system. Four of the self-supplied commercial address points are listed above. The proportion of the remaining self-supplied user categories is unknown. Based on the 2009 population estimate of 1428 (E911 x 2.75 persons per household) multiplied by 100 gallons per person per day, Marshall Service District uses 142, 825 gpd. The data from the community water system estimates 109,424 gpd. Therefore, it is assumed that 33,409 gpd are used by self-supplied users.

Warrenton Service District

The Warrenton Service District is addressed in two different locations. First, since the service district encompasses the Town of Warrenton which serves a large portion of the population, information can be found in the Town of Warrenton's 2010 Water Supply Plan as submitted to VADEQ (Town of Warrenton 2010). The remaining portion of the population is served by the New Baltimore Regional community water system. This system's information is detailed below in the New Baltimore Service District subsection. There are no self-supplied users, agricultural or non-agriculture, reporting more 300,000 gpm withdrawal to VADEQ. There is one non-agricultural user, Virginia Power, reporting less than 300,000 gpm. Due to the fact that New Baltimore Regional and the Town of Warrenton each serve the service

district population, there was not enough detailed information to calculate the potential remaining self-supplied users.

New Baltimore Service District

New Baltimore Community Water System

The New Baltimore Service District consists of both public and privately owned community water systems. FCWSA owns and operates the New Baltimore Regional Community Water System, both Baldwin Ridge and Lakeway are privately owned systems. The Lakeway system water use by month was not on record as of 2009. Because Lakeway and Baldwin Ridge had the same number of connections, and similar operations challenges, the Lakeway system use was charted by using the data available from the Baldwin Ridge system. The Vint Hill Economic Development Authority (VHEDA) system is owned by the VHEDA, but they have a contract in place with FCWSA to operate their system. The information for each community water system, as well as a compilation of information about all of the systems in the service district as a whole, is presented below.

In the twelve months of 2009, the New Baltimore Service District consisting of four community water systems withdrew a total of 268.78 MG. The total Service District average daily withdrawal was 736,000 gpd (0.736 million gpd) and the average monthly withdrawal was 22,400,000 gallons (22.4 million gallons per month). Information on all of the water systems included in the New Baltimore Service District is included below in Table 2.3.

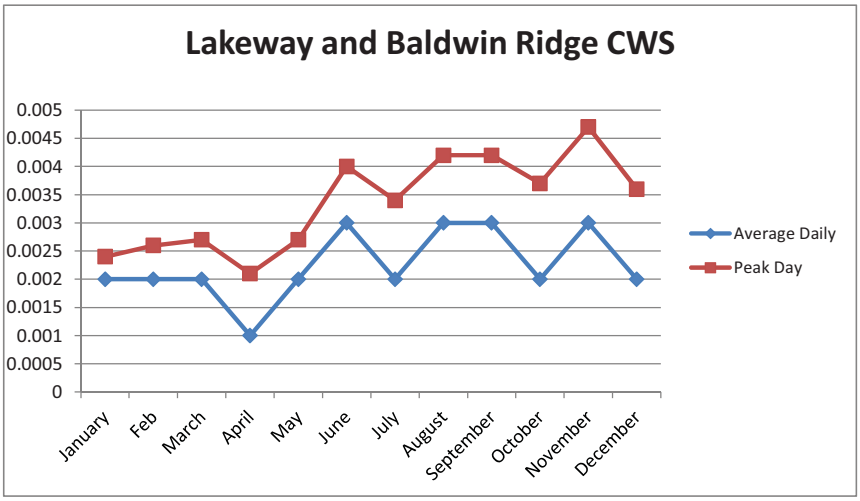
Table 2.3- New Baltimore Community Water Systems Water Use

New Baltimore Service District	Population	Connections	Withdrawal (MG)		Avg. Monthly Use (MG)	Total Annual Use (MG)
			Avg. Daily	Max. Daily		
Lakeway	25	12	0.002		0.07	0.82
Baldwin Ridge	25	12	0.002	0.005	0.07	0.82
New Baltimore Regional	7,918	2,140	0.615	1.109	18.71	224.54
Vint Hill EDA	1,325	358	0.117	0.332	3.55	42.60
Service District Total	*9,293*	*2,522*	*0.737*	*N/A*	*22.40*	*268.78*

Information provided by FCWSA in Appendix 1 FCWSA Data page 8

Average daily peak days by month for the Lakeway and Baldwin Ridge Community Water Systems are found below in Graph 2.2.

Graph 2.2- 2009 Average Daily and Peak Day Use for Baldwin Ridge and Lakeway Community Water Systems

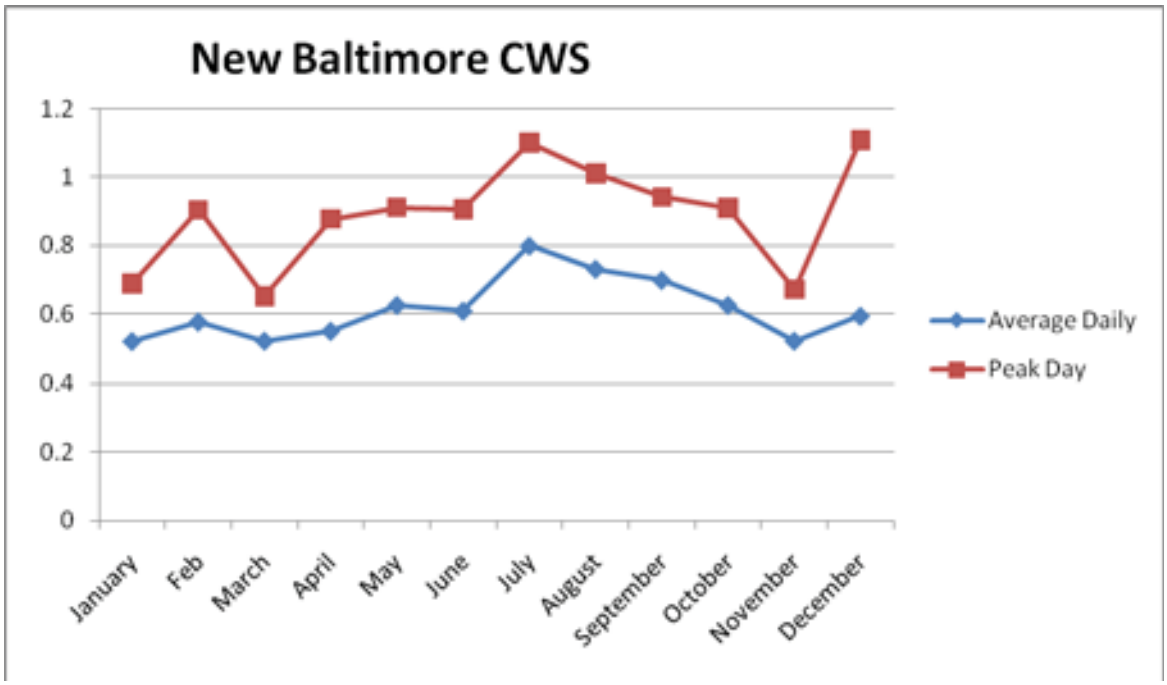


Data Provided by VDH- See Appendix 1, VDH Data page 16

For the Baldwin Ridge and Lakeway community water systems November contained the peak day for 2009 with 0.14 MG. June, August, September, and November all equaled the peak month of water use based on the average daily withdrawal was 0.003 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal a multiplier of 1.38 is derived for future water use projections. This graph does not sum the data from Lakeway and Baldwin Ridge but rather represents the actual data for Baldwin Ridge average day use and the estimate of peak day use based on the 1.5x peaking factor. This graph also represents the water use estimated for Lakeway for average day and peak day by month. The total water used by these two subdivisions would be twice the amount shown on the graph.

Average daily peak days by month for the New Baltimore Community Water System are found below in Graph 2.3.

Graph 2.3- 2009 Average Daily and Peak Day Use for New Baltimore Community Water System

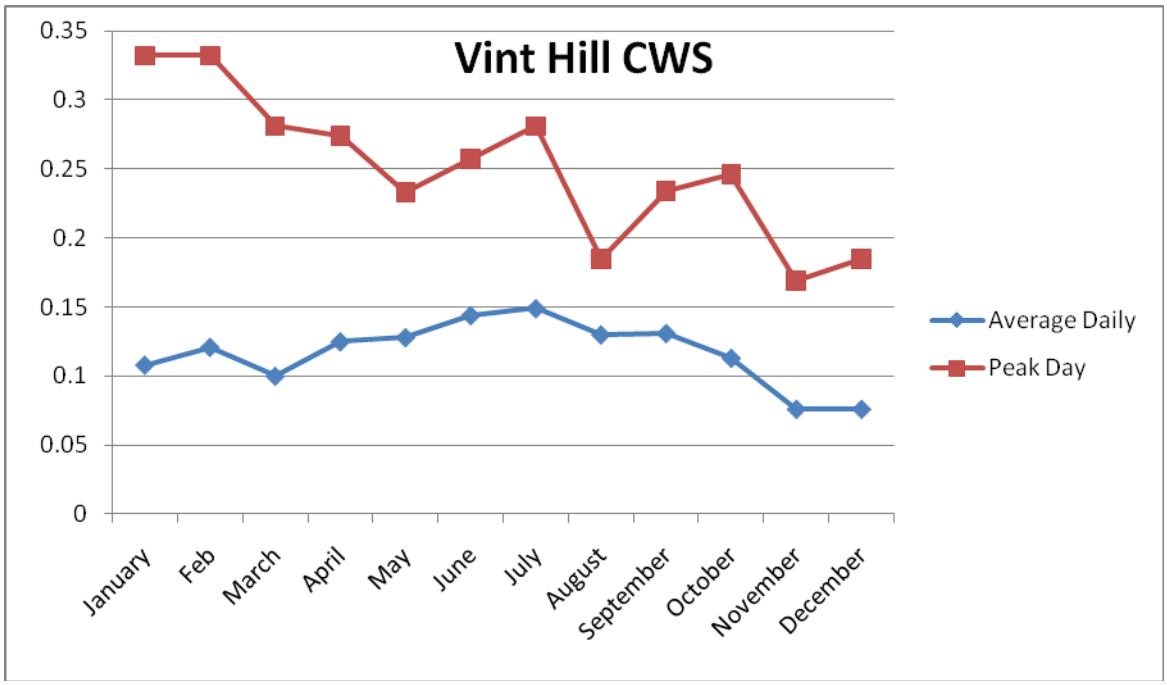


Data Provided by FCWSA- See Appendix 1, FCWSA Data page 11

For the New Baltimore community water system December contained the peak day for 2009 with 1.109 MG. July was the peak month of water use based on the average daily withdrawal was 0.8 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal a multiplier of 1.30 is derived for future water use projections.

The Average daily and peak day use information for the Vint Hill Community Water System can be found below in Graph 2.4.

Graph 2.4- 2009 Average Daily and Peak Day Use for the Vint Hill Community Water System



Data Provided by FCWSA- See Appendix 1, VHEDA Data page 9

For the Vint Hill community water system January and February both contained the peak day for 2009 with 0.332 MG. July was the peak month of water use based on the average daily withdrawal was 0.149 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal a multiplier of 1.28 is derived for future water use projections.

For New Baltimore Service District, the total residential water use was 0.477 MG per day the total commercial water use was 0.051 MG per day, the unaccounted for losses was 0.135 MG per day, and the total water use was 0.704 MG per day. Where available, this data was collected from the individual customer billing records. There are water losses through either water flushing, fire use, leaks, or other possible (SCADA tank readings). Information regarding the water use breakdown by user type within the New Baltimore Service District can be found below in Table 2.4.

Table 2.4- New Baltimore Service District Water Use Breakdown by User Type

New Baltimore	Residential (MG per day)	Commercial (MG per day)	Other* (MG per day)	Unaccounted for Losses (MG per day)	Total CWS (MG per day)
Lakeway	0.002				0.002
Baldwin Ridge	0.002				0.002
New Baltimore Regional	0.416	0.039	0.042	0.105	0.602
Vint Hill EDA	0.057	0.012	0.0005	0.030	0.100
Service District Total	*0.477*	*0.051*	*0.0425*	*0.135*	*0.704*

Information provided by VDH, FCWSA, and VHEDA Appendix 1, Data pages VDH 19, FCWSA 16, VHEDA page 11

*Other refers to unmetered institutional uses by the Water Authority such as flushing and processing and fire flow in some cases

Self-Supplied Users in the New Baltimore Service District

In the New Baltimore Service District there are no non-agricultural or agricultural users of more than 300,000 gpm. There are four known commercial/institutional self-supplied users of less than 300,000 gpm, labeled by the Virginia Department of Health as:

- Maplewood Child Care Center
- Town & Country Restaurant
- Spitonys Restaurant
- MacRidge Well

Based on the 2009 E-911, there are 278 residential and 78 commercial address points. There are 2,522 connections to the community water systems. Four of the self-supplied commercial address points are listed above. The proportion of the remaining self-supplied user categories is unknown. Based on the 2009 population estimate of 7,645 (E911 x 2.75 persons per household) multiplied by 100 gallons per person per day, New Baltimore Service District uses 764,500 gpd. The data from the community water system estimates 746,000 gpd. Therefore, it can be assumed that 18,500 gpd are used by self-supplied users. However, this equation is complicated by the fact that New Baltimore Regional community water system also serves a portion of the Warrenton Service District. Therefore, the true amount of water use by the self-supplied users is unknown.

Remington Service District and the Town of Remington

In the twelve months of 2009, the Remington Service District consisting of two community water systems, one of which is the Town of Remington, withdrew a total of 38.96 MG. The total Service

District average daily withdrawal was 107,000 gpd (0.107 MG per day) and the average monthly withdrawal was 3,250,000 gallons (3.25 MG per month). Information on the water use within the Remington Service District which includes both the Town of Remington as well as the Meadows and Ridge system operated by the FCWSA can be found below in Table 2.5

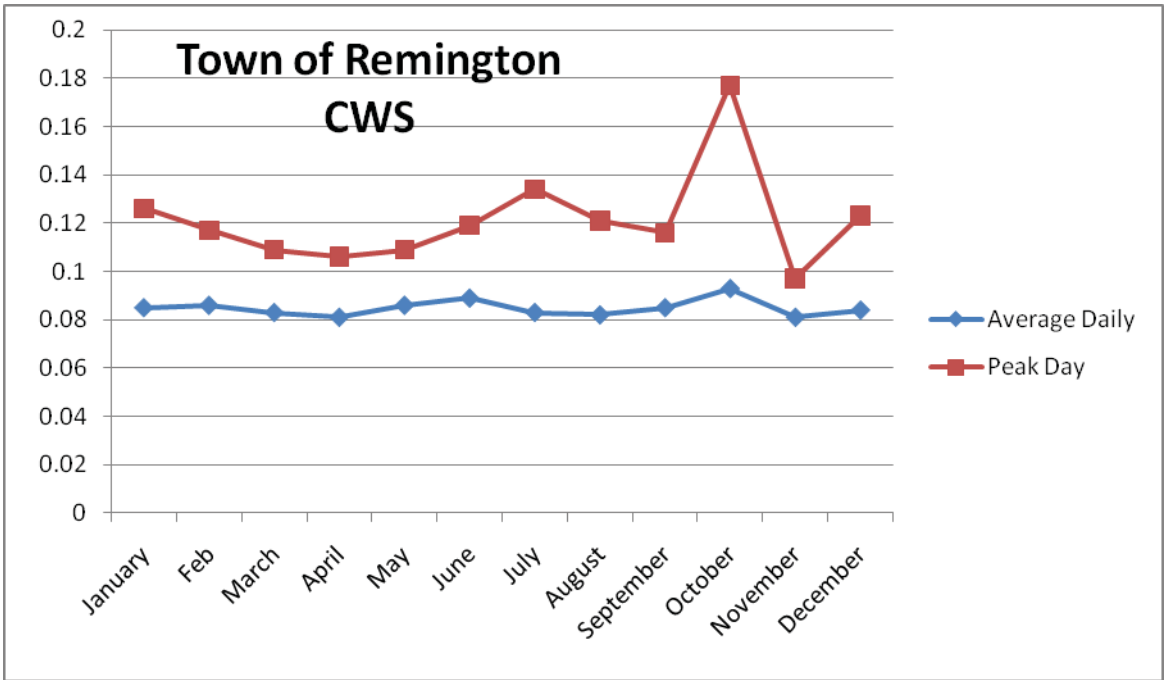
Table 2.5-Remington Service District Water Use

Remington Service District	Population	Connections	Withdrawal (MG)		Avg. Monthly Use (MG)	Total Annual Use (MG)
			Avg. Daily	Max. Daily		
Town of Remington	1,482	598	0.080	0.177	2.21	26.53
The Meadows (FCWSA)	581	157	0.034	0.081	1.04	12.43
Service District Total	*2,063*	*755*	*0.107*	*N/A*	*3.25*	*38.96*

Data Provided by FCWSA and the Town of Remington, See Appendix 1, FCWSA Data page 9 and Remington Data page 8

Graph 2.5 below shows the average daily and the peak day water use for the Town of Remington Community Water System.

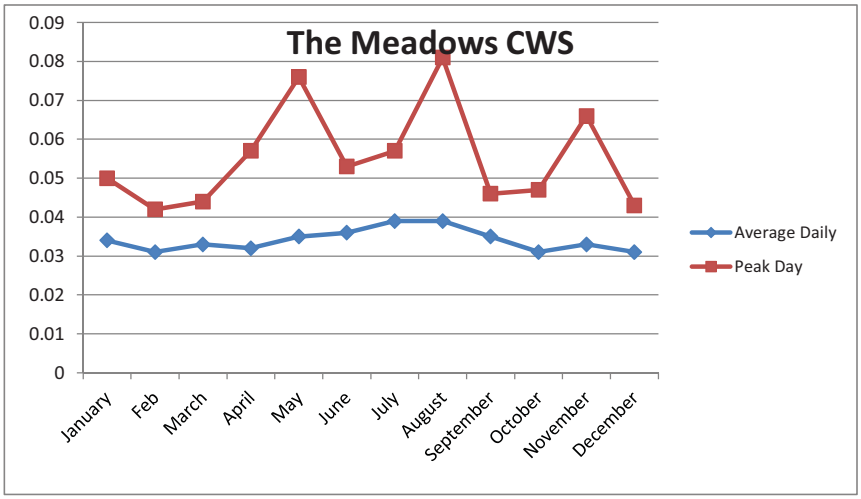
Graph 2.5- 2009 Average Daily and Peak Day Use for the Town of Remington Community Water System



Data Provided by the Town of Remington, See Appendix 1, Remington Data page 11

For the Town of Remington community water system July contained the peak day for 2009 with 0.134 MG. October was the peak month of water use based on the average daily withdrawal was 0.093 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal a multiplier of 1.28 is derived for future water use projections. Graph 2.6 below shows the average daily and peak day use for the Meadows and Ridge community water system.

Graph 2.6- 2009 Average Daily and Peak Day Use for The Meadows Community Water System



Data Provided by the FCWSA, See Appendix 1, FCWSA Data page 9

The Average Daily and Peak Day by Month graph illustrate the variation of water use within The Meadows community water system. As reported, August contained the peak day for 2009 with 0.081 MG. July and August were the peak months of water use based on the average daily withdrawal was 0.039 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal a multiplier of 1.15 is derived for future water use projections.

The Town of Remington does not track water use categories. Instead it bills only by per gallon use regardless of end user. The total community water system average annually for all categories is 0.085 MG per day. For the Meadows, the total residential water use was 0.057 MG per day, the total commercial water use was 0.012 MG per day, the other uses accounted for 0.0005 MG per day and the unaccounted for loss was 0.030 MG per day. The total water use for the Meadows was 0.100 MG per day, and the total use for the Service District with the Town included was 0.185 MG per day. Where available, these data were collected from the individual customer billing records. Table 2.6 provides a breakdown of the water use within the Remington Service District based on the user type.

Table 2.6- Remington Service District Water Use Breakdown by User Type

Remington Service District	Residential (MG per day)	Commercial (MG per day)	Other* (MG per day)	Unaccounted for Losses (MG per day)	Total CWS (MG per day)
Town of Remington	0.076**		N/A	0.00363	0.080
The Meadows	0.057	0.012	0.0005	0.030	0.100
Service District Total	*N/A*	*N/A*	*N/A*	*0.03363*	*0.180*

Data Provided by FCWSA and the Town of Remington, See Appendix 1, FCWSA Data page 16 and Remington Data page 13

*Other refers to unmetered institutional uses by the Water Authority such as flushing and processing and fire flow in some cases

**The Town of Remington does not distinguish between residential and commercial users

Self-Supplied Users in the Remington Service District

In the Remington Service District there are no non-agricultural or agricultural users of more than 300,000 gpm. The former Trinity Plastics Industrial site was purchased by TP Limited Partners in Culpeper in the 2006-7 timeframe. While the previous owners reported to VADEQ water usage of more than 10,000 gpd, the new owners stated in 2007 to VADEQ that their tenants combined water use is less than 10,000 gpd. Therefore, for the purposes of this report, TP Limited Partners is being considered a commercial/institutional self-supplied user of less than 300,000 gpm. There are no other known self-supplied users.

Based on the 2009 E-911, there are 630 residential and 18 commercial address points located outside the Town of Remington but inside the Remington Service District. There are 157 connections to the Meadows community water system in the Remington Service District. One self-supplied commercial address point is listed above. Based on the 2009 population estimate of 1733 (E911 x 2.75 persons per household) multiplied by 100 gallons per person per day, the Remington Service District uses 173,249 gpd. The data from the community water system estimate is 34,054 gpd. Therefore, it can be assumed that 139,195 gpd are used by self-supplied users.

For the Town of Remington, the number of self-supplied users is known. There are 36 residential users 13 commercial/institutional users. Therefore the estimated water use of self-supplied users in the Town of Remington is 9,900 gpd (36 residential units x 2.75 persons per household x 100 gpd). The total estimated annual volume would be 54.4 MG.

Bealeton Service District

In the twelve months of 2009, the Bealeton Service District consisting of two community water systems withdrew a total of 123.73 MG. The total Service District average daily withdrawal was 339,000 gpd (0.339 MG per day) and the average monthly withdrawal was 10,310,000 gallons (10.31 MG per month). The water use for the Bealeton Service District is included in Table 2.7 below.

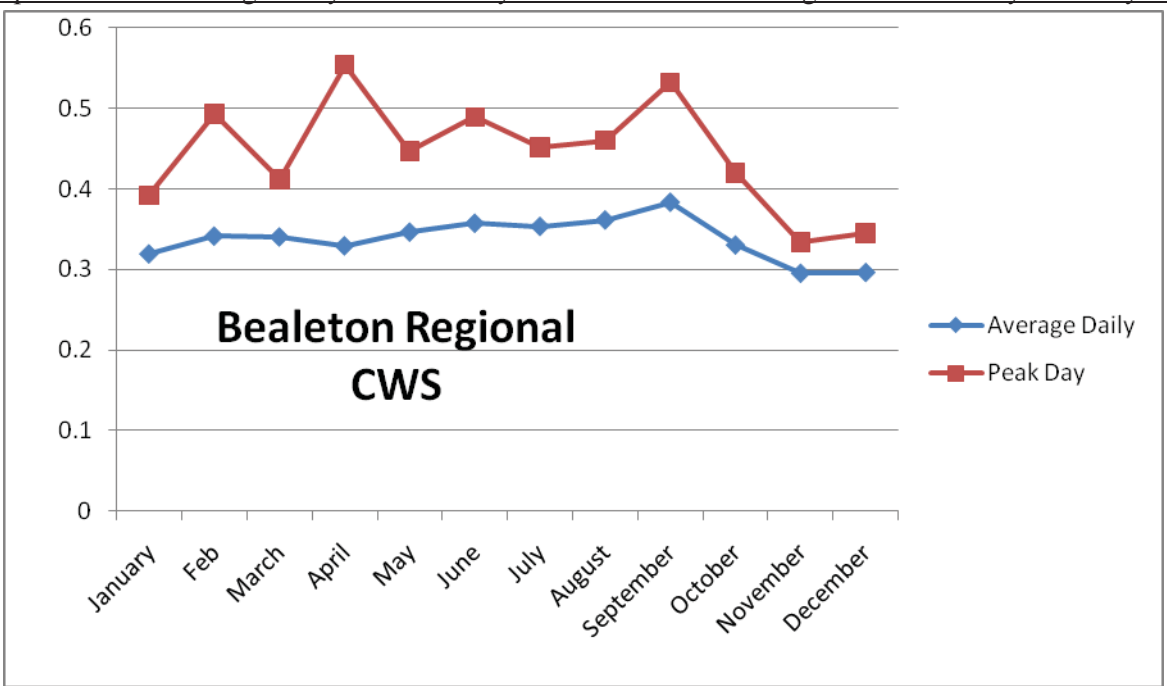
Table 2.7- Bealeton Service District Water Use

Bealeton Service District	Population (FCWSA)	Connections	Withdrawal		Avg. Monthly Use (MG)	Total Annual Use (MG)
			Avg. Daily (MG)	Max. Daily (MG)		
Blue Ridge Christian Home	42	1	0.002		0.05	0.58
Bealeton Regional	4,551	1,230	0.337	0.554	10.26	123.15
Service District Total	*4,593*	*1,231*	*0.339*	*N/A*	*10.31*	*123.73*

Data Provided by FCWSA, See Appendix 1, FCWSA Data page 8

Graph 2.7 below includes information on the average daily and the peak day use for the Bealeton Regional Community Water System.

Graph 2.7- 2009 Average Daily and Peak Day Use for the Bealeton Regional Community Water System

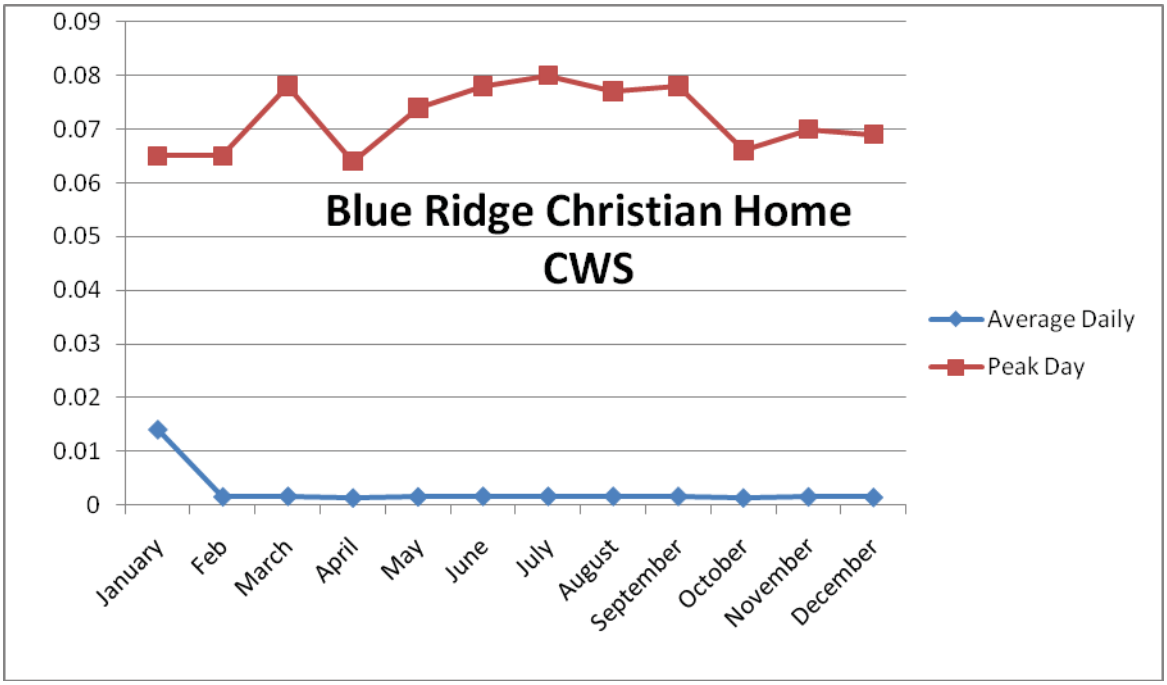


Data provided by FCWSA- See Appendix 1, FCWSA Data page 14

For the Bealeton Regional community water system April contained the peak day for 2009 with 0.554 MG. September was the peak month of water use based on the average daily withdrawal was 0.383 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal (see table above) a multiplier of 1.14 is derived for future water use projections.

Graph 2.8 below includes information on the average daily and the peak day use for the Blue Ridge Christian Home Community Water System.

Graph 2.8- 2009 Average Daily and Peak Day Use for the Blue Ridge Christian Home Community Water System



Data provided by VDH- See Appendix 1, VDH Data page 16

For the Blue Ridge community water system July contained the peak day for 2009 with 0.08 MG. January was the peak month of water use based on the average daily withdrawal was 0.014 MG per day.

For Bealeton Service District, the total residential water use was 0.198 MG per day, the total commercial water use was 0.058 MG per day, the unaccounted for loss was 0.047 MG per day, and the total water use was 0.312 MG per day. Where available, this data was collected from the individual customer billing records. The data for the Blue Ridge Christian Home was equally divided between residential and commercial due to the nature of a nursing home business.

The Bealeton Service District water use breakdown by user type is included below in Table 2.8.

Table 2.8- Bealeton Service District Water Use Breakdown by User Type

Bealeton Service District	Residential (MG per day)	Commercial (MG per day)	Other* (MG per day)	Unaccounted for Losses (MG per day)	Total CWS (MG per day)
Blue Ridge Christian Home	0.001	0.001	N/A	N/A	0.002
Bealeton Regional	0.197	0.057	0.008	0.047	0.310
Total for Use for Service District	0.198	0.058	0.008	0.047	0.312

Data provided by FCWSA- See Appendix 1, FCWSA Data page 16

*Other refers to unmetered institutional uses by the Water Authority such as flushing and processing and fire flow in some cases

Self-Supplied Users in the Bealeton Service District

In the Bealeton Service District there are no non-agricultural or agricultural users of more than 300,000 gpm. There are also no reporting commercial/institutional self-supplied users of less than 300,000 gpm.

Based on the 2009 E-911, there are 1,220 residential and 98 commercial address points. There are 1,231 connections to the community water systems. The proportion of the remaining self-supplied user categories is unknown. Based on the 2009 population estimate of 3,355 (E911 x 2.75 persons per household), plus 42 additional people to account for the Blue Ridge Christian home population, multiplied by 100 gallons per person per day, Bealeton Service District uses 339,425 gpd. The data from the community water systems estimates 338,986 gpd. Therefore, it can be assumed that 439 gpd are used by self-supplies users.

Catlett Service District

In the twelve months of 2009, the Catlett Service District consisting of one community water system withdrew a total of 6.08 million gallons. The total Service District average daily withdrawal was 17,000 gpd (0.017 MG per day) and the average monthly withdrawal was 510,000 gallons (0.51 MG per month). Information in the water use within the Catlett Service District is included below in Table 2.9.

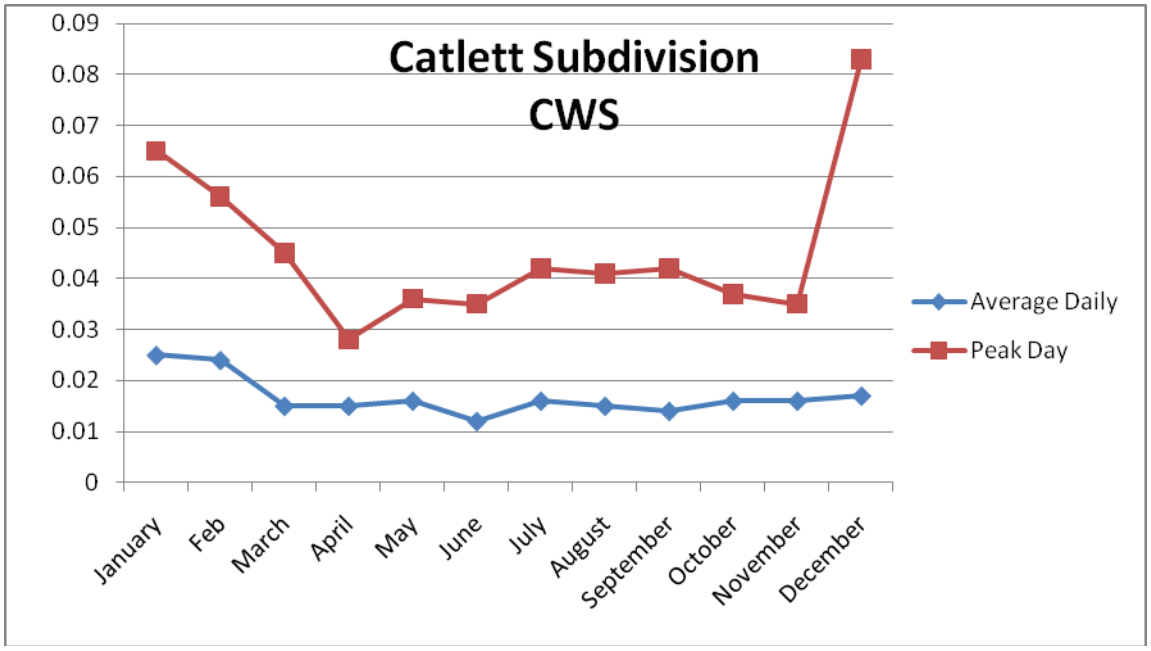
Table 2.9- Catlett Service District Water Use

Catlett Service District	Population (FCWSA)	Connections	Withdrawal (MG)		Avg. Monthly Use (MG)	Total Annual Use (MG)
			Avg. Daily	Max. Daily		
Catlett Subdivision	237	64	0.017	0.083	0.51	6.08

Data provided by FCWSA se Appendix 1, FCWSA Data page 8

For the Catlett community water system December contained the peak day for 2009 with 0.083 MG. January was the peak month of water use based on the average daily withdrawal was 0.025 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal (see table above) a multiplier of 1.47 is derived for future water use projections.

Graph 2.9- 2009 Average Daily and Peak Day Use for the Catlett Subdivision Community Water System



Data provided by FCWSA- See Appendix 1, FCWSA Data page 11

For Catlett Service District, the total residential water use was 0.009 MG per day, the total commercial water use was 0.0003 MG per day, the unaccounted for loss was 0.008 MG per day and the total water use was 0.017 MG per day. Where available, this data was collected from the individual customer billing records.

Table 2.10- Catlett Service Water Use Breakdown by User Type

Catlett Service District	Residential (MG per day)	Commercial (MG per day)	Other* (MG per day)	Unaccounted for Losses (MG per day)	Total CWS (MG per day)
Catlett Subdivision	0.009	0.0003	0.001	0.008	0.017
Service District Total	*0.009*	*0.0003*	*0.001*	*0.008*	*0.017*

Data provided by FCWSA se Appendix 1, FCWSA Data page 16

*Other refers to unmetered institutional uses by the Water Authority such as flushing, processing and fire flow

Self-Supplied Users in the Catlett Service District

In the Catlett Service District there are no non-agricultural or agricultural users of more than 300,000 gpm. There are no reporting commercial/institutional self-supplied users of less than 300,000 gpm.

Based on the 2009 E-911, there are 125 residential and 40 commercial address points. There are 64 connections to the community water system. The proportion of the remaining self-supplied user categories is unknown. Based on the 2009 population estimate of 344 (E911 x 2.75 persons per household) multiplied by 100 gallons per person per day, Catlett Service District uses 34,375 gpd. The data from the community water system estimates 16,657 gpd. Therefore, it can be assumed that 17,718 gpd are used by self-supplied users.

Calverton Service District

There were no community water systems located within this service district as of 2009. Estimated water usage is detailed purely as self-supplied users. There are no non-agricultural or agricultural users of more than 300,000 gpm. There are three known commercial/institutional self supplied users of less than 300,000 gpm, labeled by the VDH as:

- Chemetrics, Inc. (Lab supply company)
- Pearson Elementary School
- Southeastern Elementary (Southeastern Alternative High School)

Based on the 2009 E-911, there are 78 residential and 42 commercial address points. Three of the self-supplied commercial address points are listed above. Based on the 2009 population estimate of 215 (E911 x 2.75 persons per household) multiplied by 100 gallons per person per day, Calverton Service District uses 21,450 gpd. Therefore, it can be assumed that 21,450 gpd are used by self-supplied users.

Midland Service District

There were no community water systems located within this service district as of 2009. Estimated water usage is detailed purely as self-supplied users. There are no non-agricultural or agricultural users of more than 300,000 gallons per month. There are three known commercial/institutional self-supplied users of less than 300,000 gallons per month, labeled by the Virginia Department of Health as:

- Midland Christian Academy (school)
- Ross Industries – Midland (industrial supply)
- Midland Church of the Brethren

Based on the 2009 E-911, there are 62 residential and 41 commercial address points. Three of the self-supplied commercial address points are listed above. Based on the 2009 population estimate of 171 (E911 x 2.75 persons per household) multiplied by 100 gallons per person per day, Midland Service District uses 17,050 gpd. Therefore, it can be assumed that 17,050 gpd are used by self-supplied users.

The Town of the Plains

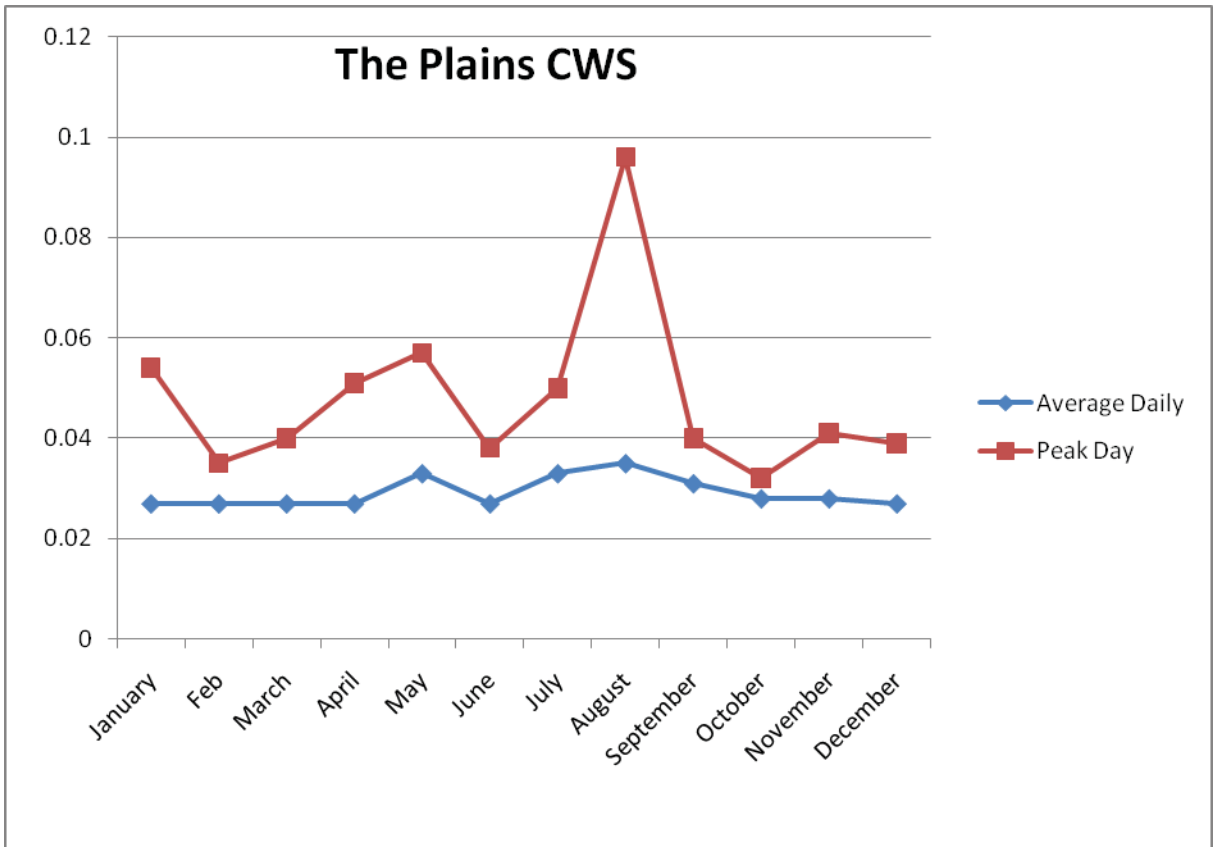
The Town of the Plains owns its own community water system; however the system is operated by FCWSA. Information on the water use in the Town of The Plains is included below in Table 2.11.

Table 2.11-The Town of The Plains Community Water System Use

The Town of The Plains	Population	Connections	Withdrawal (MG)		Avg. Monthly Use (MG)	Total Annual Use (MG)
			Avg. Daily	Max. Daily		
Town of The Plains (total)	544	147	0.029	0.096	0.89	10.66

Information provided by FCWSA in Appendix 1, FCWSA Data page 8

Graph 2.10- 2009 Average Daily and Peak Day Use for The Plains Community Water System



Data provided by FCWSA- see Appendix 1, FCWSA Data page 12

For The Plains community water system August contained the peak day for 2009 with 0.096 MG. August was the peak month of water use based on the average daily withdrawal was 0.035 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal a multiplier of 1.20 is derived for future water use projections.

For the Town of The Plains, the total residential water use was 0.014 MG per day the total commercial water use was 0.005 MG per day, other uses accounted for 0.001 MG per day and the unaccounted for loss was 0.011 MG per day. The total water use was 0.030 MG per day. Where available, this data was collected from the individual customer billing records. There are water losses through either water flushing, fire use, leaks, or other possible (SCADA tank readings)._Information regarding the water use breakdown by user type for the Town of The Plains is included below in Table 2.12.

Table 2.12- The Town of the Plains Water Use Breakdown by User Type

	Residential (MG per day)	Commercial (MG per day)	Other* (MG per day)	Unaccounted for Losses (MG per day)	Total CWS (MG per day)
The Plains	0.014	0.005	0.001	0.011	0.030

Data Provided by FCWSA, See Appendix 1, FCWSA Data page 16

*Other refers to unmetered institutional uses by the Water Authority such as flushing and processing and fire flow in some cases

Opal Service District

In the twelve months of 2009, the Opal Service District consisting of one community water system withdrew a total of 15.14 million gallons. The total Service District average daily withdrawal was 41,000 gpd (0.041 MG per day) and the average monthly withdrawal was 1,260,000 gallons (1.26 MG per month).

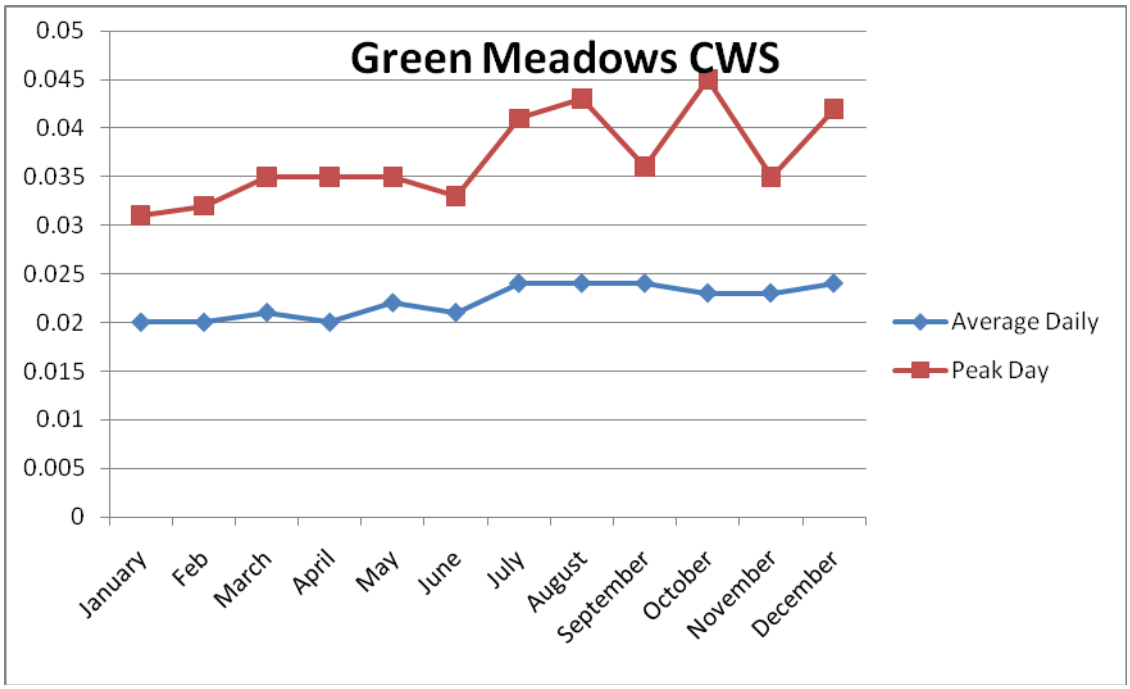
Table 2.13-Opal Service District Water Use

Opal Service District	Population (FCWSA)	Connections	Withdrawal (MG)		Avg. Monthly Use (MG)	Total Annual Use (MG)
			Avg. Daily	Max. Daily		
Green Meadows	344	93	0.022	0.045	0.68	8.13

Data Provided by FCWSA, See Appendix 1, FCWSA Data page 8

For Opal Service District, the total residential water use was 0.021 MG per day, the total commercial water use was 0.008 MG per day, the unaccounted for loss was 0.011 MG per day, and the total water use was 0.040 MG per day. Where available, this data was collected from the individual customer billing records.

Graph 2.11- 2009 Average Daily and Peak Day Use for the Green Meadows Community Water System



Data provided by FCWSA- See Appendix 1, FCWSA Data page 12

For the Green Meadows community water system October contained the peak day for 2009 with 0.045 MG. July, August, September, and December were all peak months of water use based on the average daily withdrawal was 0.024 MG per day. The Green Meadows system contains a series of three green sand filters which alternate and encounter water losses through either water flushing, fire use, leaks, and also other possible activities (SCADA tank readings). Information regarding the Opal Service District water use breakdown by user type is included below in Table 2.14

Table 2.14- Opal Service District Water Use Breakdown by User Type

Opal Service District	Residential (MG per day)	Commercial (MG per day)	Other* (MG per day)	Unaccounted for Losses (MG per day)	Total CWS (MG per day)
Green Meadows	0.013	0	0	0.009	0.022

Data provided by FCWSA se Appendix 1, FCWSA Data page 8

*Other refers to unmetered institutional uses by the Water Authority such as flushing and processing and fire flow in some cases

Self-Supplied Users in the Opal Service District

In the Opal Service District there are no non-agricultural or agricultural users of more than 300,000 gpm. There are four known commercial/institutional self supplied users of less than 300,000 gpm, labeled by the Virginia Department of Health as:

- Sheetz 221 (Gas Station/ Restaurant)
- Pete's Park 'n Eat (Restaurant)
- McDonalds Opal (Gas Station/ Restaurant)
- Quarles Truck Stop (Gas Station/ Restaurant)

Based on the 2009 E-911, there are 144 residential and 56 commercial address points. There are 93 connections in the Green Meadows subdivision and 156 connections to the community water system (some located inside the Service District and some located outside of the Service District). Four of the self-supplied commercial address points are listed above. The proportion of the remaining self-supplied user categories is unknown. Based on the 2009 population estimate of 396 (E911 x 2.75 persons per household) multiplied by 100 gallons per person per day, Opal Service District uses 39,600 gpd. The data from the community water system estimates 41,000 gallons per day. Therefore, this equation does not help determine the gap between the estimated and known water use in the Opal Service District. The self-supplied water use cannot be calculated.

Outside Service Districts

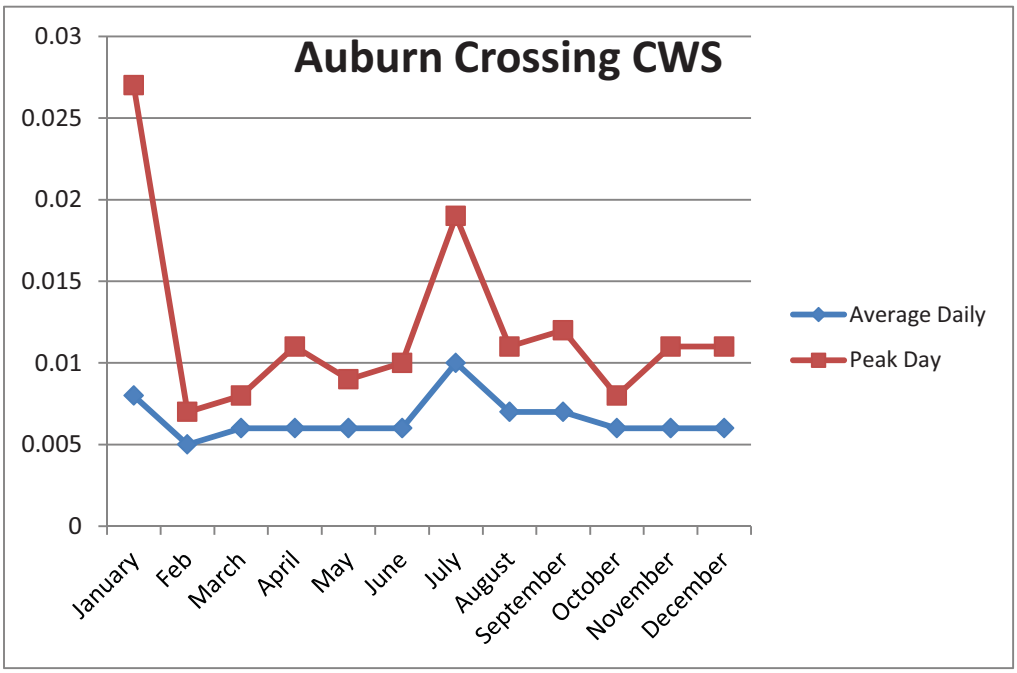
In the twelve months of 2009, the eleven community water systems located outside of Service Districts withdrew a total of 60.46 MG. The total average daily withdrawal was 166,000 gpd (0.166 MG per day) and the average monthly withdrawal was 5,040,000 gallons (5.04 MG per month). Information regarding the water use in the Community Water Systems located outside of Service Districts is included below in Tabls 2.15

Table 2.15- Outside Service District Water Use

System	Population	Connections	Withdrawal (MG)		Avg. Monthly Use (MG)	Total Annual Use (MG)
			Avg. Daily	Max. Daily		
Auburn Crossing	118	32	0.007	0.027	0.20	2.45
Whitewood Forest	70	19	0.003	0.016	0.10	1.23
Opal Regional	577	156	0.041	0.066	1.26	15.14
Waterloo Estates	182	73	0.016		0.48	5.71
Drysdale		27	0.004		0.12	1.47
Bethel Academy	437	118	0.018	0.031	0.54	6.43
Botha	63	17	0.003	0.015	0.10	1.19
Fauquier Springs – Sulphur Springs	400	20	0.010		0.30	3.62
Marsh Run Mobile Park	943		0.088		2.66	31.97
Paris	144	39	0.012	0.021	0.37	4.39
Turnbull	133	36	0.005	0.02	0.17	2.00
Outside Service District Total	*N/A*	*N/A*	*0.166*	*N/A*	*5.04*	*60.46*

Data provided by VDH and FCWSA, see Appendix 1 VDH Data page 6 and FCWSA Data page 8

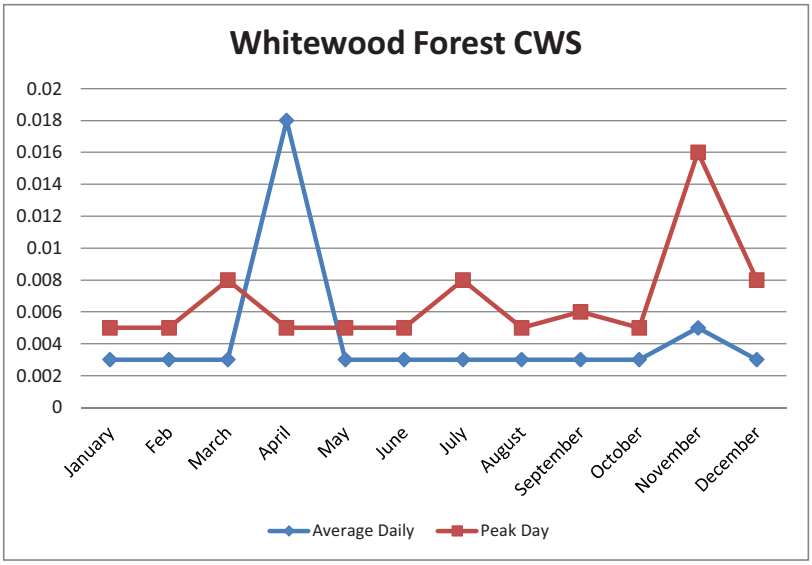
Graph 2.12- 2009 Average Daily and Peak Day Use for the Auburn Crossing Community Water System



Data provided by FCWSA- See Appendix 1, FCWSA Data page 12

For the Auburn Crossing community water system January contained the peak day for 2009 with 0.027 MG. July was the peak month of water use based on the average daily withdrawal was 0.01 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal (see table above) a "multiplier" of 1.43 is derived for future water use projections. (Average Daily in Peak Month/Annual Average Daily=Multiplier)

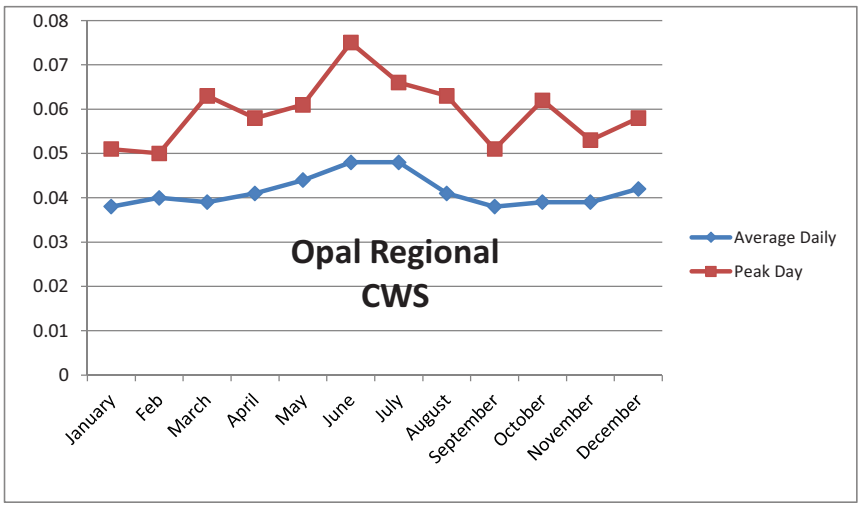
Graph 2.13- 2009 Average Daily and Peak Day Use for the Whitewood Forest Community Water System



Data provided by FCWSA, See Appendix 1 FCWSA Data page 13

For the Whitewood Forest community water system November contained the peak day for 2009 with 0.016 MG. April was the peak month of water use based on the average daily withdrawal was 0.018 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal (see table above) a multiplier of 1.48 is derived for future water use projections.

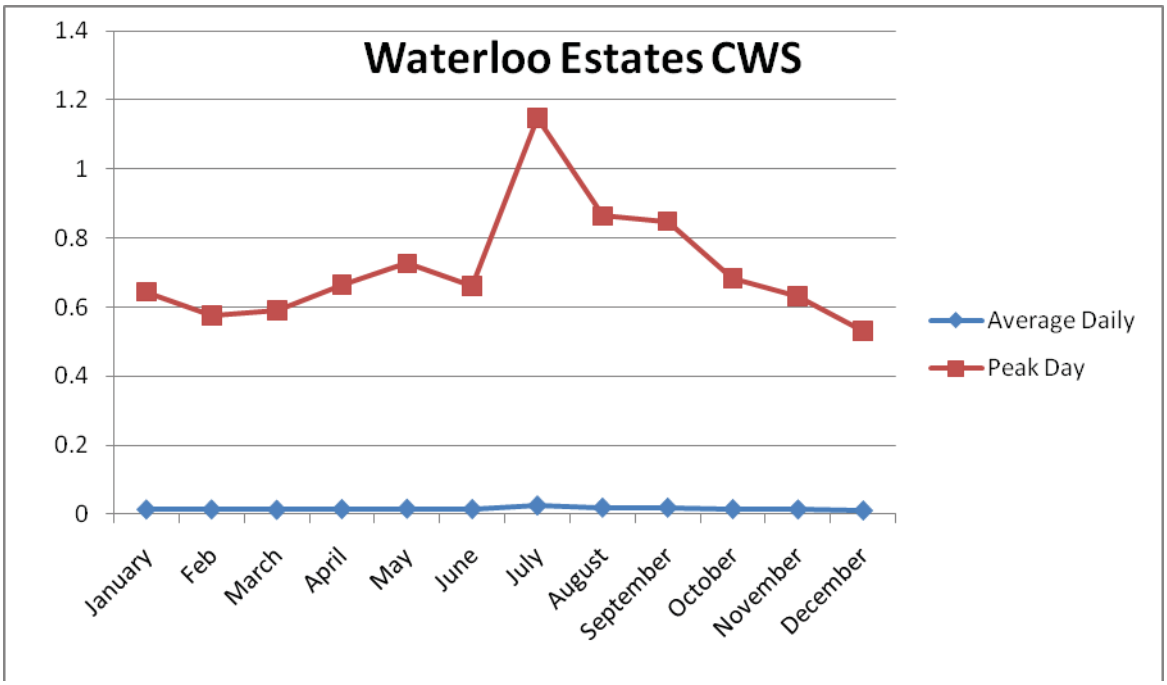
Graph 2.14- 2009 Average Daily and Peak Day Use for the Opal Regional Community Water System



Data provided by FCWSA- See Appendix 1, FCWSA Data page 11

For the Opal community water system June contained the peak day for 2009 with 0.075 MG. June and July were the peak months of water use based on the average daily withdrawal was 0.048 MG per day. When the average daily withdrawal of this peak month is compared to the annual average daily withdrawal a multiplier of 1.16 is derived for future water use projections.

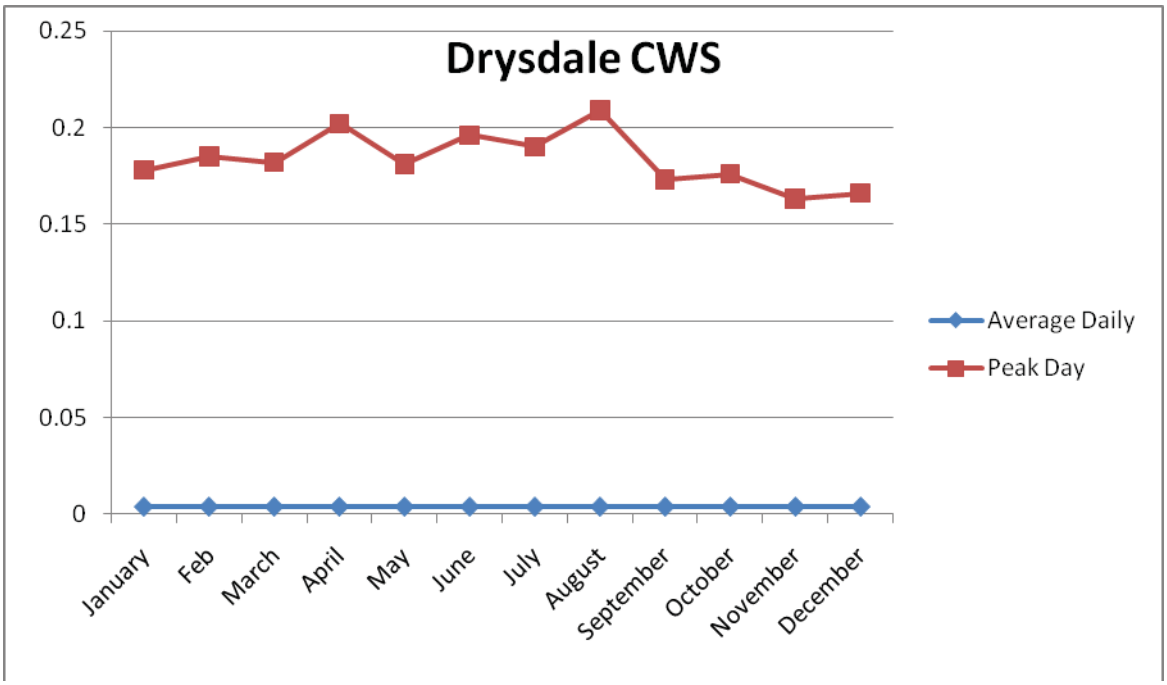
Graph 2.15- 2009 Average Daily and Peak Day Use for the Waterloo Estates Community Water System



Data provided by VDH, see Appendix 1, VDH Data page 16

For the Waterloo Estates community water system, July contained the peak day for 2009 with 1.148 MG. July was the peak month of water use based on the average daily withdrawal was 0.025 MG per day. Multiplier= 1.56

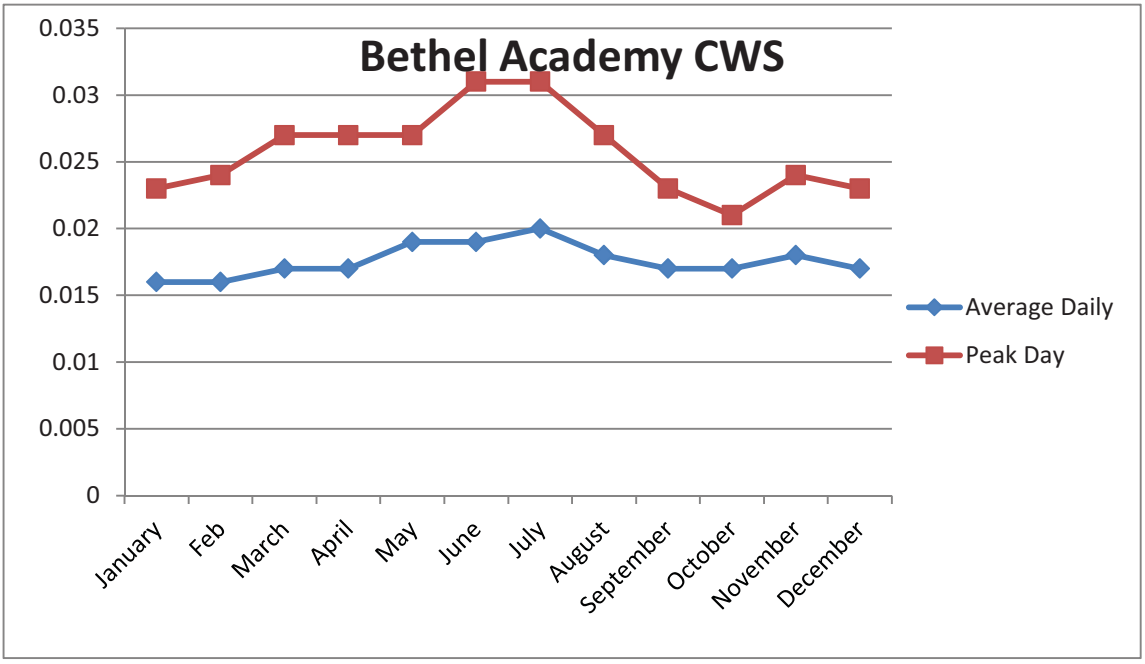
Graph 2.16-2009 Average Daily and Peak Day Use for the Drysdale Community Water System



Data provided by VDH- See Appendix 1, VDH Data page 16

For the Drysdale community water system August contained the peak day for 2009 with 0.209 MG. The entire calendar year had an average daily withdrawal was 0.004 MG per day.

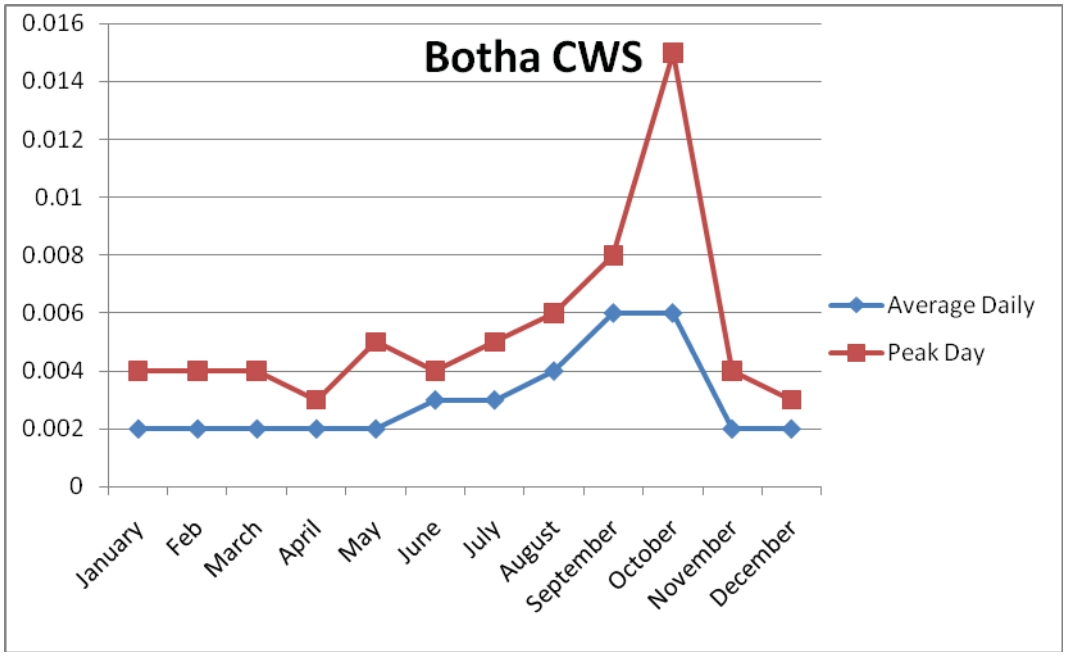
Graph 2.17- 2009 Average Daily and Peak Day Use for the Bethel Community Water System



Data provided by FCWSA- See Appendix 1, FCWSA Data page 12

For the Bethel Academy community water system, June and July both contained the peak day for 2009 with 0.031 MG. July was the peak month of water use based on the average daily withdrawal was 0.02 MG per day.

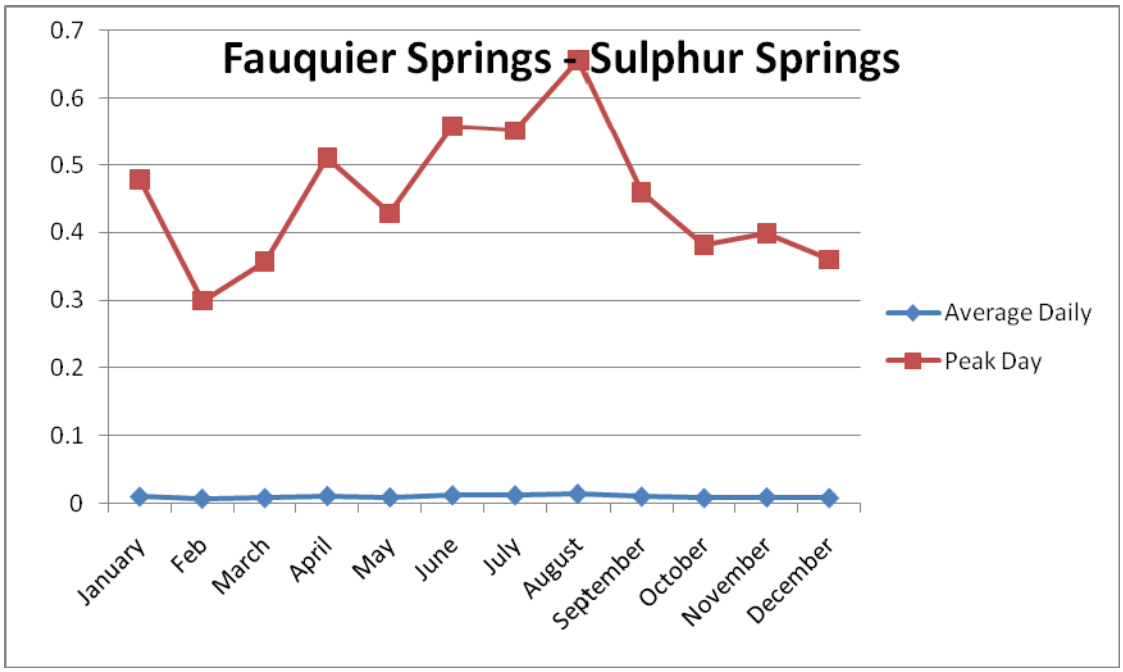
Graph 2.18- 2009 Average Daily and Peak Day Use for the Botha Community Water System



Data provided by FCWSA, See Appendix 1, FCWSA Data page 13

For the Botha Community Water System, October contained the peak day for 2009 with 0.015 MG. September and October were the peak months of water use based on the average daily withdrawal was 0.006 MG per day.

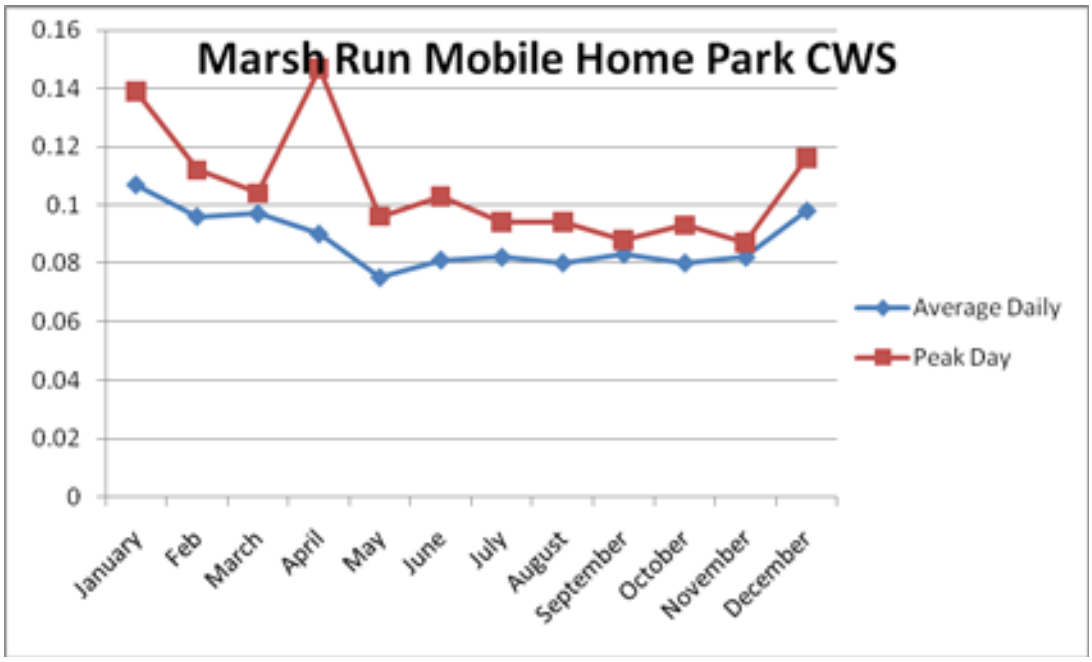
Graph 2.19- 2009 Average Daily and Peak Day Use for the Fauquier Springs Community Water System



Data provided by VDH, See Appendix 1VDH Data page 16

For the Fauquier Springs – Sulphur Springs community water system, August contained the peak day for 2009 with 0.656 MG. August was the peak month of water use based on the average daily withdrawal was 0.014 MG per day.

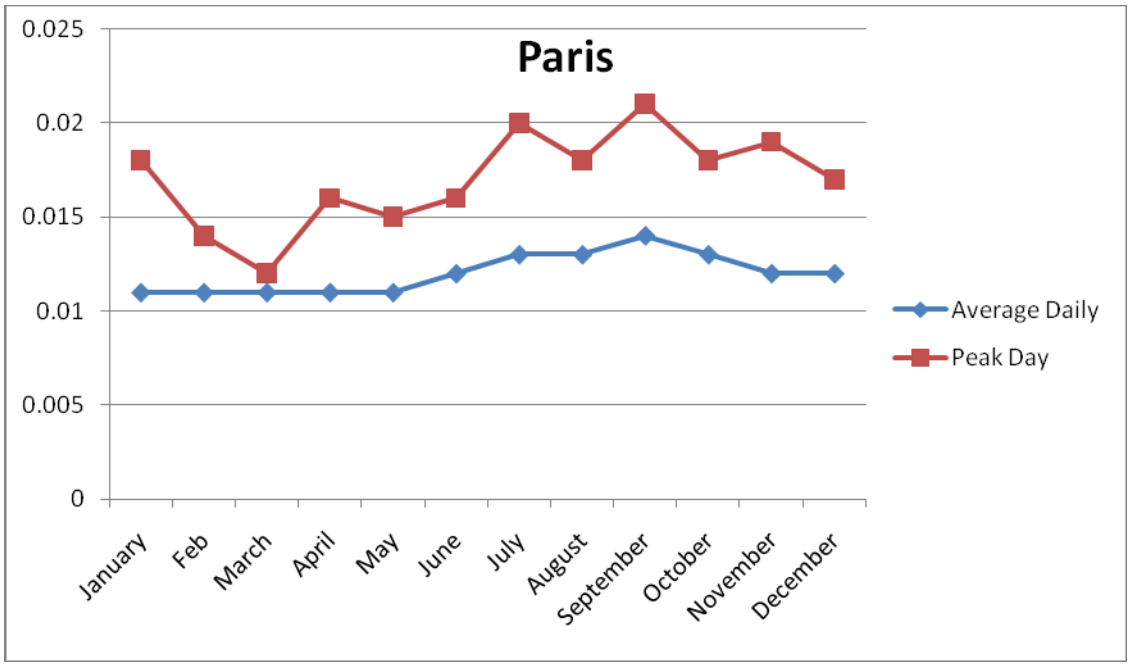
Graph 2.20- 2009 Average Daily and Peak Day Use for the Marsh Run Mobile Home Park Community Water System



Data provided by VDH, See Appendix 1 VDH Data page 16

For the Marsh Run Mobile Park community water system, January contained the peak day for 2009 with 0.139 MG. January was the peak month of water use based on the average daily withdrawal was 0.107 MG per day.

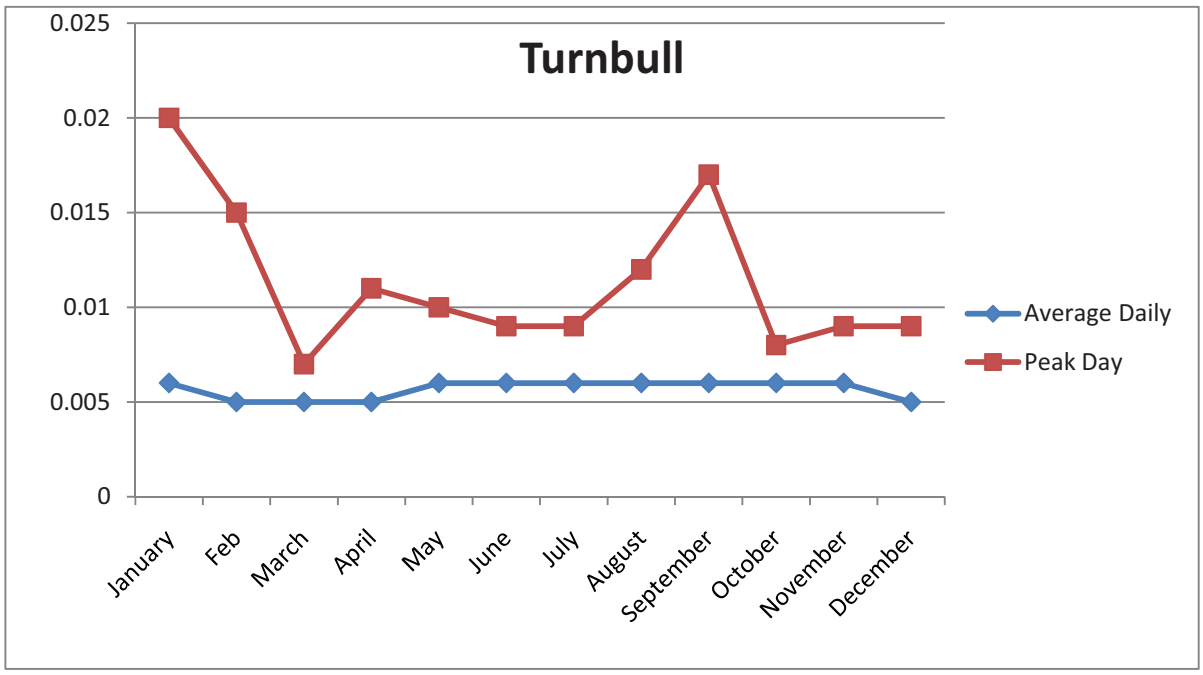
Graph 2.21- 2009 Average Daily and Peak Day Use for the Paris Community Water System



Data provided by FCWSA, See Appendix 1 FCWSA Data page 11

For the Paris community water system, September contained the peak day for 2009 with 0.021 million gallons. September was the peak month of water use based on the average daily withdrawal was 0.014 million gpd.

Graph 2.22- 2009 Average Daily and Peak Day Use for the Turnbull Community Water System



Data provided by FCWSA, see Appendix 1, FCWSA Data page 13

For the Turnbull community water system September contained the peak day for 2009 with 0.017 MG. January, May, June, July, August, September, October, and November were all peak months of water use based on the average daily withdrawal was 0.006 MG per day

For outside service districts, the total residential water use was 0.154 MG per day, and there were no commercial water users of the community water systems. The unaccounted for loss was 0.012 MG per day. The total water use for all systems outside of the service districts was 0.166 MG per day. Where available, this data was collected from the individual customer billing records. The Paris system experiences unaccounted water losses even though new water lines have been installed. The Turnbull system experiences water loss through water flushing, fire use, leaks, and other possible activities (SCADA tank readings).

Table 2.16- Outside Service District Water Use Breakdown by User Type

Outside Service Districts	Residential (MG per day)	Commercial (MG per day)	Other* (MG per day)	Unaccounted for Losses (MG per day)	Total CWS (MG per day)
Auburn Crossing	0.006	0	0	0.001	0.007
Whitewood Forest	.002	0	0	0.001	0.003
Opal Regional	0.021	0.008	0.0001	0.011	0.040
Waterloo Estates	0.016	0	0		0.016

Drysdale	0.004	0	0		0.004
Bethel Academy	0.016	0	0	0.001	0.017
Botha Subdivision	0.002	0	0	0.002	0.004
Fauquier Springs – Sulphur Springs	0.010	0	0		0.010
Marsh Run Mobile Home Park	0.088	0	0		0.088
Paris	0.005	0	0	0.007	0.012
Turnbull	0.005	0	0		0.005
Outside Service District Total	*0.154*	*0*	*0*	*0.012*	*0.166*

Data provided by VDH and FCWSA see Appendix 1, VDH Data page 30 FCWSA Data page 16

*Other refers to unmetered institutional uses by the Water Authority such as flushing and processing and fire flow in some cases

Self-Supplied Users Outside of Service Districts

Outside service districts there are two non-agricultural users of more than 300,000 gallons per month. They are identified by VADEQ as:

- Vulcan Materials/Sanders Quarry
- Remington Combustion Turbines (Dominion Generation)

Vulcan Materials uses 29.9 MG per year and 0.082 MG per day. Remington Combustion Turbines uses 5.1 MG per year and 0.014 MG per day. Kastle Green Golf Course does not report to VADEQ but uses an estimated 22.63 MG per year and 0.062 MG per day. The estimated average annual water usage of the four self-supplied users is 133.95 MG per year and 0.366 MG per day.

There are 20 known commercial/institutional self supplied users of less than 300,000 gallons per month, labeled by the VDH as:

- 1763 Inn
- Piedmont Child Care
- Hunters Head Tavern
- Sky Meadows State Park
- Middleburg Tennis Club
- Claude Thompson Elementary School
- Camp Moss Hollow
- Marriot Ranch
- Fresta Valley Christian School
- Airlie Foundation
- Ben and Mary's Steakhouse

- Walnut Grove Child Center
- Walnut Grove Child Center III
- Johnsons Motel
- St. Stephens Episcopal Church
- Poplar Springs Inn
- Southern Fauquier Child Development
- Kastle Greens Golf Club
- Mary Walter Elementary School
- M & P Pizza

Based on the 2009 E-911, there are 14,425 residential address points outside service districts. Based on the 2009 population estimate of 39,669 (E911 x 2.75 persons per household) multiplied by 100 gallons per person per day, outside service districts uses 3,966,875 gpd. Therefore, it can be assumed that 3,966,875 gpd are used by self-supplied users outside the service districts.

Agricultural Self-Supplied Systems Using More Than 300,000 Gallons Per Month

There is one self-supplied agricultural operation using more than 300,000 gallons per month reporting to VADEQ. Woodward Farm uses 76.32 MG per year and 0.029 MG per day. However, based on USDA National Agricultural Statistics Service (NASS) numbers, Fauquier County has a significant agricultural industry. While only one user may meet the VADEQ reporting requirements, taken as a whole, by sub-watershed, there is a best educated guess for water use. From a livestock standpoint, Fauquier County contains no large poultry production houses or parent company poultry contracts. In addition there are no contract swine facilities in Fauquier County. There are a number of horse facilities with more than five horses per location, as well as beef cattle, dairy farms, goats, and sheep.

Fauquier County is a forage based livestock production county from a cropland standpoint. Agricultural crops include hay, corn, and soybeans for livestock consumption. While there are individual small commercial producers for items such as eggs, Fauquier County does not produce substantial quantities for human use. The majority of farms will raise their crops for their own livestock consumption and will sell most surplus grain crops outside of the County, except for hay and corn silage. The hay is sold regionally with large percentage staying within Fauquier County. Any excess of the 4500 acres of corn silage will be sold within the County. However, the State of Virginia is considered corn deficit and more corn is imported than produced within the State. Grass is the most highly cultivated crop in Fauquier.

Currently, there are turf irrigators in the County but no large scale cropland irrigators. Virginia Beef, Kettle Wind, and Woodward Turf Farm all have turf farm irrigation on location. There is one tomato grower using irrigation and a few greenhouse irrigators. There may be other agricultural irrigators within the County who are either unknown and/or not reporting. According to the 2007 NASS there is 921 acres of irrigated land, however because the land being irrigated is not contiguous, the specific farms are assumed to be under the reporting thresholds.

Self- Supplied Systems Using Less than 300,000 Gallons Per Month

Fauquier County determined the most reliable process to capture possible groundwater usage is to examine the E-911 addresses in the rural areas outside of the defined Service Districts and towns. This determination was made after reviewing the historical local VDH well permitting files and coming to the conclusion that the records were deficient. Therefore, the county decided to use all E-911 addresses was a better reflection of possible water usage. In December of 2009, 14,425 E-911 addresses were recorded outside existing Services Districts and towns. In addition, in 2009 VDH listed 49 schools, businesses, restaurants, offices, and other uses located outside of services districts and towns for non-community public water supplies.

According to the National Agricultural Statistics Service, there were 1,344 farms in 2002 in Fauquier County. Since national agricultural reporting data is dependent on survey responses (e.g. NASS), as part of this planning process Fauquier County worked with the Virginia Cooperative Extension Office to use the local knowledge base of agricultural use. The data collected represents the best guess at the true nature of farming in Fauquier County. It should be understood that this data is fluid in nature.

Table 2.17- Estimated Livestock Water Use in Fauquier County

Dairy	**Estimated Number**	**Gpd**	**Gallons Per Year**
Cows (In Milk)	3,680	30	
Cows (Dry)	920	14	
Calves	1,500	12	
# of Farms Using Rinse/Cleaning Water	26	1,097	
Total Diary Water Use			**110,259,930**
Beef			
Cows	14,840	11	
Calves	14,000	5	
Stockers	5,000	7	
Total Beef Herd Water Use			**97,907,600**
Sheep			

Ewes	1,000	2	
Lambs	1,400	1	
Total Sheep Flock Water Use			**365,000**
Horses and Ponies	14,800	10	**148,000**

Information provided by Virginia Tech Cooperative Extension Warrenton Office

Fauquier County is a forage based livestock production county from a crop land standpoint. For example, crops may include hay, corn, and soybean for livestock consumption. While there are individual small commercial endeavourers for items like eggs, Fauquier County does not produce substantial quantities for human use. The majority of farms will raise their crops for their own livestock consumption and will sell most surplus grain crops outside the county, except for hay and corn silage. The hay is sold regionally with large percentage staying within the county. Any excess of the 4,500 acres of corn silage will be sold within the county. That being stated, the whole state of Virginia, including Fauquier County, is corn deficit by importing more than it produces. The number one crop in Fauquier is grass.

Table 2.18- Estimated Forage Crop Water Use in Fauquier County

	Total Acreage	Water Requirements	Total Gallons Per Year
Field Corn	10,700	25.9 inches/acre	7,525,181,600
Soybeans	4,800	24 inches/acre	3,128,140,800
Barley	1,100	17 inches/acre	507,779,800
Alfalfa Hay	2,600	5 inches/ton	1,341,407,600
Grass Hay	36,100	28 inches/acre	27,447,263,200
Pasture	110,000	28 inches/acre	83,634,320,000

Fauquier County is home to a number of vineyards and wineries. The County's Department of Agricultural Development estimates there are twenty-one vineyards and wineries throughout the county. Again, this number is fluid due to the changing nature of the business.

SECTION III: Existing Water Resources (9 VAC 25-780-90)

The County has recognized groundwater as a resource that demands careful management. As the population increases, a larger and larger percentage of the population a will become dependent on the finite groundwater resources within the County. Planning to effectively meet current and projected needs requires a clear understanding of the quantity, quality and distribution of the County's groundwater resources.

Environmental Conditions for Groundwater

Geology

A basic understanding of the geology of an area is vital to well-planned development. To a great degree, underlying rock types and geologic structures determine soil types, the quality, quantity and location of groundwater, basic slope stability and site suitability for wells, septic systems and structures.

Records searches did not provide any detailed study of Fauquier County as a whole, however information on the physiographic as well as the geologic provinces making up the County was referenced in order to provide the following general description of the geologic setting. The County is broken into two physiographic provinces: the Blue Ridge and the Piedmont, and three geologic provinces: the Blue Ridge, the Piedmont and the Triassic (Culpeper) Basin. The physiographic settings are based on differing landforms located in the area, while the geologic provinces are defined by the underlying geology. These two definitions do not always correspond to the same location, which is why the Blue Ridge geologic province spans the Blue Ridge physiographic province and the Piedmont physiographic province. The very northwestern portion of the County is located within the Blue Ridge physiographic province and is characterized by the highest topographic relief in the area. This province is underlain generally by the metamorphic rocks found in the Blue Ridge geologic province, comprised of a large eroded anticline, overturned to the west. Because of the erosion of material over time, there are no sharp peaks in this sequence but rather, domed mountain tops. Figure 3.1 (see Figures) illustrates the Regional Bedrock Geology of Fauquier while Figure 3.2 (below) provides a key to Fauquier County's commonly used formation names and rock types.

The Piedmont physiographic province is characterized by Blue Ridge, Triassic Basin, and Piedmont geology. The rocks making up the Triassic basin are ancient alluvial fan deposits mostly formed during the Lower Mesozoic, crosscut by igneous dikes. Moving southeast through the Piedmont physiographic province, the bedrock transitions to the dominant Piedmont geology, which is made up of Late Proterozoic and Paleozoic igneous and metamorphic rocks. The Piedmont geology is the most complex in the region and undergone extreme metamorphism and deformation, creating ideal conditions for valuable mineral deposits (Fichter 2000).

Typically, the hard rocks in the Blue Ridge would be considered the lowest water-yielding in the County. The Blue Ridge bedrock geology consists of many fractured, quartz-rich metamorphics which make up the aquifers in the Blue Ridge. Because the difficulty associated with predicting the locations of these subsurface fractures, groundwater can be difficult to access. Groundwater can also be "lost" in this

geology when new subsurface fractures form, and the water flows along them. The Blue Ridge is also characterized by steeper slopes which typically have thin soils and rapid stormwater runoff rates. Both the soils and the runoff rates deter the infiltration necessary to recharge the aquifer.

Because of the extensive deformation, as well as the lower topographic relief within the Piedmont, water yields are typically much higher than in the Blue Ridge. The hardness of the rocks as well as the extensive metamorphism within this province, over time, has created many highly fractured areas which are more reliable in terms of water supply. However, because of the wide variability of the underlying geology property owners cannot necessarily depend on high yields (VADEQ 2008).

Fauquier County's geologic resources have contributed to its economy throughout its history. In the nineteenth century gold was mined at eighteen sites in the Goldvein, Morrisville and Sumerduck areas. Of particular significance was the Franklin Mine which yielded over 1.2 million dollars worth of gold from 1825 until the Civil War. Copper and barium sulfate have been mined, as has rock for pavers and wall construction. In the early 1980s, aerial radiometric data revealed the possibility of economically mineable uranium deposits in the area. Concerns for the environmental impacts from the mining, milling and transportation of uranium ore eventually resulted in a general moratorium on uranium mining in Virginia.

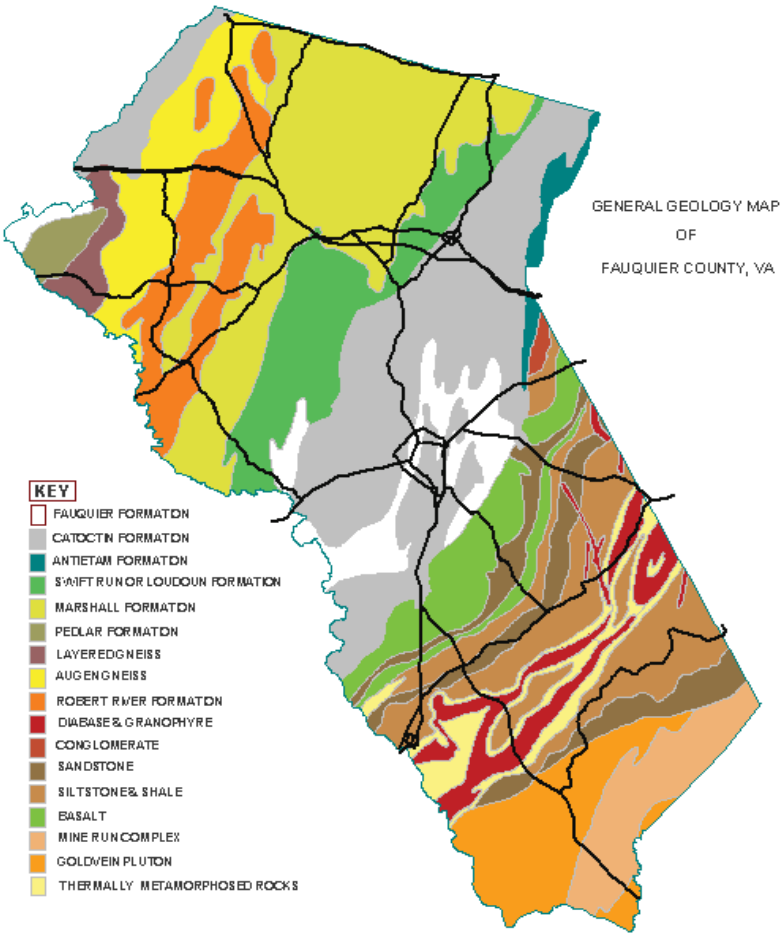


Figure 3.2. General Geology of Fauquier County

More recently, the commercial extraction of geologic resources in Fauquier County has been limited to the quarrying of crushed rock primarily for Northern Virginia's construction industry. Significant to the County's economy, quarrying operations present unique challenges to both resource management and land use planning. The site-specific nature of mining requires consideration of impacts to groundwater and surface water, adequacy of access, heavy truck traffic, and compatibility of adjacent uses and the reclamation of mined lands.

Hydrology

Fauquier County drains into two major watersheds: the Rappahannock River and the Potomac River. Within each of these are several sub-watersheds as illustrated on Figure 3.3 Watersheds of Fauquier County.

The USGS in partnership with VADEQ collects real-time water flow data using stationary stream gauging stations placed throughout the State. There are two continuously monitored stations within Fauquier County: Cedar Run near Catlett, Virginia and the Rappahannock River near Remington, Virginia (USGS 2011).

The Cedar Run station was established in order to measure discharge in cubic feet per second (CFS) in 1950. The summary data from this station is included as Appendix 2. Between 1968 and 2008 water quality analysis was done on samples collected from this station during 19 discrete sampling events. Because of the infrequency of the sampling events, it is difficult to extrapolate any long term trends from the data collected. An inventory of the water quality data is included in Appendix 2.

The Rappahannock River station near Remington was established in 1955. Discharge is currently the only parameter being measured at this station, although temperature and specific conductance information was collected prior to 1988. Water quality parameters were measured from 1955 through 1988. Because current data for this site is not available, extensive water quality analysis was not done on this data. However, based on suspended sediment analyses done on the water prior to 1994 it appeared that the concentrations were increasing over time.

The USGS reports one groundwater monitoring well located off of Old Tavern Road between SR 17 and Interstate 66. This well was completed in an area considered the Blue Ridge and Piedmont aquifer. The well was set at 574 feet above mean sea level (MSL) and the groundwater level has fluctuated between 10.73 feet bls and 24.87 feet bls. As would be expected based on infiltration rates, groundwater levels were at their highest in the late spring and lowest in the late summer/ early fall (USGS 2011). The monitoring records for this well are included in Appendix 2.

Fauquier County has contracted with consultants to provide hydrological studies in its planned Services Districts. The studies give a general picture of the hydrological resources within the County but were mainly undertaken in order to identify future production well sites to meet projected water needs. For most of the service districts, general information has been collected through file searches, general land surveys and measurements collected on existing wells, however for the New Baltimore Service District;

specific high-yield sites have been identified. The County plans to continue these investigations in order to identify future water supplies within each Service District.

Meteorological Conditions

The National Climate Data Center, a division of NOAA, has nine climate monitoring stations located in Fauquier County. Of these stations, several had limited data with collection dates ending more than 20 years ago. The stations that appeared to have the most consistent data were the Warrenton 3 SE Station with data collected from 1962 through the present and The Plains 2 NNE with data from 1954 through March 2009. In order to analyze the trends given the limited data, 1960 was chosen as a start date for the precipitation analysis. Charts included in Appendix 3 show the variation in precipitation for both stations beginning in 1960.

The Southeast Regional Climate Center of the University of North Carolina collects climate data from Virginia to Florida. The Center measures two stations in Fauquier County, one in Warrenton and one in The Plains. Data was collected at the station located in The Plains from April 1954 until March 2009. Data was collected at the Warrenton station between March 1897 and July 2010. Average temperatures and precipitation amounts for these stations are provided in the table below.

Table 3.1- Average Meteorological Conditions in Fauquier County

	Average Max Temperature (°F)	Average Min. Temperature (°F)	Average Precipitation (inches)
The Plains	66.0	43.2	42.24
Warrenton	65.1	44.2	40.7

Source: The Southeast Regional Climate Center

The data at each station shows higher amounts of precipitation occurring between May and September. As touched on in the hydrology section above, although there are higher amounts of rain in the summer, these typically come in heavy downpours characteristic of summers in the Mid-Atlantic region. Although these downpours may deliver a large amount of precipitation, due to the velocity of this type of storm most of it runs off into streams and rivers and does not infiltrate. The Southeast Climate Center data is included in Appendix 4.

According to the Virginia Drought Monitoring Task Force, normal precipitation is defined as the mean precipitation for a 30 year period of record. Precipitation greater than 85 percent of the mean and less than 115 percent of the mean is considered in the normal range. This range applies to the annual precipitation, but there have been several periods spanning months during the year where drought conditions have been observed. In, 2010, Fauquier County was one of 67 localities in Virginia which requested the Governor's assistance in obtaining federal disaster designation due to drought conditions

(Virginia Drought Monitoring Task Force 2010). For Fauquier County, an infiltration rate of below six inches per month is considered drought condition while 10 inches of infiltration is considered average.

Threatened and Endangered Species

The following is the list of state and federal threatened and endangers species for the planning area (Fauquier County, including the Towns of Remington and The Plains):

1. Birds
    a) *Bartramia longicauda* Upland Sandpiper
    b) *Haliaeeetus leucocephalus* Bald Eagle
    c) *Lanius ludovicianus* Loggerhead Shrike
2. Mussels
    a) *Alasmidonta heterodon* Dwarf Wedgemussel
    b) *Lasmigona subviridis* Green Floater

There are no federal listed Habitats of Concern for the planning area. Fauquier County falls within two physiographic regions, as identified by the Virginia Department of Natural Heritage (DNH): The Northern Blue Ridge and the Northern Piedmont regions. Within each of the regions, DRH has targeted natural communities for protection and stewardship. For the Northern Blue Ridge Region, the targeted communities are Eastern Hemlock Forests, Piedmont/Mountain Bottomland Forests, and Riverside Prairies. In the Northern Piedmont Region, the targeted communities are Eastern Hemlock Forests, Piedmont Basic Woodland, Riverside Prairie, and Piedmont Seepage Bog.

Fauquier County has chosen to limit water supplies to groundwater sources, so the impact of the State and Federal threatened and endangered species is minimal. Groundwater water supplies sources do not impact the freshwater mussels that inhabit surface water systems. The current water supply wells generally are located on sites of less than 0.25 acres so natural communities and bird species are minimally impacted. Also, current sites can be management to provide nesting and feeding habitat, especially for the Upland Sandpiper and Loggerhead Shrike, if populations of those species are identified in the area of the wells.

Anadromous, Trout, and Other Significant Fisheries

In 2004 the Embrey Dam on the Rappahannock River outside Fredericksburg was dismantled in an effort to allow for free movement of marine life to the upstream portions of the non-tidal parts of the river. The Rappahannock River is not stocked within the Fauquier County borders. The manmade impoundment at the Richard Thompson Wildlife Management Area is stocked annually with trout. While Fauquier County serves as the headwaters for the Rappahannock River as well as the Occoquan, it does not sustain cold water species (i.e. trout). However, it is sustainable for warm water fisheries of small and large mouth bass, perch, catfish and various other species.

Scenic River Segments

Fauquier County has two rivers which have been designated as "scenic rivers" through the Virginia Department of Conservation and Recreation Scenic Rivers program: the Rappahannock and Goose Creek. The segment of Goose Creek from the Fauquier/Loudoun County line to its confluence with the Potomac River has enjoyed this distinction since 1976. However, in 2007 through the efforts and dedication of Fauquier's Goose Creek Scenic River Task Force, that stretch of the creek within Fauquier County was officially classified as a State Scenic River. The entire length of the Rappahannock River was so designated in 1985. Both streams and their environs are subject to periodic monitoring to ensure the continued protection and preservation of those unique aspects critical to their classification.

Sites of Historic or Archaeological Significance

Historic and cultural resources are highly valued by both the citizens as well as the Fauquier County Government. Over the past 10 years Fauquier County has compiled an extensive inventory of its historic architectural resources via National Register Historic District documentation efforts. The County may well lead the State in total area and number of National Register and National Register eligible districts (Approximately 20 to 30 percent of the County's land area). The majority of the archeological work has been completed for road and public compliance projects. Because of the largely rural nature of much of the County, there is a high likelihood of extant archeological resources.

A map of the all of the properties within the County which are listed on the National Historic Register or are National Register Eligible Civil War Battlefields is included as Figure 3.4. The map also includes inventoried Virginia Department of Historic Resources sites and properties (referred to on the Figure as Historic Sites).

Soils

Soils must be thoroughly evaluated for use suitability as a primary consideration in the planning process for every proposed development site. Recognizing soils' limitations and correlating potential use to land suitability can prevent such problems as accelerated erosion and sedimentation, poorly functioning or failed septic systems, drainage and construction problems, and unproductive agricultural and forestal lands. Development in soils with severe limitations due to steep slopes, wetness, shallow depth to rock and shrink-swell and extreme acidic characteristics should be avoided. Of particular concern are shrink-swell and acid-sulfate soils. Shrink-swell soils are characterized by a high potential for expanding and contracting with changes in water content. Such soils require detailed geotechnical analyses through which the need for special foundation designs may be identified. There are discreet areas within Fauquier County where acid-sulfate soils have been mapped. Due to the acid content of these soils, which increases with exposure to the atmosphere, they may be difficult if not impossible to stabilize with vegetation. Although some of these limitations may be moderated by the use of various engineering practices, the recommended approach is to identify soil types and their characteristics early in the planning process and develop sites according to soil suitability. Areas characterized by soils with limiting attributes are best left as undeveloped open space.

Agriculture is a significant component of the County's economy and a focus of the County's preservation goals. Consideration must be given to the wise use of Fauquier County's prime agricultural soils. The County has idenitifed these soils using information within the Fauquier County Soil Survey. Generally

found in areas characterized by gently sloping terrain, these soils are often well drained with good drainfield potential. The threat to these lands by development is considerable. Once this resource is lost to development, it cannot be reclaimed.

The Interpretive Guide to the Soils of Fauquier County, Virginia, 5th Edition (http://www.fauquiercounty.gov/documents/commdev/pdf/CompleteSoilGuide-Part1.pdf) provides a comprehensive summary of the County's geology and geologic history, its soil types, their general characteristics and use potential. This Guide contains information that is more detailed to Fauquier County than information provided by the Natural Resources Conservation Service. Intended as a land-use planning tool, the guide includes the broad range of conditions and challenges associated with local geology and each soil unit. As is noted in the guide, intensive on-site evaluation is needed to determine suitability for specific uses.

Wetlands

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others 1979; U.S. Army Corps of Engineers 1987; National Research Council 1995; Tiner 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or non-hydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features

required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of non-hydric soils in the higher positions on the landform, and map units dominantly made up of non-hydric soils may have inclusions of hydric soils in the lower positions on the landform. In Fauquier County, based on the NRCS Fauquier County Soil Survey, 2007, 27 percent of the county (111,920 acres) is mapped as soil maps units that either are predominately hydric soils or have the potential for hydric soil inclusions (see Figure 3.5).

Riparian Buffers and Conservation Easements

While the County does not currently have a Riparian buffer program in place there are many conservation easement programs active within the County. These easements are obtained by the County, through the Purchase of Development Rights program, as well as several non-profit and for profit programs which are described below. Figure 3.6 shows a graphic of all the land under easement within the County as of 2009. Table 3.2 lists Acres of land under Conservation Easement within the County as of 2009.

The County Purchase of Development Rights (PDR) Program Allows landowners to enter into voluntary agreements to sell the development potential of qualifying property while retaining its ownership and use. The resulting conservation easements assure the availability of land for agricultural, forestal, recreational or open-space use, while protecting its natural and cultural resources, maintaining or enhancing air and/or water quality, and moderating the impacts of development. See Figure 3.6 below.

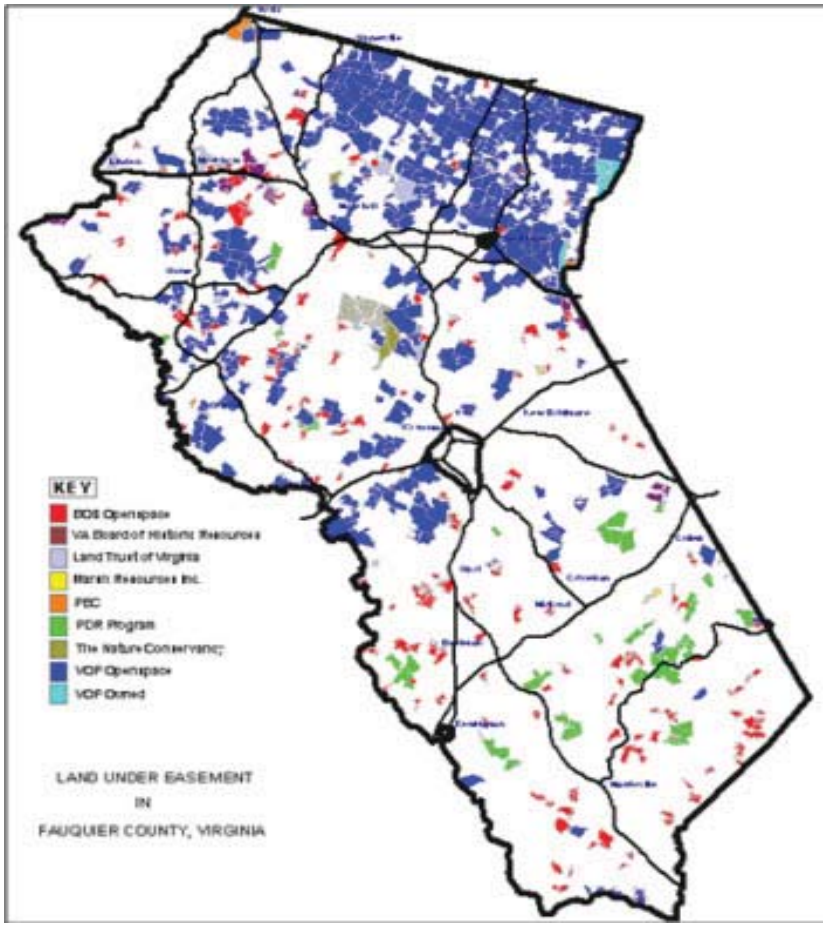


Figure 3.6- Land under easement within Fauquier County

The County Board of Supervisors Open Space Easement Certain types of land divisions in the rural district require that 85% of the original parcel be maintained in a single lot, with recordation of a Deed of Non-Common Open Space on the property. The non-common open space easement limits further development of the property, generally assuring that the property is preserved for agricultural use.

The Fauquier County Conservation Easement Incentive Overlay District Established to preserve agricultural and historic resources, open space, parks and future transportation corridors, this zoning ordinance tool allows residential density to be increased within certain Service Districts through the special exception process, in exchange for placing conservation easements on the resources to be saved.

Virginia Outdoors Foundation (VOF) Conservation Easement Program Promotes the preservation of open space through easements which protect a variety of resources, including watersheds, lands adjacent to public parks and game preserves, as well as cultural and historic landscapes.

Land Trust of Virginia Uses permanent conservation easements to help landowners voluntarily limit development while keeping the land open for forestry, farming, and recreation. In most cases, the property remains in private ownership.

Piedmont Environmental Council (PEC) Works with landowners to develop conservation easements that establish permanent limits on future development while protecting the conservation values of the land. Each easement is unique, with terms negotiated between the landowner and the council. Except for those relinquished rights recorded in the easement document, the landowner retains ownership, use and control of the land.

The Nature Conservancy Works with landowners to develop permanent conservation easements to protect the habitats needed to ensure the continuity of Earth's biodiversity.

Marsh Resources, Incorporated Works with landowners to negotiate and hold easements on properties having existing or potential wetland sites. The easements are held in perpetuity for use as mitigation sites for wetland impacts or sold as mitigation credits.

Table 3.2- Acres of Conservation Easement in Fauquier County

Acres of Conservation Easement in Fauquier County	
Virginia Outdoor Foundation Open Space	67,048
Non-Common Open Space (Fauquier County)	12,107
Purchase of Development Rights Program (Fauquier County)	5,959
The Nature Conservancy	1,952
County of Fauquier	1,949
Land Trust of Virginia	1,619
Virginia Outdoors Foundation Owned	1,147
Piedmont Environmental Council	531
Marsh Resources Inc.	223
Virginia Board of Historic Resources	7
Total	92,541

Source: Fauquier County GIS Department, 2009.

The John Marshall Soil and Water Conservation District (JMSCWD) is very active within the County's agricultural community. The JMSWCD encourages water protection though it's Best Management Practice Cost Share Program. Through this program, agricultural operators can apply to receive dedicated funds to fence livestock out of streams, create hardened water crossing and to install wells for livestock watering needs. According to the 2009 Annual Report, approximately 48,000 feet of livestock exclusion and stream protection fencing was installed on Fauquier County farms. This program works in concert with other federal and state programs including the Conservation Reserve Program (CRP), Environmental Quality Incentive Program, Wildlife Habitat Incentive Program and The Environmental Quality Incentive Program (EQIP) (JMSWCD 2010).

Forest Resources

In 2007, forests covered about 47% (over 200,000 acres) of Fauquier County. Significant in defining its character, forests provide environmental benefits as well as opportunities for economic development and outdoor recreation. Forests are significant groundwater recharge areas and, in the case of riparian forests, protect water quality by reducing storm water runoff, filtering pollutants, decreasing stream bank erosion and maintaining the biological, physical and chemical aspects of stream ecosystems. In addition, forests and tree stands moderate temperatures, reduce wind speeds, direct wind flow and provide wildlife habitat. This combination of values – aesthetic, economic, and environmental - requires protection to assure their continued benefit.

Decades of clear-cutting, burning, selective harvesting and re-growth have affected the local forested landscape. Few old growth stands remain. Numbers of native species have been reduced or lost through disease, habitat reduction or fragmentation and competition with invasive, non-native species. Although many forested areas have been lost or significantly altered as a result of land development, large areas of contiguous forest remain on mountainsides and along streams. Such areas play a vital role in preserving the abundance and diversity of plant and wildlife that distinguishes Fauquier County from its neighbors. As the demand for residential, commercial and industrial development sites continues to grow, forested lands will decline in extent and quality unless measures are taken to guarantee their continued vitality.

Retaining forested land on the steeper slopes characteristic of the western portion of the County is imperative to groundwater source preservation. As discussed earlier in this section, the increased runoff rates on steep slopes degrades the ability of water to infiltrate into the subgrade aquifers. As vegetation is removed from these slopes, the infiltration is decreased even further thereby reducing already low water supplies in the Blue Ridge physiographic province.

Land Use and Land Coverage

Fauquier County, because of its rural nature, has relatively low impervious cover. The main impervious areas are found within the Towns and Service Districts, and throughout the County on State maintained roads. As stated above, approximately 47 percent of the County remains forested and the remaining majority is in agricultural use.

According to the USEPA Landscape Atlas, Fauquier County is located in Cluster 3, "Watersheds in this group are scattered throughout the Ridge and Valley and Appalachian Plateau Physiographic Provinces. The principal adverse impacts for watersheds in this group are high scores for roads near streams, agriculture on steep slopes, sulfate deposition, and a low score for riparian forest cover, resulting in a relative cumulative impact score of 4" (USEPA 1997). This classification of Fauquier County points to the water quality issues associated with agriculture. While the vegetation characteristic of pasture can contribute to the recharge ability of an aquifer, the degraded riparian areas often associated with this use contribute to poor stream quality and high sediment runoff rates.

The impervious areas have been accounted for in defining the buffers areas around the Service Districts in the recharge calculations for build out populations.

Impaired Streams

The USEPA requires Virginia to produce Total Maximum Daily Load (TMDL) assessments for surface waters flowing into the Chesapeake Bay. As part of the state's stream monitoring program, Fauquier County is recognized by the VADEQ to fall within the Potomac and Rappahannock River Basins for the purpose of identifying impaired streams. VADEQ produces maps of each river basin with the designated impairments.

Currently, forty four segments of twenty-eight streams in Fauquier County have been identified as impaired by the VADEQ. The County is working with VADEQ to establish TMDLs and TMDL Implementation Plans for identified streams (see program descriptions below) to improve water quality. It should be noted that not all streams within the County have been tested for compliance with the

Commonwealth's water quality standards. A map of all the designated impaired stream segments within the County is attached as Figure 3.7.

Table 3.3- Impaired Stream Segments in Fauquier County

IMPAIRED STREAM SEGMENTS *As Identified by the Virginia Department of Environmental Quality*							
Stream	**Basin**		**Segment Length**	**Impairment**			
	Potomac	**Rappahannock**	**(miles)**	E-coli	Fecal Coliform	Benthic Impacts	Dissolved Oxygen
Barrows Run		x	4.85	x			
Bolling Branch	x		3.25	x			
Broad Run	x		1.50 1.12 2.17	x x x			
Browns Run		x	2.38		x		x
Carters Run		x	11.74 1.53	x x			
Cedar Run	x		1.81 28.34	x x			
Craig Run		x	3.62		x		
Cromwells Run	x		3.60		x		
Crooked Run	x		1.81		x		
Deep Run		x	2.77 4.80	 x	x		
Elk Run	x		2.17	x			
Gap Run	x		3.01		x		
Goose Creek	x		4.15 2.58	x x			

IMPAIRED STREAM SEGMENTS

As Identified by the Virginia Department of Environmental Quality

Stream	**Basin**		**Segment Length (miles)**	**Impairment**			
	Potomac	**Rappahannock**		E-coli	Fecal Coliform	Benthic Impacts	Dissolved Oxygen
Great Run		x	15.63	x			
Kettle Run	x		3.47	x			
Licking Run	x		6.58 6.74	x x			
Little River	x		6.3 6.11	x	 x		
Marsh Run		x	2.24 3.73 5.91	X x			
Panther Skin Cr.	x		5.01	x			
Rappahannock River		x	2.16 2.02 6.81 2.83	x x x x			
South Run	x		2.31			x	
South Run		x	3.91	x			
Sumerduck Run		x	3.55	x			
Thumb Run		x	6.87		x		
Thumb Run, E.		x	5.88		x		
Thumb Run, W.		x	10.08		x		
Tinpot Run		x	1.24		x		
Town Run	X		2.36	x			

IMPAIRED STREAM SEGMENTS *As Identified by the Virginia Department of Environmental Quality*							
Stream	**Basin**		**Segment Length (miles)**	**Impairment**			
	Potomac	**Rappahannock**		E-coli	Fecal Coliform	Benthic Impacts	Dissolved Oxygen
Trapp Branch	x		1.46	x			
Turkey Run	x		3.45	x			
Walnut Branch	x		1.67	x			
MILES	(100.97)	(104.55)	**TOTAL 205.52**				

Source: Virginia Department of Environmental Quality, 2008 Water Quality Assessment 305(b)/303(d) Integrated Report, October 2008: http://www.deq.state.va.us/

The County has participated in the following water quality improvement programs:

The Total Maximum Daily Load (TMDL) Program: Section 303(d) of the Clean Water Act and USEPA's Water Quality Planning and Management Regulation (40 CFR Part 130) require states to develop Total Maximum Daily Loads for water bodies identified as violating water quality standards. Implemented by the VADEQ, the TMDL program identifies those waters with excessive pollutant levels and determines the maximum amount that the water body can carry and still meet aquatic life and recreational standards. This is the Total Maximum Daily Load. TMDLs are pollutant-specific, so a water body with multiple pollutant violations will have multiple TMDLs. Currently, TMDLs in Fauquier County are focused on bacterial impairments.

Following the identification of a TMDL, an implementation plan (TMDL IP), detailing specific actions to be completed within a particular timeframe to restore the water body to swimmable/fishable conditions, is developed.

The Virginia Tributary Strategy Program: TMDLs are developed for impaired stream segments and address specific pollutants. The Virginia Tributary Strategy Program (VTSP) sets nutrient reduction goals and develops implementation strategies at the major river basin level (i.e. Rappahannock, Potomac). Tributary strategies are based on anticipated goals for pollutant load reductions for the entire Chesapeake Bay. Because the implementation of each tributary strategy is determined at the local level, including appropriate pollutant reduction strategies in local watershed management plans is a logical approach for addressing the regional problem.

Location of Point Source Discharges

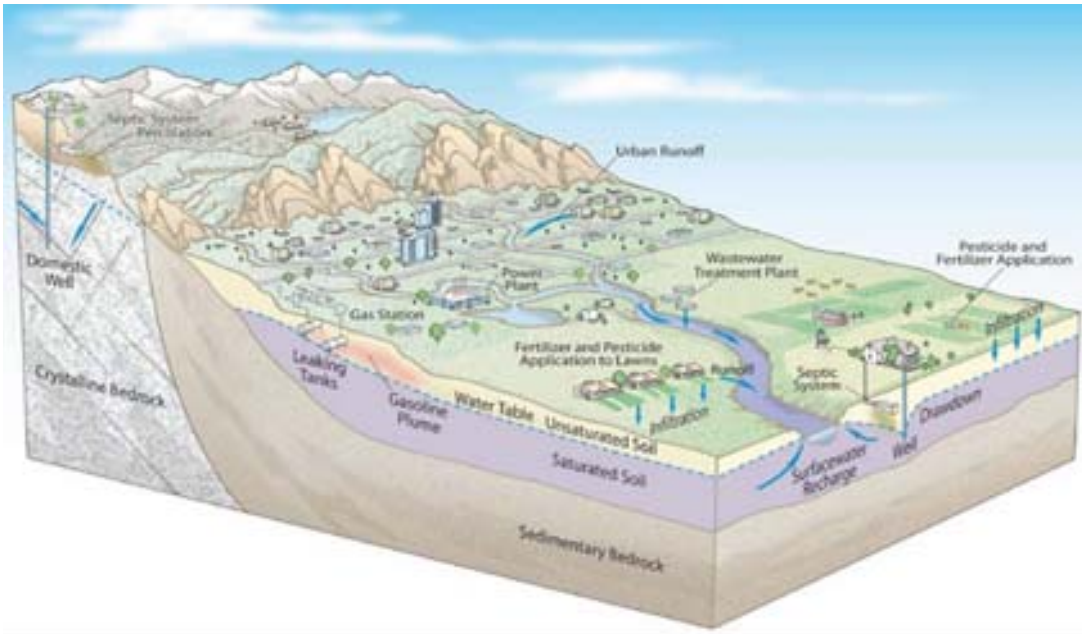
There are four sewage treatment plants (STPs) in the County: Marshall/The Plains, Warrenton, Vint Hill, and Remington. All except Vint Hill discharge either directly into the Rappahannock or into one of its tributaries. The Vint Hill STP discharges into the Occoquan Watershed. Each of these facilities has operated in the past, and Vint Hill is currently, under a Consent Order from the DEQ to correct effluent quality problems which were mostly the result of inflow/infiltration problems. Similar actions have been underway in neighboring jurisdictions contributing to the same watersheds.

With regard to the Rappahannock watershed, the County and the Water and Sanitation Authority (FCWSA)
are currently taking corrective action to comply with the Consent Orders in the form of expanded and corrected STPs. The DEQ intends to use the findings of the Water Quality Management Plan to evaluate future effluent contributions to the watershed. There has been some discussion at the DEQ of designating the Rappahannock as a "Tier 3" river. This classification would preclude new or expanded effluent discharges in designated sections of the river. This is significant due to the effect this may have in obtaining DEQ approval to expand the existing County and Town sewage treatment facilities and to construct any new regional facilities.

Potential Threats to the existing Water Quantity and Quality

Groundwater is stored in the pore spaces of soil and weathered rock and in fractures in underlying bedrock. With precipitation and water flowing in streams as its source, groundwater, in quantity and quality, reflects not only the characteristics of the physiographic region and earth material through which it moves, but also the nature of surface conditions. The distribution, amount and chemistry of groundwater is influenced by local and regional geology, surface run-off and infiltration, natural and man-made contaminants, and variations in precipitation patterns. Pollutants impacting surface water may easily percolate downward to contaminate groundwater. Similarly, groundwater may transport pollutants that can affect surface water quality in springs, ponds, streams and reservoirs. Potential sources of groundwater contamination include septic systems, underground storage tanks, landfills, animal waste lagoons, and run-off from areas treated with pesticides and fertilizers. Irresponsible use and careless disposal of industrial, automotive and household products can also contribute to contamination. Regardless of its source, groundwater pollution is difficult to detect and expensive to remediate. Figure 3.8 shows a typical cross section representing the potential impacts to groundwater.

Figure 3.8- Typical Cross-Section Representing Potential Impacts to Groundwater



Planning for continued groundwater dependence must include the identification and evaluation of regional and local aquifers, analyses of current and anticipated removal rates, and the degree to which replenishment is effective in meeting those demands. Although detailed hydrogeologic studies have been conducted in several areas within the County, e.g. New Baltimore and Bealeton, these provide only snapshots of conditions in specific locations. Continued reliance on groundwater as its primary water source requires that the County asses land use based on its potential impact to existing groundwater resources. Fauquier County uses the information gathered by the Virginia Department of Health's Source Water Assessment Program is identify relative risks to groundwater. This information includes open and closed cases of leaking underground storage tanks, potential conduits from surface to ground water, fuel storage, on-site sewage treatment plants, and landfills.

Listed below in Table 3.4 are common contaminants, both naturally occurring and human derived, existing in Fauquier County.

Table 3.4 -Common Groundwater Contaminants in Fauquier County- Naturally Occurring

CONTAMINANT	SOURCE	IMPACT
Arsenic	Manganese bearing rock- common in the Remington area	*Skin damage or problems with circulatory systems, carcinogenic
Radon	Uranium bearing rock- typically granite	Carcinogenic
Ph extremes	Rock and soils with	Corrosive to

CONTAMINANT	SOURCE	IMPACT
	very low or very high alkalinity. Acid sulfates in New Baltimore	infrastructure
Dissolved minerals (silica, metals, sulfur)	Underlying bedrock	Hard Water, strong odor

*Source-EPA Primary Drinking Water Standards 2011

Table 3.5 Common Groundwater Contaminants in Fauquier County-Linked to Human Activity

CONTAMINANT	SOURCE	IMPACT
Copper	Pipes used for plumbing	Potentially toxic at low levels (~10ppb)
Lead	Pipes used for plumbing	Several health affects including heart, nervous system, and brain damage
Nitrates	Animal waste, septic waste, fertilizer	Hypoxia (dead zones in waterways), "blue-baby syndrome"
E. Coli	Human waste, animal waste	Severe gastrointestinal illness
Sodium	Water softeners	Increased salinity in discharge water
Pesticides	Agricultural application, residential application, municipal application	Depletion of fisheries, native plants, varying illness in humans, increase in algal blooms
Volatile Organic Compounds	Underground storage tanks Petroleum derivatives	Neurotoxicity, aplastic anemia, leukemia, fishery depletion
Arsenic	Agricultural	Skin damage or problems with circulatory systems, carcinogenic
Chloride	Road salt, fertilizer, industrial waste, wastewater treatment effuluent	Toxic to aquatic species, damage to infrastructure

Section IV: Projected Water Demand (9-VAC 25-780-100)

In order for the projected water demand to be estimated for a given planning area, current population, water usage, and rate of growth must be established. This section seeks to anticipate future water demand needs through a series of methodologies. In order to set a population baseline, estimates from the Weldon Cooper Center and the 2000 U.S. Census persons per household for Fauquier County were used. The 2009 water usage data was provided by the community water systems and VADEQ reporting records, and presented herein and in the section addressing existing water use information.

Estimating Water Demand

Fauquier County estimates its water demand by using 100 gallons per day per person. This is based on the McGraw Hill Water Distribution Systems Handbook (Mays 2000) which estimates that a Virginian uses an average of 75 gallons of water per day. To accommodate the usage of agricultural, business, commercial, and other activities that fall outside of this population based estimate, Fauquier County chose to use a standard of 100 gallons per person per day. This estimate is used for projection purposes and has not been calculated from actual use data.

For design and reporting estimates, the Fauquier County Water and Sanitation Authority (FCWSA) uses 3.7 persons per household which results in approximately 74 – 78 gallons per day per person water use as determined by the 2009 average daily withdrawal for the Bealeton Regional and New Baltimore Regional systems (see Section II) For planning purposes, Fauquier County uses 2.75 persons per connection based on the 2000 U.S. Census data for Fauquier County. While the total population of a system may vary depending on FCWSA or Fauquier County person per household calculations, the water use per connection and the total water use are within range of each other. This is due to the fact that FCWSA's methodology uses a higher person per connection number with a lower gallon per person rate for design while the County uses a lower person per connection calculated with a gallons per person methodology. For planning purposes, this section matches the Fauquier County Comprehensive Plan projections.

The Weldon Cooper Center population estimates Fauquier County grew at an annual rate of 1.75% between the years of 1990-2009. Using the Weldon Cooper estimate, Fauquier County (including the Town of Warrenton) had a provisional population of 67,702 in 2009. A planning timeline of 30 years was chosen for this section based on the 1.75 percent growth rate. Applying this growth rate to the existing population numbers within the service districts, the County should reach build-out in 30 years. Table 4.1 below lists the population estimates and associated growth rates for the years 2001 through 2009.

Table 4.1 Weldon-Cooper Population Estimates

POPULATION ESTIMATES (2001-2009) Fauquier County, Virginia		
Month & Year	**Population**	**Growth Over Previous Year**
July 2009	67,702	1.35%
July 2008	66,801	1.31%
July 2007	65,936	2.61%

July 2006	64,261	0.89%
July 2005	63,696	2.90%
July 2004	61,900	3.34%
July 2003	59,900	2.04%
July 2002	58,700	2.26%
July 2001	57,400	4.10%
Sources: Weldon Cooper Center for Public Service, Demographics & Workforce Group "Final Population Estimates for 2001-2007, Virginia Cities and Counties" and "Population Estimates for Virginia, Localities, Planning Districts, & Metropolitan Areas: Final 2008 & Provisional 2009"		

The Weldon Cooper Data was used in order to identify a date by which the County will reach build-out, however in order to accurately project *water demand* on the Fauquier County groundwater resources, the population of the Town of Warrenton had to be removed from the population estimates. The estimates below do not include the 2009 population of the Town of Warrenton, which was estimated by Weldon Cooper at 10,131.

Estimated Population by Service Districts

The estimated growth rates by Service District are used to project the future water demand on the existing community water systems. The projected growth rate applied to the actual 2009 water usage will provide information related to future annual average, peak month, and disaggregated categories by Service Districts. For each Service District, the growth rate was calculated by assuming that all land shown on the land use maps in the County Comprehensive plan will be developed in accord with that plan by the year 2040. The individual growth rates were determined by comparing subtracting the 2009 population from the projected 2040 build out population and then determining at what annual percentage each respective service district would need to grow in order to Table 4.2 below lists the estimated population broken down by Service District or Town and their associated growth rates through 2040.

Table 4.2- Estimated Population by Service District/ Town

Year	Marshall (5.8% Growth Rate)	The Plains (.78% Growth Rate)	New Baltimore (1.91% Growth Rate)	Warrenton Service District only(1.75% Growth Rate)	Opal (1.07% Growth Rate)	Bealeton (3.16% Growth Rate)	Remington (1.66% Town and 4.8% Service District Growth Rate)	Midland (6.2% Growth Rate)	Calverton (2.1% Growth Rate)	Catlett (2.99% Growth Rate)
2009	1438	325	7645	5101	396	3355	2228*	171	215	344

2010	1521	328	7791	5190	400	3461	2319	182	220	354
2020	2674	354	9414	6173	445	4724	3496	331	270	476
2030	4699	383	11374	7343	495	6448	5338	605	333	639
2040	8257	414	13744	8734	551	8800	8228	1104	410	857

*For Warrenton, the 2009 baseline population was 5101 in the service district and 10,131 in the town. For Remington, the 2009 baseline population was 1733 for the service district and 495 for the town.

The estimated growth rates by Service District are used to project the future water demand on the existing community water systems. The projected growth rate applied to the actual 2009 water usage will provide information related to future annual average, peak month, and disaggregated categories by Service Districts.

Figure 4.1 shows a map of the County with each Service District and its respective population as of 2009. Figure 4.2 shows the current (2009) populations, and the populations for each service district at projected build-out as estimated by EGGI in the Fauquier County Water Resources Management Plan.

For each Service District, the population is estimated based on the number of dwelling units in 2009 multiplied by the 2000 U.S. Census 2.75 person per household and compounded against a unique annual growth rate as specified in the Fauquier County Comprehensive Plan for each Service District and Town. The projected rural population was derived from the 2010 E911 data from the County's GIS office multiplied by 2.75. An annual growth rate of 0.86% is applied to the rural population number to estimate the population in 2040. The 0.86% growth rate was determined by subtracting the unique compounded growth of each service district from the total County population growing at an annual 1.75% rate. For the current population to grow at this overall 1.75% rate, the rural population will have to increase at an annual rate of 0.86%. Table 4.3 below lists the Fauquier County population growth estimates through 2040 based on the above referenced Weldon Cooper data.

Table 4.3-Fauquier County Population Projections by Decade

Year	Service District & Towns Population (NOT including the Town of Warrenton)	Rural Population	Total Population
2009 (baseline)	*21,218*	*36,353*	*57,571**
2010	21,766	36,666	58,432
2020	28,357	39,944	68,301

2030	37,657	43,515	81,172
2040	51,099	47,405	98,504

*Weldon Cooper estimate of 67,702-10,131 (E-911 in Warrenton) = 57,571

Estimation of Water Demand by Decade

Using the estimates from Table 4.3 above and the Fauquier County policy of applying 100 gallons per person per day outlined earlier in this section, the estimated water demand by decade is anticipated to be:

Table 4.4- Fauquier County Water Demand Projections by Decade

Year	Service District Water Demand (NOT including the Town of Warrenton) (gpd)	Rural Water Demand (gpd)	Total Water Demand (gpd)
2010	2,176,600	3,666,600	5,843,200
2020	2,835,700	3,994,400	6,830,100
2030	3,765,700	4,351,500	8,117,200
2040	5,109,900	4,740,500	9,850,400

Projections by Community Water Systems

Estimating the total population served in each community system is a difficult due to the lack of existing data. The County and FCWSA develop production wells for drinking water supplies as the population grows. Each individual system has a capacity as outlined in the previous sections and in the data spreadsheets. Once demand exceeds the capacity of a system, the existing system is upgraded, or new systems are constructed to meet demand.

Fauquier County's Comprehensive Plan establishes a goal of realizing at least 75 percent of its growth in its Service Districts. Fauquier County is also currently in the process of developing and adopting Urban Development Areas. These areas will designate high density land that is designed to absorb 10-20 years of population growth. Since this work has not yet been completed, it is unclear at this time how the UDAs will influence population projections by community water supply, however both the Comprehensive Plan as well as the UDA plans will inform future updates of this Water Supply Plan.

Population projections were developed using several factors: the existing addresses listed in the E911 system, the assumption of 2040 as the ultimate build-out date, and by multiplying the 2000 U.S. Census

2.75 persons per household by the number of available dwelling units in each Service District. Then a compounding growth rate was calculated using the 2009 Service District population and the 2040 Service District population.

The estimated growth rates by Service District are used to project the future water demand on the existing community water systems. The projected growth rate applied to the actual 2009 water usage will provide information related to future annual average, peak month, and disaggregated categories by Service Districts.

The Warrenton Service District was handled differently than all of the other community water systems in estimating future needs. Because the Town of Warrenton currently supplies water to the residents of the Warrenton Service District, the existing population was not included in future projections. Instead, the current population number of residents outside of the Town of Warrenton but within the Warrenton Service District was used to estimate the future need within the Service District that will be supplied by the County. The data used in the chart to estimate the needs of the future residents was derived from the data in the Town of Warrenton Water Supply Plan. According to Weldon-Cooper estimates as well as E911 data from the County GIS system, the Town had 10,131 residents in 2009, and there were 5,101 residents located outside of the Town, but within the Service District. Using the 2009 average daily rate, it appears that each resident can account for 0.032 MG of water per day. Applying this rate to future users at an annual growth rate of 1.75% (the unique growth rate assigned to the Warrenton Service District) results in estimates for the 2010, 2020, 2030 and 2040 Average Annual Totals. Because these are estimated based on the Town of Warrenton's Water Supply Plan, the peak month data was not given.

Table 4.5-- Estimated Water Demand Annual Average and Peak Month for Community Water Systems

			2009						2010		2020		2030		2040	
Service District/ Town	**Community Water System**	**Annual Growth Rate**	**VDH Permitted Capacity (GPD)**	**Average Annual Total (MG)**	**Average Daily for Year (MGD)**	**Peak Month (MG)**	**Average Daily for Maximum Month (MGD)**	**Max. Month Multiplier**	**Average Annual Total(MG)**	**Peak Month (MG)**	**Average Annual Total (MG)**	**Peak Month (MG)**	**Average Annual Total (MG)**	**Peak Month**	**Average Annual Total (MG)**	**Peak Month (MG)**
Marshall Service District	Marshall	5.80%	124,000	39.94	0.11	3.64	0.12	1.08	42.26	3.9	74.26	6.81	130.5	11.98	229.33	21.04
The Town of The Plains	The Plains	0.78%	54,400	10.66	0.03	1.09	0.04	1.2	10.74	1.09	11.61	1.18	12.55	1.28	13.56	1.38
New Baltimore Service District	New Baltimore	1.91%	936,794	224.54	0.615	24.8	0.8	1.3	228.83	25.27	276.49	30.53	334.08	36.89	403.66	44.57
	Vint Hill	1.91%	294,400	42.6	0.117	4.62	0.149	1.28	43.41	4.72	52.46	5.7	63.38	6.89	76.58	8.33
	Lakeway	1.91%	4,800	0.82	0.002	0.093	0.003	1.38	0.84	0.1	1.01	0.12	1.22	0.14	1.47	0.17
	Baldwin Ridge	1.91%	4,800	0.82	0.003	0.093	0.003	1.38	0.84	0.1	1.01	0.12	1.22	0.14	1.47	0.17
	TOTAL for New Baltimore		1,240,794	268.78	0.737	29.606	0.955		273.92	30.19	330.97	36.47	399.9	44.06	483.18	53.24
Warrenton Service District	Warrenton (Service District ONLY)	1.75%		164.53	0.45	17.25			2.87		3.41		4.06		4.81	
Opal	Green Meadows	1.07%	40,400	8.13	0.022	0.744	0.024	1.09	8.23	0.75	9.77	0.89	11.63	1.06	13.83	1.27
Bealeton	Bealeton	3.16%	564,000	123.73	0.34	11.48	0.38	1.14	127.04	11.85	173.4	16.18	236.69	22.08	323.06	30.14
Remington	Town of Remington	1.66%	162,000	26.53	0.073	2.88	0.093	1.27	26.97	2.93	31.8	3.45	37.49	4.07	44.2	4.8
	The Meadows	4.80%	47,093	12.43	0.03	1.209	0.04	1.15	13.03	1.27	20.82	2.02	33.27	3.24	53.17	5.17
	TOTAL for Remington		209,093	39	0.103	4.089	0.133		40.00	4.20	52.62	5.47	70.76	7.31	97.37	9.97
Catlett	Catlett Subdivision	2.99%	62,000	6.08	0.017	0.775	0.025	1.47	6.26	0.8	8.41	1.07	11.29	1.44	15.15	1.93
Midland		6.20%		6.24	0.02				6.63		12.09		22.07		40.28	
Calverton		2.10%		7.85	0.02				8.01		9.87		12.15		14.95	
Outside Service Districts	Auburn Crossing*	0.86%	19,600	2.45	0.007	0.31	0.01	1.43	2.47	0.30	2.69	0.33	2.93	0.36	3.19	0.39
	Whitewood Forest*	0.86%	19,600	1.23	0.003	0.56	0.01	1.48	1.24	0.13	1.35	0.19	1.47	0.18	1.60	0.20
	Opal Regional*	0.86%	88,000	15.14	0.04	1.49	0.05	1.16	15.27	1.50	16.64	1.64	18.12	1.79	19.74	1.95
	Waterloo Estates	0.86%	64,000	5.71	0.016	0.78	0.03	1.56	5.76	0.76	6.27	0.83	6.83	0.91	7.44	0.99
	Drysdale	0.86%		1.47	0.004	0.12	0.00	1.00	1.48	0.13	1.62	0.14	1.76	0.15	1.91	0.16
	Bethel Academy	0.86%	54,000	6.43	0.018	0.62	0.02	1.11	6.48	0.58	7.07	0.64	7.70	0.69	8.38	0.75
	Botha	0.86%		1.19	0.003	0.02	0.01	2.00	1.20	0.02	1.31	0.02	1.42	0.02	1.55	0.03
	Fauquier Springs	0.86%	29,600	3.62	0.01	0.43	0.01	1.40	3.65	0.43	3.98	0.52	4.33	0.51	4.72	0.56
	Marsh Run Mobile Home Park	0.86%	120,000	31.97	0.088	3.32	0.11	1.22	32.24	3.34	35.13	3.64	38.27	3.97	41.69	4.32
	Paris Water System	0.86%	16,000	4.39	0.12	0.42	0.01	1.17	4.43	0.44	4.82	0.48	5.25	0.52	5.72	0.57
	Turnbull Estates	0.86%	15,000	2.00	0.005	0.19	0.01	1.2	2.02	0.21	2.20	0.22	2.39	0.24	2.61	0.27
TOTAL			*2,720,487*	*751*	*2.162*	*76.894*	*1.947*		*602.20*	*60.62*	*763.49*	*76.72*	*1002.07*	*98.55*	*1334.07*	*129.16*

Estimates of Water Demand of Each System by Category

Fauquier County estimates its projected water demand by applying 100 gallons per day per person. There is no category system in place to apply future projected water usage. Instead, since the County is exclusively dependant on groundwater regardless of land use, it has accepted McGraw Hill Water Distribution System Handbook's 75 gallons per person per day and increased it to 100 to accommodate the additional land uses. All future water use projections throughout this plan use this formula applied to population projections and rate of growth.

Table 4.6 Estimated Total Projections for Community Systems

Service District	2010 Average Annual Total (MG/Year)	2040 Average Annual Total (MG/Year)	EGGI Build Out Average Annual (365 days x 100g/day/ per person)	Build Out Range Average Annual Total (MG/Year)
Marshall	42.26	229.33	301.13	229.33 - 301.13
New Baltimore	273.92	483.19	501.88	483.19-501-88
Warrenton	2.87	4.83	230.86	4.83-230.86
Opal	8.23	13.83	20.08	13.83-20.08
Bealeton	127.04	323.06	321.20	321.20 - 323.06
Remington	40	97.37	271.01	97.37 - 271.01
Catlett	6.26	15.15	31.32	15.15 - 31.32
Midland	n/a	40.28	40.15	40.15 - 40.28
Calverton	n/a	14.95	14.56	14.56 - 14.95
Totals:**	508.71	1231.34	1,501.32	1231.34 - 1501.32

* EGGI projection totals are for Service District only. Town projections include both town and Service District served by Town. 697.15 represents build out at 2031 with no remaining growth. 804.095 represents continued row beyond current availability.

** Totals do not include Warrenton.

Self-Supplied more than 300,000 Gallons per Month Water Use Projections for non-Agricultural Properties

For these projections, it is assumed that Fauquier County will not experience any new self-supplied users of more than 300,000 gallons per month to be developed and/or implemented in the planning period related to the Water Supply Plan. Historically, there have been gravel quarries, golf courses, and power plants that meet these criteria. However, it is not anticipated that there will be new land use applications for these uses.

In 2008 Vulcan Sanders Quarry used their pit pump discharge (surface water) 29.9 million gallons annually with an annual average of 2.49 million gallons per month and 0.082 million gallons per day (81, 917 gpd). The peak month discharge was 6.7 million gallons per month. There was no data reported to DEQ in 2009.

The former Trinity Plastics industrial site outside Remington reports to DEQ that it has been operating under the 300,000 gallons per month threshold since 2006. However, prior to 2006 it reported 18,000 gallons per day and retains the ability to pump large amounts of groundwater from wells currently existing on site.

In 2009, the Remington Combustion Turbines (operated by Dominion Generation) reported to VADEQ withdrawing 5.1 million gallons annually with an annual average of 0.425 million gallons per month and 0.114 million gallons per day (13,972 gpd). The peak month withdrawal was 0.97 map.

Kastle Green Golf Course in the southern part of the County has not reported to VADEQ but industry standards for 18-hole golf courses estimate, as explained in the Existing Water Sources section (page), find a withdrawal rate of 22.6 MG annually with an annual average of 5 mgpm and 0.062 mgpd (62,000 gpd

Self-Supplied more than 300,000 gallons per month water use projections for agriculture

In 2009, Woodward Turf Farm reported to VADEQ 76.32 MG annually during a five month growing season from June to October. Averaged over twelve months, the average monthly withdrawal is 6.36 mgpm with a peak month use of 31.68 million gallons and an average of 0.20 million gallons per day (200,000 gpd). The water is permitted to be withdrawn from the Rappahannock River which flows through the site.

Self-Supplied less than 300,000 gallons per month water use projections for both non-agriculture and agriculture

The self-supplied users of less than 300,000 gallons per month for both non-agricultural and agricultural uses are assumed to fall into the rural land use for this planning process. This includes all existing and future community water systems located outside the service districts. Therefore, the projected water

demand for self-supplied users is found in the Estimated Water Demand by decade chart listed above under the Rural column.

For the town of Remington, an ordinance was passed requiring every "occupied" place to be connected to the town water system by October 1, 1955.

Cumulative Demand, Use Conflict or In-Stream Flow Information

This information is not available from the Commonwealth at the time of this planning exercise (2009). It is anticipated that future updates of this document will be able to address these potential issues.

Projected Needs and Projected Demand for the Planning Period

The water use demands in this planning area have been evaluated through 2040 for sustainability relative to available groundwater recharge potential to meet the projected demands. Domestic consumption, in-stream uses, and economic development have been accounted for through two methodologies. The first is the 100 gallons per person per day assumption applied to current and future populations. The second methodology uses the existing 2009 community water system actual water use as found above in the Estimated Water Demand Annual Average and Peak Month for Community Water Systems (Service Districts) (Table 4.5).

The projections based on the actual 2009 water use data reflect a gross per capita use with the existing balance of residential and commercial water use in the service districts. The EGGI build out water use estimates reflect changes in commercial and agricultural use as a result of economic development between 2009 and 2040. Both methodologies are presented in the Estimated Total Projections for Community Systems chart above.

The disaggregated uses for each specific Community Water system along with the projected future need are included below:

Table 4.7- Disaggregated CWS Uses with Future Use Projections

CWS	Growth Rate	Residential (MG per day)	Commercial (MG per day)	Other* (MG per day)	Unaccounted for Losses (MG per day)	Total for CWS (MG/day)				
						2009	2010	2020	2030	2040
Marshall	5.8%	0.056	0.019	0.001	0.018	0.094	0.102	0.231	0.521	1.179
Lakeway	1.91%	0.002				0.002	0.002	0.002	0.003	0.004
Baldwin Ridge	1.91%	0.002				0.002	0.002	0.002	0.003	0.004
New Baltimore Regional	1.91%	0.416	0.039	0.042	0.105	0.602	0.613	0.741	0.896	1.082
Vint Hill EDA	1.91%	0.057	0.012	0.0005	0.030	0.100	0.102	0.123	0.149	0.179
Town of Remington	1.66%	0.076**		N/A	0.00363	0.080	0.080	0.096	0.113	0.133
The Meadows	4.80%	0.057	0.012	0.0005	0.030	0.100	0.105	0.167	0.268	0.428
Blue Ridge Christian Home	3.16%	0.001	0.001	N/A	N/A	0.002	0.002	0.003	0.004	0.005
Bealeton Regional	3.16%	0.197	0.057	0.008	0.047	0.310	0.320	0.437	0.596	0.813
Catlett Subdivision	2.99%	0.009	0.0003	0.001	0.008	0.017	0.018	0.024	0.032	0.042
The Plains	0.78%	0.014	0.005	0.001	0.011	0.030	0.030	0.032	0.035	0.038
Green Meadows	1.07%	0.013	0	0	0.009	0.022	0.022	0.025	0.028	0.031
Auburn Crossing	0.86%	0.006	0	0	0.001	0.007	0.007	0.008	0.008	0.009
Whitewood Forest	0.86%	.002	0	0	0.001	0.003	0.003	0.003	0.004	0.004
Opal Regional	0.86%	0.021	0.008	0.0001	0.011	0.040	0.040	0.044	0.048	0.052
Waterloo Estates	0.86%	0.016	0	0		0.016	0.016	0.018	0.019	0.021
Drysdale	0.86%	0.004	0	0		0.004	0.004	0.004	0.005	0.005
Bethel Academy	0.86%	0.016	0	0	0.001	0.017	0.017	0.019	0.020	0.022
Botha Subdivision	0.86%	0.002	0	0	0.002	0.004	0.004	0.004	0.005	0.005
Fauquier Springs – Sulphur Springs	0.86%	0.010	0	0		0.010	0.010	0.011	0.012	0.013
Marsh Run Mobile Home Park	0.86%	0.088	0	0		0.088	0.089	0.097	0.105	0.114
Paris	0.86%	0.005	0	0	0.007	0.012	0.012	0.013	0.014	0.016
Turnbull	0.86%	0.005	0	0		0.005	0.005	0.005	0.006	0.007

SECTION V: Water Demand Management Actions (9 VAC 25-780-110,120)

The intent of the Water Demand Management Actions section is to address water conservation methods. Fauquier County, the Town of Remington, and the Fauquier County Water and Sanitation Authority which serves the Town of The Plains all answered the "Water Demand Management Information "worksheet. Topics covered include water use efficiency, long term water conservation, and water loss reduction techniques. Generally, all partners in this planning area employ conventional water demand management measures. These include:

- Enforcement of the Low Flow Plumbing Fixtures required in the Virginia Uniform Statewide Building Code (since approximately 1995).
- Compliance with EPA and VDH water system pressure standards.
- Publication of public education materials for water conservation.
- Assessing water demand charges and billing rate structures.
- Encouraging private water leak repairs.
- Reducing community water system loses through monthly water audits.
- Budgeting for the maintenance of community water systems.

More detailed information on water demand management techniques in each of the localities is given in the following worksheet.

V.A- Water Demand Management Information Worksheet

Local and Regional Water Supply Planning in Virginia
Water Demand Management Information, 9 VAC 25-780-110

Purpose: As part of a long-term strategy, a water plan shall address conservation as part of overall water demand management. Current conservation practices, techniques, and technologies shall be considered in projecting water demand in accordance with 9 VAC 25-780-100D.

This form will help you catalog information to describe water efficiency, water conservation, and water loss reduction practices used within your locality and/or planning area. Use the information from this form to develop the water demand management section of your local or regional water supply plan. *Note: If any of the practices are not applicable or no information is available, note as such in the comment boxes. Additionally, if any practices are not currently implemented but will be by your next water supply program submission deadline, note as such in the relevant comment boxes.*

Name: Fauquier County, Town Of Remington, Town of The Plains	**Date:** 10/19/10
Locality or Region: Fauquier County (FC), Remington (TOR), The Plains (TTP), Fauquier County Water & Sanitation Authority (WSA)	
Water Use Efficiency *Describe practices for more efficient use of water within the locality and/or planning area.*	
When did your locality adopt the Virginia Uniform Statewide Building Code sections that limit maximum flow of water closets, urinals, and appliances?	
Year: approximately 1995	Ordinance Number: N/I Is a copy of this ordinance included in your water supply plan? ☐ Yes ☒ No
Describe how your locality implements such building codes: All jurisdictions in Virginia follow the Virginia Uniform State Building Code. The region's building inspectors ensure compliance with the VUSBC (FC, TOR, TTP).	
Has your locality adopted ordinances and/or developed and implemented a master landscape plan for water-efficient landscaping?	
☐Yes ☒No	If Yes, reference the Ordinance Number: If Yes, is a copy of this ordinance or master landscape plan included in your water supply plan? ☐ Yes ☐ No
If Yes, briefly describe these low-water use landscaping practices: (FC, TOR, TTP)	
Do any Homeowner's Associations in your locality have policies regarding the use of low-water use landscaping?	
☐Yes ☐No	If Yes, are copies of such policies included in your water supply plan? ☐ Yes ☐ No
If Yes, briefly describe these low-water use landscaping practices: Do not track HOA policies (FC, TOR, TTP).	

Water Use Efficiency, continued

Describe practices for more efficient use of water within the locality and/or planning area.

Has your locality adopted ordinances declaring wasteful water use and/or running of water unlawful?

☐ Yes | If Yes, reference the Ordinance Number:
☒ No | If Yes, is a copy of this ordinance included in your water supply plan? ☐ Yes ☐ No

If Yes, briefly describe such anti-waste water use practices: (FC, TOR, TTP)

Does your locality implement practices to increase irrigation efficiency? Such practices may include, but are not limited to: not offering sewer credits during irrigation months, requiring irrigators to invest in irrigation meters, water recycling, etc.

☐ Yes ☒ No If Yes, please describe these irrigation efficiency practices: (FC, WSA, TOR, TTP)

Do water suppliers (municipal and/or private) in your locality implement water use efficiency measures (e.g. manage water system pressure to deliver water efficiently to all parts of the distribution system, etc.?

☒ Yes ☐ No If Yes, please describe these measures:

As required by EPA Standards, we maintain a minimum of 20 psi at all times. Our normal psi in the distribution system ranges from 60 psi to 140 psi. Answer is from WSA. No information available on private systems. (WSA and TTP) Town of Remington follows EPA and VDH standards. Normal pressure for system is 25 - 42 psi (TOR).

Water Use Efficiency, continued

Describe practices for more efficient use of water within the locality and/or planning area.

Are water suppliers in your locality WaterSense partners? Partners are listed on EPA's WaterSense website (http://www.epa.gov/watersense/partners/index.htm).

☐Yes ☒No If Yes, please list the partners and their practices under the WaterSense program: (FC, TOR, TTP and WSA)

Are landscape irrigation professionals in your locality WaterSense partners? Partners are listed on EPA's WaterSense website (http://www.epa.gov/watersense/partners/index.htm).

☐Yes ☒No If Yes, please list the partners and their practices under the WaterSense program: While some irrigation professionals may have clients in the region, they are not based from a business address in the region. (FC, TOR, TTP, and WSA)

Does your locality implement any efficient water use practices in addition to those mentioned above?

☐Yes ☒No If Yes, please describe these measures: (FC, TOR, TTP, and WSA)

Water Conservation

*Describe water conservation measures to reduce water use long-term within the locality and/or planning area. Such measures **do not** include short-term water supply emergency or shortage practices.*

Does your locality have ordinances in place that address water conservation practices through reduction of use?

☐Yes	If Yes, reference the Ordinance Number:
☒No	If Yes, is a copy of this ordinance included in your water supply plan? ☐ Yes ☐ No

If Yes, briefly describe these water conservation practices: (FC, TOR, TTP)

Have water suppliers in your locality adjusted their standard operating procedures to improve water conservation (e.g. reducing frequency of filter back wash)?

☐Yes ☒No If Yes, please describe these standard operating procedures: (WSA, TTP, and TOR)

Have water suppliers in your locality installed low-flow and/or no-flow fixtures (faucets, showers, urinals) in their facility that result in water savings to the locality through reduction of use?

☒Yes ☐No If Yes, please describe these measures: As applicable since VUSBC was modified. (FC, WSA, TOR, TTP)

Have water suppliers in your locality developed and implemented water conservation plans?

☒Yes ☐No If Yes, briefly describe the conservation plan measures: WSA sends out a water use restriction notice asking customers not to water lawns, wash cars or fill swimming pools. Penalties for violations have been adopted (WSA and TTP). Town of Remington asks customers to conserve water as much as possible. Town of Remington has never enforced restrictions. (TOR)

Water Conservation, continued

*Describe water conservation measures to reduce water use long-term within the locality and/or planning area. Such measures **do not** include short-term water supply emergency or shortage practices.*

Have low-flow and/or no-flow fixtures (faucets, showers, urinals) been installed in local government buildings/facilities to improve water savings to the locality through reduction of use?

☒Yes ☐No If Yes, please describe these fixture upgrades: As applicable since VUSBC was modified. (FC, TOR, TTP).

Has your locality used Clean Water State Revolving Funds (CWSRF) or Drinking Water State Revolving Funds (DWSRF) to upgrade/retrofit facility fixtures, build new facilities, or purchase efficient landscape irrigation equipment for publicly owned facilities (buildings, parks, golf courses, etc.)?

☐Yes ☒No If Yes, please describe such CWSRF or DWSRF water conservation projects: (FC, TOR, and TTP)

Does your locality have a dual pipe distribution system or parallel distribution network to distribute reclaimed water to residential, industrial, business, institutional, or irrigational (e.g. golf courses) users for non-potable water use purposes?

☒Yes ☐No If Yes, please describe such practices:

The Remington wastewater treatment plant distributes reclaimed water to an electricity generation plant (ODEC). (WSA)

Do water suppliers in your locality offer "yard taps" to customers, so customers can monitor and reduce outdoor water use?

☒Yes ☐No If Yes, please describe this program:

The subtraction meter installation program.WSA calculates a monthly sewer bill, based on the amount of water use each month as measured by the water meter. Customers using irrigation watering systems and/or other outdoor-only water use systems may wish to have this unsewered water usage deducted from the calculation of their monthly sewer bills by installing a subtraction meter. A subtraction meter is installed at the customer's expense and must be of a type and in a location defined by the WSA Utility Standards Manual. The subtraction meter tracks a customer's unsewered water usage separately from the water a customer puts into the sewage collection system. Should such a meter be installed and approved, WSA will deduct its monthly water usage from the calculation of the monthly sewer bill. (WSA)

Water Conservation, continued

Describe water conservation measures to reduce water use long-term within the locality and/or planning area. Such measures ***do not*** *include short-term water supply emergency or shortage practices.*

Has the locality developed and implemented public education programs that address water conservation through water use reduction?

☒Yes ☐No If Yes, please describe these public education practices:

Education leaflets are available to the public at WSA administration building. Information is also posted on the WSA website. For instance, the following information is provided to customers in the Marshall system. "When the Authority assumed ownership of the Marshall Water System, we recognized that the system would require substantial renovation, upgrading and an expansion of its water sources, to effectively serve its existing and future service demands. While the Authority has been continuing to improve the system's reliability and efficiency by repairing or replacing various portions of the system's distribution infrastructure and is currently renovating the system's Lane well as an interim measure for improving the system, there are no quick fixes to the system's major shortcomings regarding source and storage. Implementing the various phases of the Authority's renovation, upgrade and expansion plan still remains the best long-term solution for the system's problems. However, it will take time to put the plan in place. As a result of inadequate water sources and water storage within the Marshall Water System, the Authority has had to supplement the system's water supply by hauling water from The Plains and Warrenton to Marshall for several months now. During July 07, an additional 385,000 gallons of water was added to the Marshall Water System. To date, over 620,000 gallons of additional water have been required during August 07. In addition, the system has experienced service outages which potentially constitute a safety hazard to the system's customers. In response, the Virginia Department of Health has urged the Authority to curtail water usage in the system by imposing water restrictions on the system's customers. Because the Authority is now having to consistently supplement the Marshall Water System's water supply, based in part on the customers' increasing demands for service during a dry summer, the fact that we are now experiencing system outages of water, the fact that waterworks is currently exceeding its assigned design capacity and the fact that an interruption of the system's supply constitutes a potential safety issue to the system's customers, in order to minimize the need for supplementing the system's water supply, the Authority has placed a mandatory restriction on outside water usage for customers of the Marshall Water System until further notice. In addition, the Authority will reserve the right to discontinue the water service of those customers repeatedly violating the outside water use restriction. The following outside usages of the Authority's water supply by the customers of the Marshall Water System, such as but not limited to the following examples, are now prohibited; 1. Watering of lawns. New and refurbished lawns may be watered for a period not to exceed 30 days. (watering of plants, trees and shrubs is allowed) 2. Non-commercial washing of cars (i.e. residential) 3. Filling of leisure-use swimming pools. New or repaired swimming pools may be filled as needed to maintain the structural integrity of the pool, and indoor pools may be filled as necessary to ensure swimmer health and safety The following penalties for violations of these restrictions have been adopted: 1. First Offense – written warning. 2. Second Offense - $100 penalty 3. Additional Offenses - $250 penalty and possible disconnection of service These penalties will be assessed via the customers' monthly water bills and that actual violations must be witnessed by either members of the Authority staff or members of the Fauquier County Sheriff's Office. These restrictions and penalties shall remain in full force and effect unless sooner amended or rescinded by further resolution of the Authority Board. We apologize for any inconvenience these restrictions may produce and thank you in advance for your cooperation and assistance in helping to insure that each of you has an adequate supply of water for your basic service requirements." (WSA) The Localities have not developed and implemented a water conservation public education program. (FC, TOR, TTP)

Has your locality used Clean Water State Revolving Funds (CWSRF) or Drinking Water State Revolving Funds (DWSRF) to promote water conservation education through development and implementation of water conservation plans, public education programs, and/or ordinances or regulations to conserve water?

☐Yes ☒No If Yes, please describe such CWSRF or DWSRF water conservation education projects: (FC, TOR, TTP, and WSA)

Does your locality and/or local water suppliers offer incentive programs to customers to retrofit or replace older fixtures (faucets, shower heads, urinals) and appliances to reduce water use?

☐Yes ☒No If Yes, please describe such incentive programs: (FC, TOR, TTP, and WSA)

Water Conservation, continued

*Describe water conservation measures to reduce water use long-term within the locality and/or planning area. Such measures **do not** include short-term water supply emergency or shortage practices.*

Does your locality and/or local water suppliers offer funding incentive programs such as, but not limited to, rebates, tax breaks, and/or vouchers to encourage customers to reduce water use?

☐Yes ☒No If Yes, please describe such funding incentive programs: (FC, TOR, TTP, and WSA)

Does your locality implement a water conservation rate structure that encourages reduction of water use by increasing water rates with increasing water usage?

☒Yes ☐No If Yes, please describe such rate structures:

Water demand charges are flat fees which are added onto the monthly bill of any customer/account whose usage exceeds twice the adopted average water consumption for the usage category associated with the meter size. If the customer regularly waters their lawn, or have seasonally increased their water usage, they may have noticed an additional fee on their monthly water bill, called a Water Demand Charge. This is because the Authority sizes the provision of its services to customers by meter size, based on the customer's individual service requirements and each meter size has a corresponding monthly volume of service associated with its size. When a customer uses over 200% of the average usage for their meter size in any particular month, they are assessed a Water Demand Charge for the additional service they used during that month. Water Demand Charges are a flat monthly fee that is charged only for the month(s) in which the customer's usage exceeds twice the monthly average. Reducing their monthly water consumption below this level will eliminate the assessment of a Water Demand Charge to their account. (WSA) FC, TOR,TTP have not implemented a water conservation rate structure.

Does your locality implement any water conservation practices in addition to those mentioned above?

☐Yes ☒No If Yes, please describe these measures: (FC, TOR, TTP, and WSA)

Water Loss Reduction

Describe practices to address water loss in the maintenance of water systems and reduce unaccounted for water loss within the locality and/or planning area.

Do water systems in your locality have source and service connection meters?

☒Yes – Type: ☒Source ☒Service ☐No	If Yes, how frequently are the meters read? ☐Automatic (AMR) ☐Weekly ☒Monthly ☐Bimonthly ☐Quarterly ☒OtherDaily source

If Yes, please describe practices for meter inventory, testing, maintenance, and replacement:
WSA service meters are inventoried during monthly reads. Meters are tested and/or replaced when unusual readings are observed. TOR and WSA source meters are repaired or replaced when malfunctions occur.

Does your locality have an ordinance or policy in place that requires water users to repair leaking fixtures, appliances, or plumbing?

☐Yes ☒No	If Yes, reference the Ordinance Number: If Yes, is a copy of this ordinance included in your water supply plan? ☐ Yes ☐ No

If Yes, briefly describe these water loss reduction practices: While none of the localities have an ordinance or ploicy in place,, the Town of Remington does maintain the right to cut off water service to a user with a known leak who refuses to repaired it.

Do local water suppliers implement operating strategies for leak detection and regularly scheduled water audits to reduce water loss?

☒Yes ☐No If Yes, please describe the frequency and specifics of such strategies:
WSA generate a water loss report monthly. When losses are outside the normal range they look for whatever may be responsible for the loss. The Town fo Remington calcuates water loss percentage monthly. Leaks are located as soon as possible and repaired.

Water Loss Reduction, continued

Describe practices to address water loss in the maintenance of water systems and reduce unaccounted for water loss within the locality and/or planning area.

Has your locality used Clean Water State Revolving Funds (CWSRF) or Drinking Water State Revolving Funds (DWSRF) to install water meters in its distribution system and/or develop and implement water audit and leak detection practices?

☐Yes ☒No If Yes, please describe such CWSRF or DWSRF water loss reduction projects: (FC, TOR, TTP, and WSA)

Does your locality have practices or policies in place to track unauthorized connections (e.g. tapping of fire hydrants)?

☒Yes ☐No If Yes, please describe the practices, policies and enforcement of unauthorized connections:
All assigned personnel constantly visually observe for unauthorized connections. (WSA and TOR)

Do local water suppliers implement operating strategies for the repair of water mains, service connections, fire hydrants, valves, etc., to reduce water loss?

☒Yes ☐No If Yes, please describe such repair strategies:
WSA and Town of Remington maintenance departments repair, replace and correct these malfunctions immediately.

Water Loss Reduction, continued

Describe practices to address water loss in the maintenance of water systems and reduce unaccounted for water loss within the locality and/or planning area.

Do local capital improvement plans (CIP) or master plans include dedicated funds to upgrade existing facility infrastructure, water mains, lines, fire hydrants, valves, etc., to reduce water loss?

☒Yes ☐No If Yes, please describe such CIP or master plan projects:

Specific plans are noted in WSA approved budget along with a fund for emergency work. In TOR, all water revenue is segregated as separate water funds. Current rates include planning for future repairs and maintenance. prior year surplus is maintained in water deposit accounts and yearly budget provides for utilization of these funds.

Has the locality developed and implemented educational programs to reduce customer-side water loss (e.g. offer leak detection tablets, conduct customer leak detection audits, etc.)?

☒Yes ☐No If Yes, please describe water loss reduction educational programs:

Whenever customers call in a suspected water loss, WSA conducts a leak detection audit. WSA and the Town of Remington also explains and demonstrates to customers how to determine if they have a leak.

Does your locality implement any water loss reduction practices in addition to those mentioned above?

☐Yes ☒No If Yes, please describe such practices: (FC, TOR, TTP)

V.B- Drought Response & Contingency Plan (9 VAC 25-780-120)

Introduction

The purpose of the Fauquier County Drought Management Plan is to provide a structure by which water resources within the Planning Area may be managed within the confines of the annual cycles of precipitation. The residents of the County, excluding Warrenton, are solely dependent on groundwater as the drinking water supply. Additionally, the County contains a large agricultural community that relies on groundwater to support livestock and crops. According to the Southeast Regional Climate Center at UNC which has a monitoring station located near Warrenton, Fauquier County historically receives on average 40.66 inches of precipitation annually.

Drought has been a well-documented recurring problem within the Commonwealth. Between 1999 and 2002 Virginia experienced an extended period of below average rainfall. This time period culminated in the extreme wildfire warnings issued late in the summer of 2002. A drought emergency order was declared by the Governor's Office in August 2002. This was one of the events that lead to the Virginia Water Supply Initiative issued by the Governor's office in December 2002 which required the Commonwealth's Drought Coordinator to develop a formal Drought Assessment and Response Plan.

In order to efficiently disseminate the responsibilities of drought oversight, VADEQ incorporated the Drought Response and Contingency Plan requirements into the Water Supply Planning regulations (specifically VAC 250780-120).

The Drought Response and Contingency Plan will be developed to help guide the communities of Fauquier County, The Plains and Remington through times of water shortages and droughts. It is proposed that a stakeholders committee, or Task Force, be convened to identify the unique characteristics of the planning area; develop the appropriate response structure and process; and recommend a draft ordinance to the elected officials of each jurisdiction for approval.

Establishment of Drought Task Force

The first step in creating the Drought Response and Contingency Plan for the region is to create a Drought Task Force comprised of appointed members from each jurisdiction represented in this regional plan. In addition, the Task Force should include representatives from the Town of Warrenton and the FCWSA.

Members of the Task Force should also consist of representatives from pertinent agencies as well as the agricultural community. Because of the varying land uses that exists within the planning area (residential, agricultural, forest) it is important that all these sectors be represented on the Task Force. The following is a list of proposed representative organizations to serve on the Task Force:

- Fauquier County Community Development
- FCWSA
- The Plains

- Remington
- Warrenton
- John Marshall Soil and Water Conservation District
- Agricultural Extension
- Farm Bureau
- Emergency Services
- BOS member
- Forestry

The Task Force will use the Drought Indicators to make recommendations to the Fauquier County BOS regarding any potential drought conditions and what type of mechanisms need to be put into place in order to protect the water supply.

Response Stages

Using the indicators outlined by the Commonwealth, the Task Force will provide recommendations on to the Board of Supervisors when two or more of the indicators show signs of potential for drought. Because there are several different entities in charge of water infrastructure within the County, the drought indicators may signal drought conditions in one portion of the planning area but not over the entire County. If this is the case, targeted stage increases may be recommended by the Task Force.

The following response stages will be used in the Task Force recommendations to the Town Councils and the Board of Supervisors:

- Drought Watch

A Drought Watch means increased awareness with up to 5% conservation. The idea is to inform citizens of the County served by community water systems that there is the potential for drought conditions to deepen and ask that water conservation techniques be utilized.

- Drought Warning

A Drought Warning requests the population to employ ***voluntary*** water conservation techniques with a goal of reducing water use 5-10%. This stage indicates that a significant drought event is imminent.

- Drought Emergency

A Drought Emergency means ***mandatory*** water conservation restrictions with the goal of reducing water usage by 10-15%. At this stage the county is experiencing the height of a significant drought event.

During a Drought Emergency the entire planning area will follow the Mandatory Non-Essential Water Use restrictions as outlined in the Virginia Drought Assessment and Response Plan.

Current Practices- FCWSA

The FCWSA currently uses the following techniques in order to plan for water production shortages:

- Monitor and review well drawdown data, watch for any trends that suggest diminished production
- If reduced water supplies are observed:
    - A reduced flushing schedule is implemented.
    - Water Use restrictions are implemented.
- In extreme cases, water can be trucked between FCWSA systems as needed.

The FCWSA took over operation of the Marshall Water System from the now defunct Marshall Water Works in 2005. Because of the degraded infrastructure in the Marshall area as well as low supply, the FCWSA imposed water use restrictions on the Marshall service area beginning in 2007. These restrictions include limitations on outdoor water use such as filling swimming pools, watering lawns, and non-commercial car washing. For the first offense a written warning is issued, on the second offense a 100 dollar fine is issued to the customer. Additional offenses can carry a 250 dollar fine as well as the possibility for water service termination.

Current Practices- The Town of Remington

Because the water system for the Town of Remington is operated independent of FCWSA, they currently use the following procedure to monitor for drought conditions:

Normal Water Condition- Observe wise water use.

Triggers:

- Wells are recharging to normal levels with stable pumping levels.
- Water supply is adequate to meet all demands (demand <75 percent of capacity).
- NOAA drought index neutral to DO (abnormally dry).
- All Town facilities are operating within normal parameters.

Drought Watch- Voluntary Water Conservation. In case of Drought Watch, the Town announces voluntary water conservation recommendations.

Triggers:

- Well recharge times take longer than in Normal condition, well pumping level below normal/ stable levels.
- NOAA drought index DI (Drought- Moderate).
- Current demand requires the use of any Town water supplies above the safe yield capacity for more than two consecutive days.

Drought Warning- Voluntary Conservation plus some mandatory restrictions.

Triggers:

- Wells are not recharging to normal levels during their off times.
- Pumping levels within 150 feet of well pump location.
- Tank is out of service for maintenance.

- NOAA Drought Index of D2 (severe drought).
- Current demand between 85 to 95 percent of system safe yield on average for a week.
- Current demand requires the use of any Town water supplies above the safe yield capacity for more than two consecutive days.

Drought Emergency- Mandatory water restrictions.

Triggers:

- One or more wells not functioning properly or with extreme drawdown, within 100 feet of the well pump.
- Storage drawn below 65 percent of total capacity.
- Major waterline break.
- Current demand at or above 95 percent of system safe yield on average for a week.
- NOAA drought index D3, extreme drought, or greater.

Characteristics of Water Resource

In order to develop a proper Drought Response and Contingency Plan, the unique characteristics of the water resources within the planning area must be considered. Fauquier County has chosen to rely solely upon groundwater as the source of drinking water for its citizens. This choice necessitates careful observation of water use patterns through groundwater monitoring in strategic locations throughout the planning area. In addition, the meteorology and hydrology of the planning area needs to be reviewed in a historic, seasonal, and storm event context. Not only because of the varied geologic conditions, but also the large amount of land within the County, the water source and usage will need to be examined as water demand varies throughout the year and precipitation may not be evenly distributed.

Fauquier County is underlain primarily by fractured bedrock. Groundwater found within fractured bedrock is notoriously unpredictable and is susceptible to not only contamination but also to loss through fractures. Considering the characteristics that comprise this type of aquifer, it is extremely important that water being accessed for drinking be closely monitored. If there is any indication that supply has been compromised the County must have strategies in place to preserve the resource.

Indicators and Triggers for Drought Stages

The Virginia Drought Assessment and Response Plan (VDARP) includes drought evaluation regions throughout the state and establishes drought stages based on a number of variables. Local jurisdictions are required to adopt a similar model for compliance with the Water Supply Planning regulation and to be better prepared for a drought event. Fauquier County, The Town of Remington, and the Town of The Plains fall into the Northern Virginia Drought Evaluation Region.

A Drought Response and Contingency Plan must establish indicators for observation for potential drought conditions. The following indicators will be used by the Task Force to monitor drought stages:

- USGS Flow Duration Curves
- NOAA Drought Monitor

- NOAA Palmer Index
- Groundwater level monitoring by FCWSA and the Town of Remington
- Surface water levels in the reservoirs accessed by the Town of Warrenton. The Northern Virginia Drought Evaluation Region monitors the water levels in Lake Manassas and in the Occoquan Reservoir in order to determine whether there is a drought. This monitoring data will be reviewed in conjunction with the Fauquier County reservoir water levels.
- Region 4 Recommendations made by the Governor's Office
- Local Recommendation which would allow jurisdictions to act independently on a localized area of impact. Examples of local triggers might be slow recovery of FCWSA wells, the level of the Warrenton reservoir and the department of Forestry danger levels. If the County opts to undertake a groundwater monitoring program, the results of all groundwater monitoring will also be used by the Task Force in order to assess water quantity.

Ongoing Evaluation and Assessment

The Drought Task Force will be responsible for the on-going monitoring of drought conditions. On-going evaluation and assessment of water sources is critical in a Drought Response and Contingency Plan. The Task Force will use the indicators listed above as well as the indicators prescribed by the Commonwealth, which include:

- Precipitation Deficits for the Northern Virginia Drought Evaluation Regioin- precipitation rates will be monitored on an on-going basis by the Drought Task Force. Current precipitation amounts can be obtained from NOAA while the long term average rates can be accessed by using information from the Southeast Regional Climate Center. Current monthly rainfall amounts will be compared with historical data at the beginning of each Water Year, October 1st. According to the Office of the State Climatologist, precipitation that falls between the months of October and March of each year serves to recharge aquifers and increase water supplies. In the months of April through September, much of the precipitation that falls either evaporates or is used by the growing vegetation. Table 5.1, below, indicates the precipitation amounts as the percent of normal during each period of time during the water year:

  Table 5.1- Precipitation Deficits

Months Analyzed	Normal (% of Normal Precipitation)	Watch (% of Normal Precipitation)	Warning (% of Normal Precipitation)	Emergency (% of Normal Precipitation)
October-December	>75.0	<75.0	<65.0	<55.0
October-January	>80.0	<80.0	<70.0	<60.0
October-February	>80.0	<80.0	<70.0	<60.0
October-March	>80.0	<80.0	<70.0	<60.0

October-April	>81.5	<81.5	<71.5	<61.5
October-May	>82.5	<82.5	<72.5	<62.5
October-June	>83.5	<83.5	<73.5	<63.5
October-July	>85.0	<85.0	<75.0	<65.0
October-August	>85.0	<85.0	<75.0	<65.0
October-September (and the previous 12 months)	>85.0	<85.0	<75.0	<65.0

- Streamflows-USGS streamflow gages located in discrete locations (Remington, Cedar Run, Goose Creek) throughout the County will be identified in order to monitor the water level within the stream and compare it with historic data available through the USGS. The streamflow data will be analyzed according to Table 5.2 below

  Table 5.2- Streamflow Percentiles Compared with Normal Flow

Drought Condition	Daily Streamflow Percentile
Normal	>25th
Watch	>10th and <25th
Warning	>5th and <10th
Emergency	<5th

- Groundwater levels- groundwater levels in wells throughout the Planning Area will be analyzed in accordance with a County Groundwater Monitoring Plan if such a plan is adopted by the BOS. A plan outline has been prepared for the County, however as of the date of this report, no such plan exists.

Implementation & Enforcement

Once the Water Supply Plan has been adopted by all the Town of The Plains, the Town of Remington and Fauquier County, the task force will develop a Drought Ordinance for adoption by all of the above mentioned governing bodies.

Both FCWSA and the Town of Remington currently enforce water restrictions by notifying users of a shortage and that non-compliance will result in fines and or termination of service. The procedures used by the FCWSA and the Town will be codified once the Drought Ordinance is adopted. Because the Town of The Plains is served by FCWSA, The Plains will follow FCWSA restriction procedures. In addition to the existing restriction practices, the Task Force will work with the local governments to ensure that self-supplied users are notified during mandatory restrictions in an effort to conserve all of the water resources within the Planning Area.

Because Fauquier County does not currently have a drought plan in place, several ordinances will need to be developed and adopted once the Task Force has become active. Currently, Chapter 19 of the Fauquier County Code contains regulations having to do with water, however to date there is no Drought language in the County Code. The following items will be included drought-related regulation:

- Restriction on which Water Uses
- Surcharges – summer usage
- Local Ordinances – water saving, restrictions on non-essential use of groundwater, etc…
- Procedures
- Penalties – surcharges, etc…
- Drought Stage Termination
- Public Notice
- Exceptions

Procedures for Implementation

All ordinances that are adopted as a result of the Drought Contingency Plan will go through the Fauquier County Planning Commission, the Fauquier County BOS, the Remington Town Council and the Town Council for the Town of The Plains.

Public Outreach and Education

Once the Drought Contingency Plan has been adopted, a public outreach program should be undertaken by the Task Force. This program should include the following:

- A web-based clearinghouse of drought related information.
- Signs posted in public places regarding voluntary conservation measures.
- Mailings and public outreach meeting.

SECTION VI: Statement of Needs and Alternatives (9VAC 25-780-130)

The purpose of the Statement of Needs and Alternatives is to examine the adequacy of the existing water sources to meet the projected demand. This planning document evaluated all the 2009 water sources, water use, water resources, and projected demand for Fauquier County, the Town of Remington, and the Town of The Plains with the understanding that groundwater will remain the exclusive source for drinking water supplies. Therefore, the future needs discussed below speak to the parameters of these assumptions.

In addition, there are a number of non-traditional water supply and water demand management alternatives to increase drinking water supplies that are not compatible with this planning area. Examples include desalinization and stream intakes due to geography, as well as the creation of new reservoirs due to prevailing policy decisions. Therefore, these alternatives are not discussed in this section as a means to provide drinking water supplies.

Adequacy of Existing Sources

It has been determined through several years of analysis that with careful planning and strategic actions there will be adequate groundwater supplies to support projected drinking water needs through the year 2040. Because groundwater availability is dependent on site specific geologic conditions, adequate planning and protection of drinking water supplies is essential. The Statement of Needs outlines a work plan for the planning area that accomplishes these goals.

Statement of Needs

Based on the planning assumption of 100 gallons per day per person water use, the average annual water use for the entire planning area (including service districts, towns, rural, community water systems, and all self-supplied users) is estimated at 9,857,600 gallons per day for an estimated population of 98,576 in the year 2040. As stated previously in this document, the 100 gallons per day per person water use allocation takes into account the water use of business, industrial, agriculture, and other categories of use.

Of the 9,857,600 gallons per day of water use required in 2040, an estimated 510,900 gallons per day is used by the Service Districts and Towns

Ensuring this level of drinking water supplies will require substantial investments over time. As stated in the Existing Water Sources section of this document, Fauquier County has worked with Emery & Garrett Groundwater, Inc. to develop the recommended strategies for water resources. The following strategies and figures were produced by Emery and Garret for the Water Resources Management Plan for the County. Figure 7.1 illustrates the required recharge in each service district at build out to be

unsustainable. However, Figure 7.2 demonstrates that when a 1-mile radius is applied around each service district at build out, the ground water recharge does become sustainable with the projected demand. The following recommendations provide the critical path to ensuring these water use needs are met.

- Groundwater Resources Objective GW1 (Planning): Plan for the future, especially in Sensitive Groundwater Use Areas. Identify critical areas for groundwater investigation, groundwater monitoring, and groundwater protection based upon projected growth and water use, contaminant threats to groundwater quality, and the County's variable geologic and hydrogeologic settings

- Groundwater Resources Objective GW2 (Exploration): Ensure that groundwater supplies are identified and developed based on the best available science and exploration methodologies.

Table 6.1 Estimated Threat of Contamination to Groundwater

Sensitive Groundwater Development Areas	% of Available Groundwater Recharge needed to meet Anticipated Groundwater Uses (2005)	% of Available Groundwater Recharge needed to meet Anticipated Groundwater Uses at Full Build-out	Presence of Potential Contaminant Threats within Groundwater Development Area
Marshall	26%	114%	Moderate to High
Bealeton	27%	86%	Moderate
New Baltimore	22%	45%	Moderate
Warrenton	36%	55%	Moderate
Remington	16%	74%	Low
Opal Service	10%	15%	High

- Groundwater Resources Objective GW3 (Management/Protection): Develop management strategies for protecting existing groundwater supplies. Such measures can include acquisition of property or easements within critical wellhead protection areas, developing redundancy in the groundwater supply systems (such as multiple wells or supply interconnections), and the development of contingency plans for maintaining secure sources of water when contaminant spills or other emergencies threaten the quality and quantity of available groundwater resources.

- Groundwater Resources Objective GW4 (Monitoring): Establish a program for long-term monitoring of groundwater resources to assess whether the quality or quantity of groundwater resources are being

adversely impacted through time. Data collected during this monitoring program shall be shared with the public and be used to promote groundwater resource protection.

- Groundwater Resources Objective GW5 (Education): Engage, educate, and enable the public to utilize groundwater resources more efficiently and to protect both groundwater quality and sustained availability.

- Surface Water Resources Objective SW1 (Planning): Work with State and regional partners to preserve and protect the health of streams and reservoirs located within Fauquier County.

- Surface Water Resources Objective SW2 (Planning): Coordinate a surface water management program with state and regional initiatives, including water supply planning, TMDL studies and implementation plans, Tributary Strategies, and other Chesapeake Bay programs.

- Surface Water Resources Objective SW3 (Management/Protection): Promote innovative stormwater management, including Low-Impact Development (LID). Coordinate groundwater and surface water protection.

- Surface Water Resources Objective SW4 (Management/Protection): Develop a riparian buffer protection program that leverages resources from state and regional partners.

- Surface Water Resources Objective SW5 (Monitoring): Work with DEQ, USGS, JMSWCD, and citizen volunteers to establish and maintain a monitoring program for County streams that can be used to gage changes through time and that is accessible to the public.

- Surface Water Resource Objective SW6 (Education) Engage, educate, and enable the public to utilize surface water resources more efficiently and protect surface water quality.

In addition to the recommendations above, Fauquier County and FCWSA have in place a regulatory process to address new supply and demand created by growth. When a new development is proposed, the two entities work together to ensure the water supply infrastructure (wells, storage, and distribution) is designed and implemented to FCWSA and/or Virginia Department of Health standards. FCWSA's policy is to support their existing customer base. As such, each new development that becomes part of their system incrementally adds both supply and demand to the existing system. In addition, it is important to note that the Virginia Department of Health tracks the water usage of each community system on a monthly basis. If it finds that one system has exceeded 80% of its permitted capacity for three months in a row, this triggers a notice to the system owner that additional system capacity needs to be produced. This

provides a safeguard to the existing customer base to ensure the sustainability of community water systems.

Assessments of the contaminant threat potential to the regional groundwater aquifers have been on-going for several years. Fauquier County has contracted with EGGI in order to assess each service district and identify threats to both the groundwater quality and the quantity. In 2010, Fauquier County was awarded a partial grant from the VADEQ and the VDH to continue these efforts. The County plans to continue to pursue funding to advance these efforts and educate the public regarding conservation.

Alternatives Analysis

The alternatives analysis considers traditional and non-traditional means of meeting water demand. For this planning area, traditional water demand management alternatives are the most appropriate. This is due to the fact that the factors used to project water use demand have been extremely conservative in the planning assumptions. The acceptable recharge rate should be kept above 70%; the potential development outside of service districts does not take into consideration the sliding scale and proportionate share zoning which will lower the available subdivision potential; and the estimated growth rate includes previous years of high growth that are likely not to be seen again in the near future. In addition, the projected water usage of 100 gallons per person per day leaves open the opportunity to reduce water demand per person based on technology or future need. For example, the in 2009 Town of Remington used approximately 42 gallons per person per day, not the assumed 100 gallons per day per person applied countywide. Technology may help as well with techniques like flow audits as systems age.

The partner jurisdictions and service authorities in this planning area may choose to consider additional water demand management techniques. For example, all new building stock in Fauquier County follow the Virginia Statewide Building Code low flow plumbing requirements. However, building stock that was constructed prior to this regulation may contain plumbing fixtures with higher water demands. Therefore, a substantial water reduction could be realized if older building stock was retrofitted to current low flow standards. The chart below illustrates how a retrofitted residence can reduce its water usage by 15 gallons per person per day.

Device Description	Device Life (yrs)	End-Use Reduction (gal/cap/day)
New Showerhead	5-10	2.4
Bathroom Faucet Actuator	5	1.6
1.6 gallon Toilets	20-30	10.4
Kitchen Faucet Actuator	5	0.3
Laundry Faucet Actuator	5	0.3
		TOTAL = 15 gal/cap/day

Conclusion

The Regional Water Supply Plan for Fauquier County, the Town of Remington, and the Town of The Plains finds that in 2009 the planning area experienced a water usage of 5,757,100 gallons per day while the projected water use demand in 2040 is estimated to be 9,850,400 gallons per day. Through careful planning, resource identification, and protection, the localities are confident that the ground water supply will be sufficient to meet the estimated water demand.

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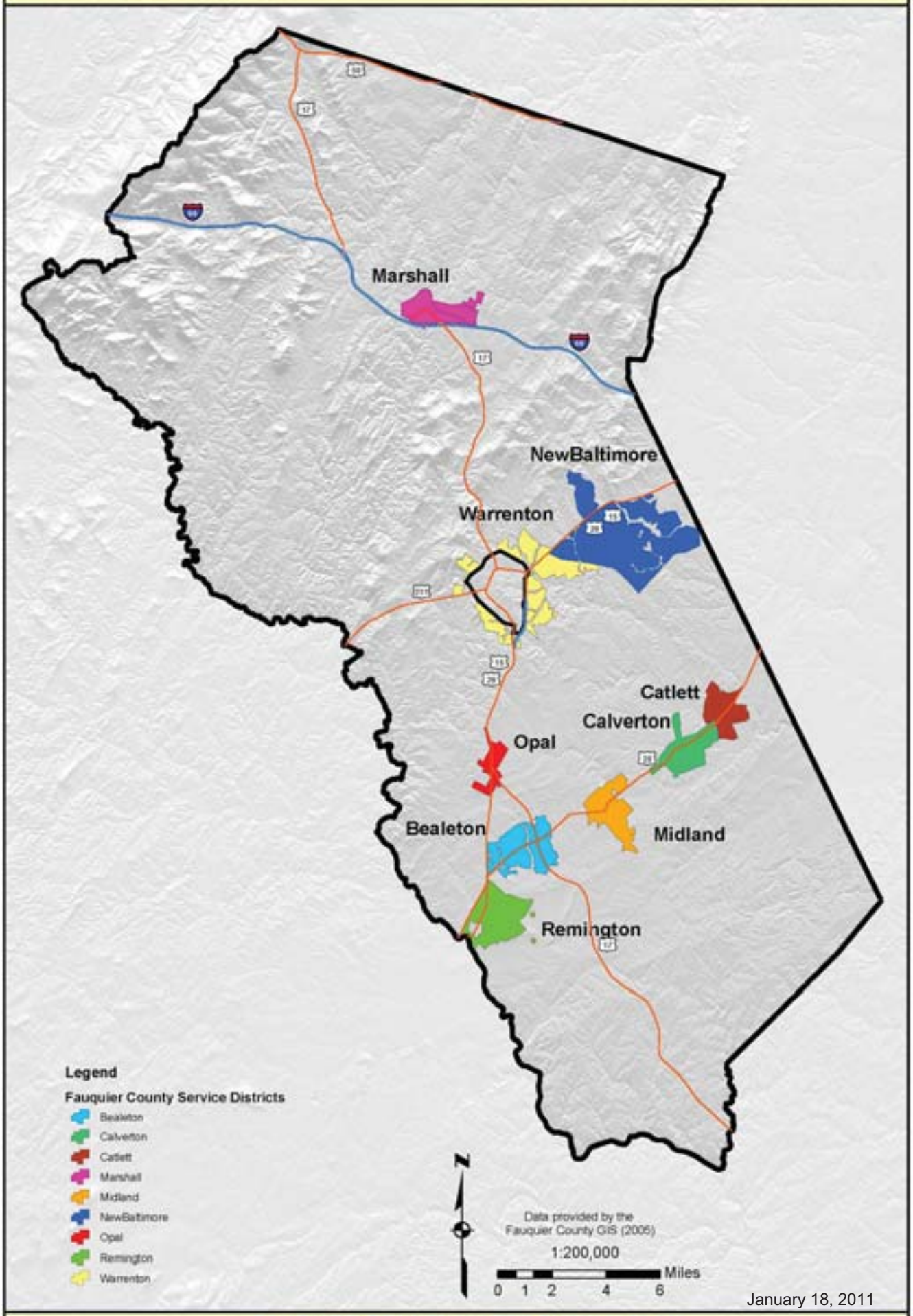
FIGURES

FIGURE 1.1 - SERVICE DISTRICTS OF FAUQUIER COUNTY

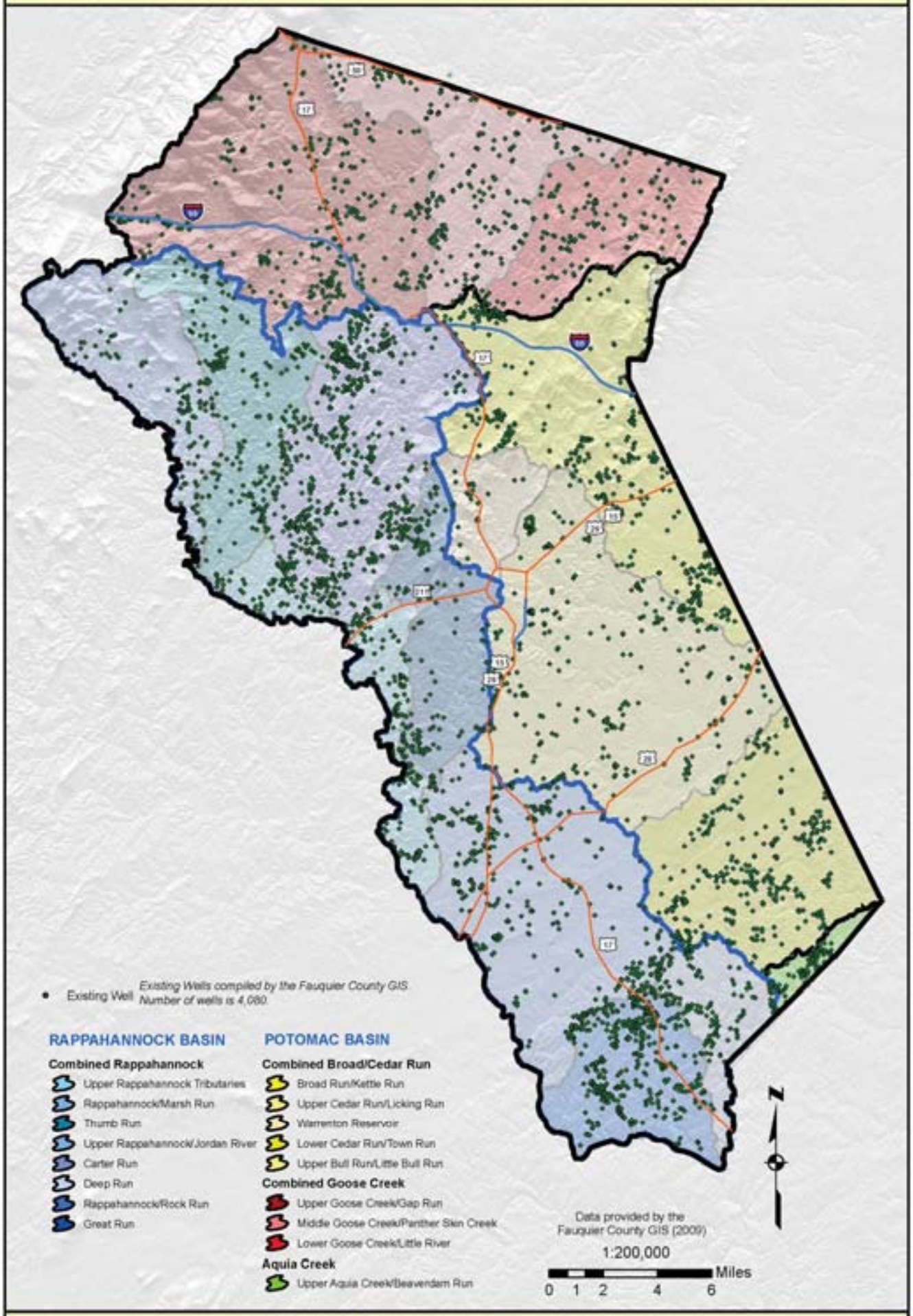


January 18, 2011

FAUQUIER COUNTY WATER SUPPLY PLAN

Emery & Garrett Groundwater, Inc.

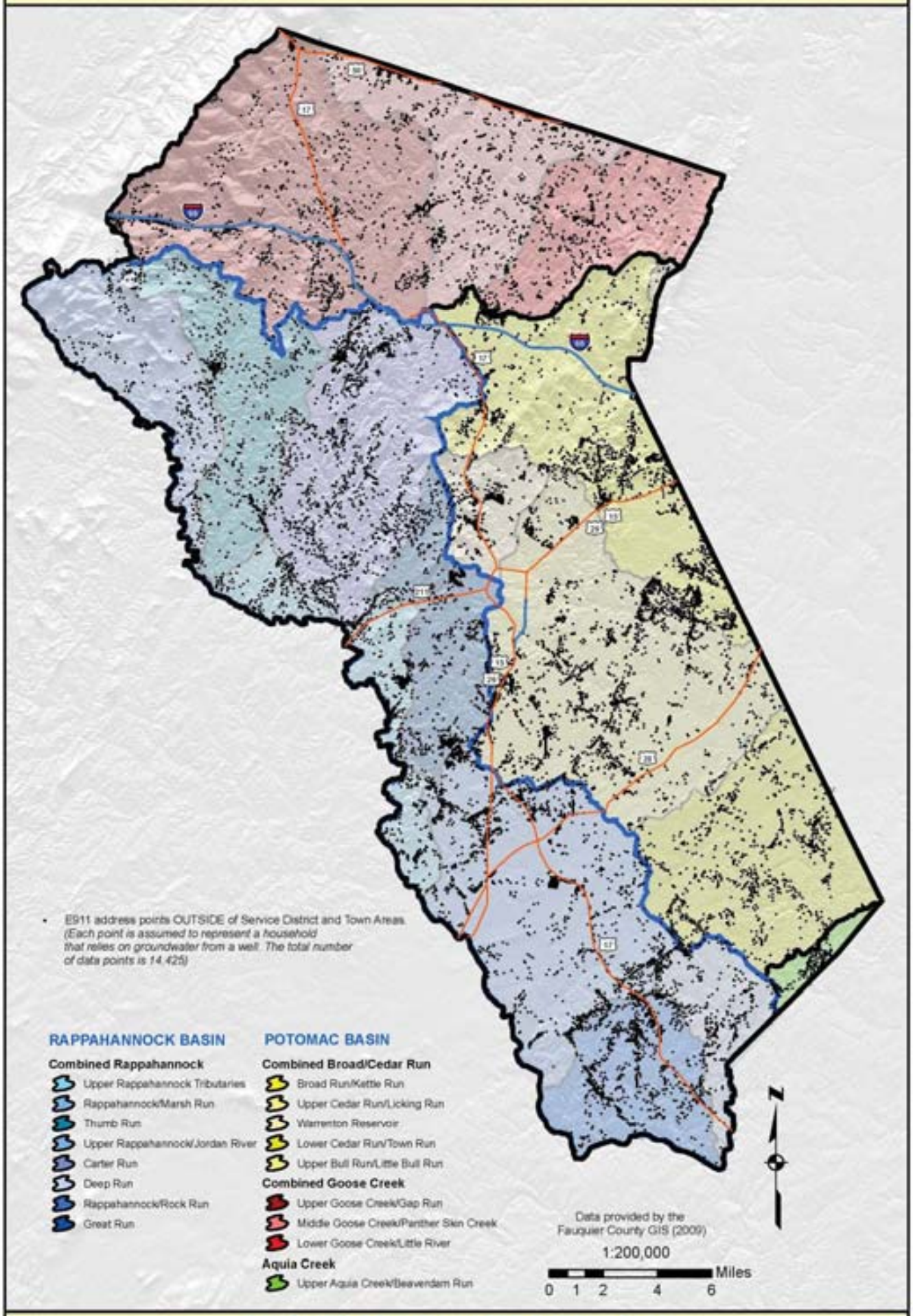
FIGURE 1.2 - EXISTING WELLS in FAUQUIER COUNTY



FAUQUIER COUNTY WATER SUPPLY PLAN

Emery & Garrett Groundwater, Inc.

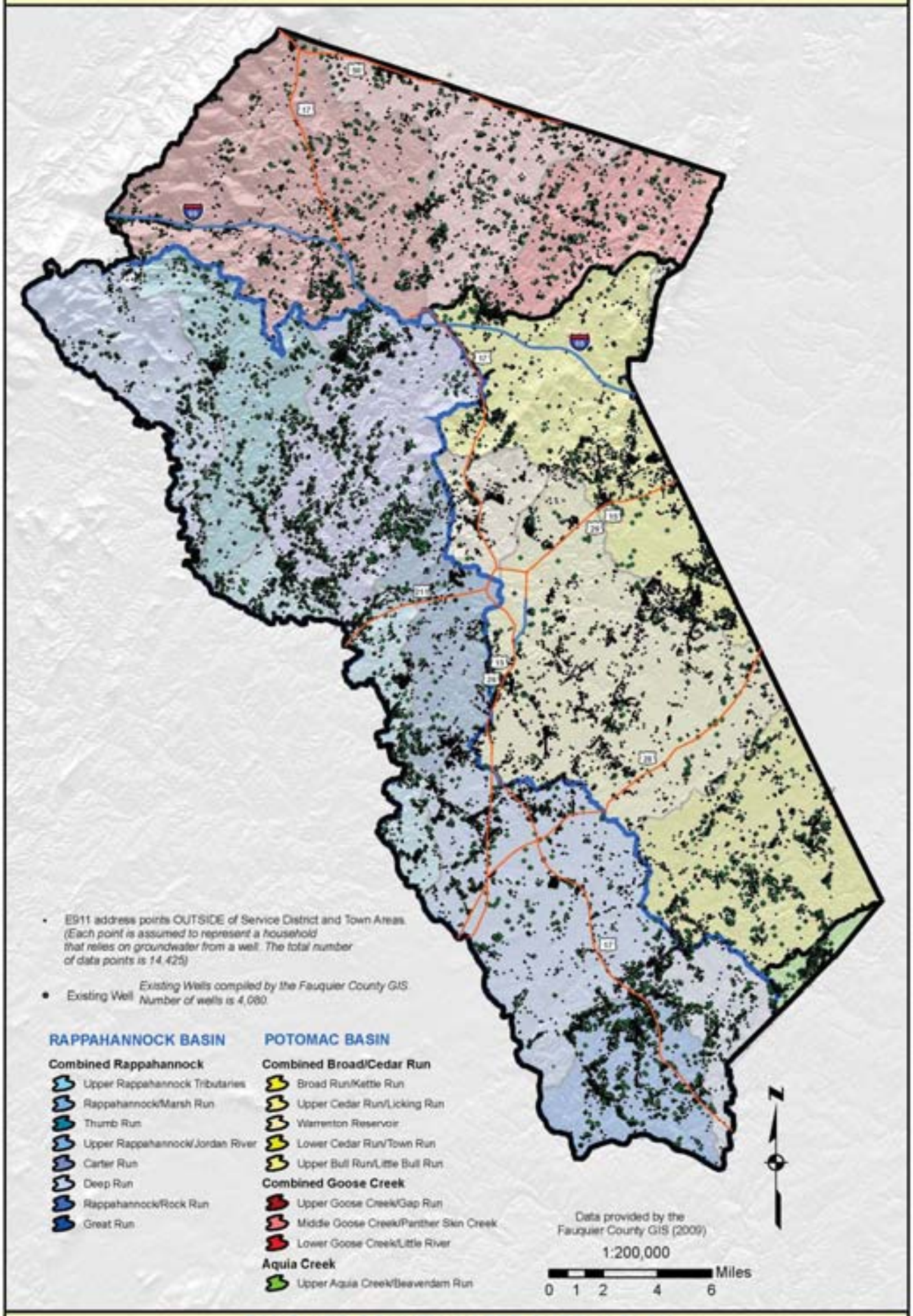
FIGURE 1.3 - E-911 ADDRESS POINTS in FAUQUIER COUNTY



FAUQUIER COUNTY WATER SUPPLY PLAN

Emery & Garrett Groundwater, Inc.

FIGURE 1.4 - E-911 ADDRESS POINTS and EXISTING WELLS



FAUQUIER COUNTY WATER SUPPLY PLAN

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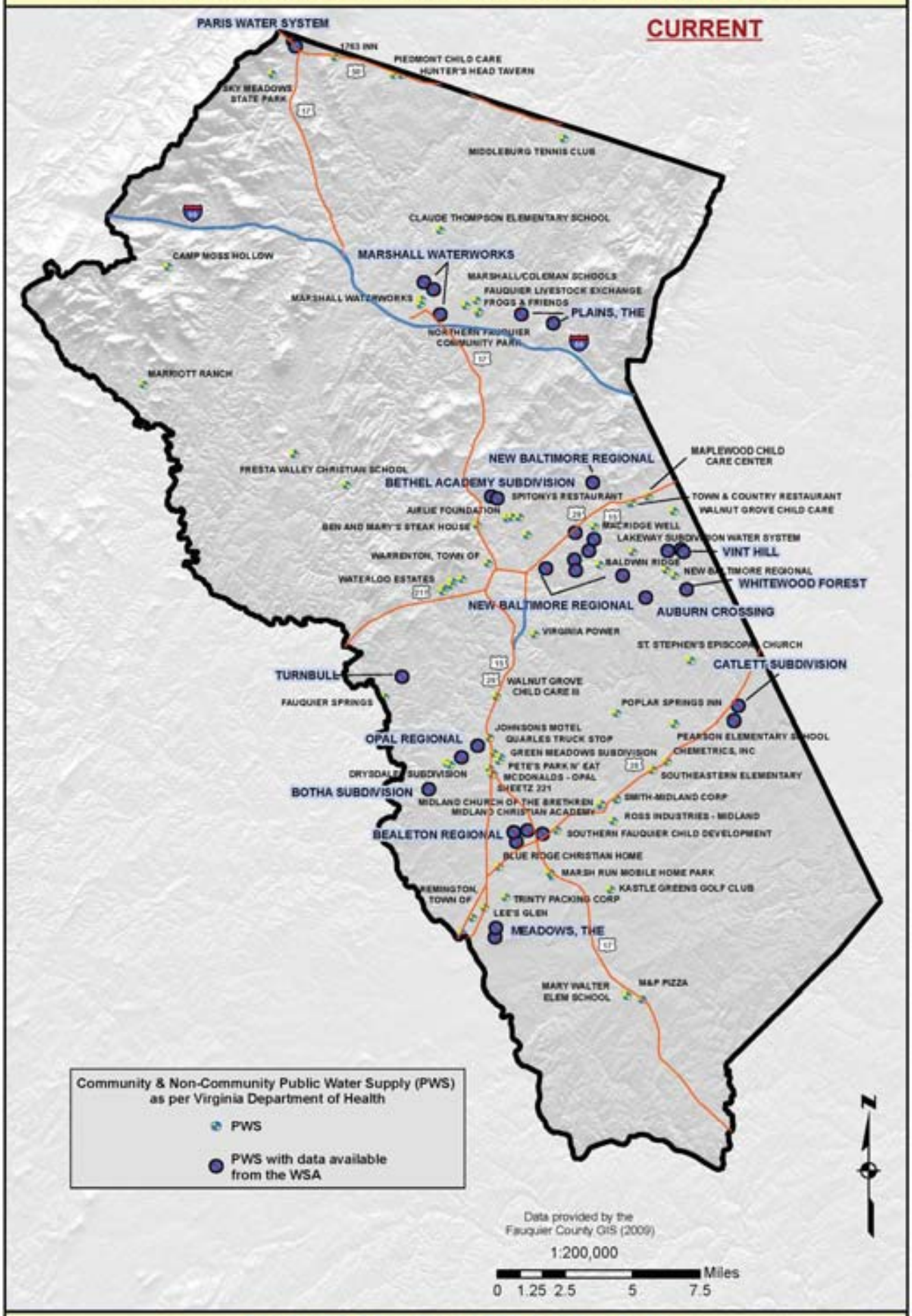
FIGURE 1.5 - PUBLIC WATER SYSTEMS in FAUQUIER COUNTY



FAUQUIER COUNTY WATER SUPPLY PLAN

Emery & Garrett Groundwater, Inc.

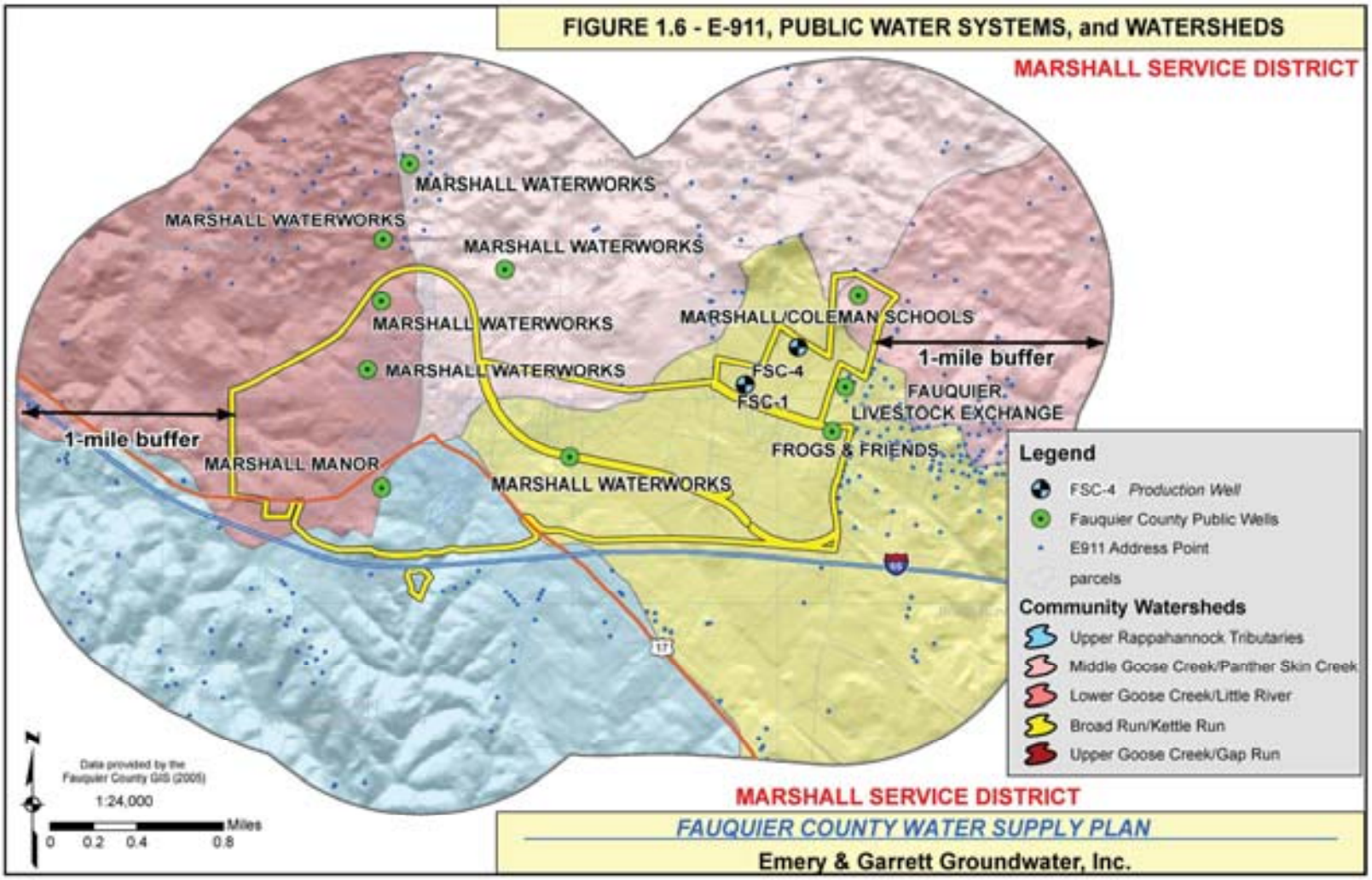


FIGURE 1.6 - E-911, PUBLIC WATER SYSTEMS, and WATERSHEDS
MARSHALL SERVICE DISTRICT
MARSHALL WATERWORKS
MARSHALL WATERWORKS
MARSHALL WATERWORKS
MARSHALL WATERWORKS
MARSHALL WATERWORKS
MARSHALL/COLEMAN SCHOOLS
1-mile buffer
FSC-4
FSC-1
FAUQUIER LIVESTOCK EXCHANGE
FROGS & FRIENDS
1-mile buffer
MARSHALL MANOR
MARSHALL WATERWORKS
Legend
FSC-4 Production Well
Fauquier County Public Wells
E911 Address Point
parcels
Community Watersheds
Upper Rappahannock Tributaries
Middle Goose Creek/Panther Skin Creek
Lower Goose Creek/Little River
Broad Run/Kettle Run
Upper Goose Creek/Gap Run
Data provided by the Fauquier County GIS (2005)
1:24,000
Miles
0 0.2 0.4 0.8
MARSHALL SERVICE DISTRICT
FAUQUIER COUNTY WATER SUPPLY PLAN
Emery & Garrett Groundwater, Inc.

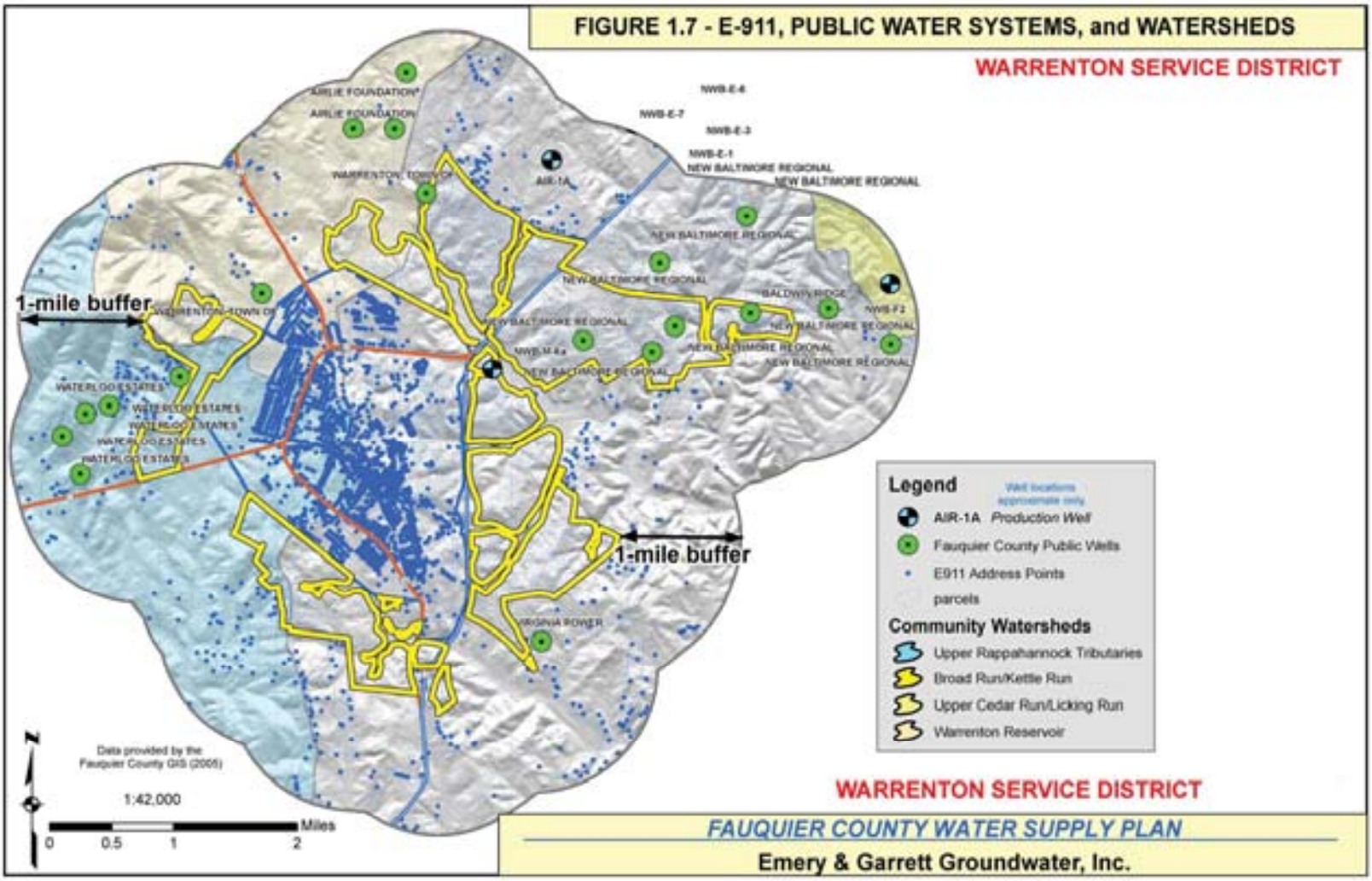


FIGURE 1.7 - E-911, PUBLIC WATER SYSTEMS, and WATERSHEDS
WARRENTON SERVICE DISTRICT
AIRLIE FOUNDATION
AIRLIE FOUNDATION
WARRENTON, TOWN OF
AIR-1A
NWB-E-4
NWB-E-7
NWB-E-3
NWB-E-1
NEW BALTIMORE REGIONAL
NEW BALTIMORE REGIONAL
NEW BALTIMORE REGIONAL
NEW BALTIMORE REGIONAL
BALDWIN RIDGE
NWB-F2
NEW BALTIMORE REGIONAL
NEW BALTIMORE REGIONAL
NEW BALTIMORE REGIONAL
NEW BALTIMORE REGIONAL
NEW BALTIMORE REGIONAL
NWB-M-4
1-mile buffer
WATERLOO ESTATES
WATERLOO ESTATES
WATERLOO ESTATES
WATERLOO ESTATES
WATERLOO ESTATES
1-mile buffer
VIRGINIA POWER
Legend
Well locations approximate only
AIR-1A Production Well
Fauquier County Public Wells
E911 Address Points
parcels
Community Watersheds
Upper Rappahannock Tributaries
Broad Run/Kettle Run
Upper Cedar Run/Licking Run
Warrenton Reservoir
Data provided by the Fauquier County GIS (2005)
1:42,000
Miles
0
0.5
1
2
WARRENTON SERVICE DISTRICT
FAUQUIER COUNTY WATER SUPPLY PLAN
Emery & Garrett Groundwater, Inc.

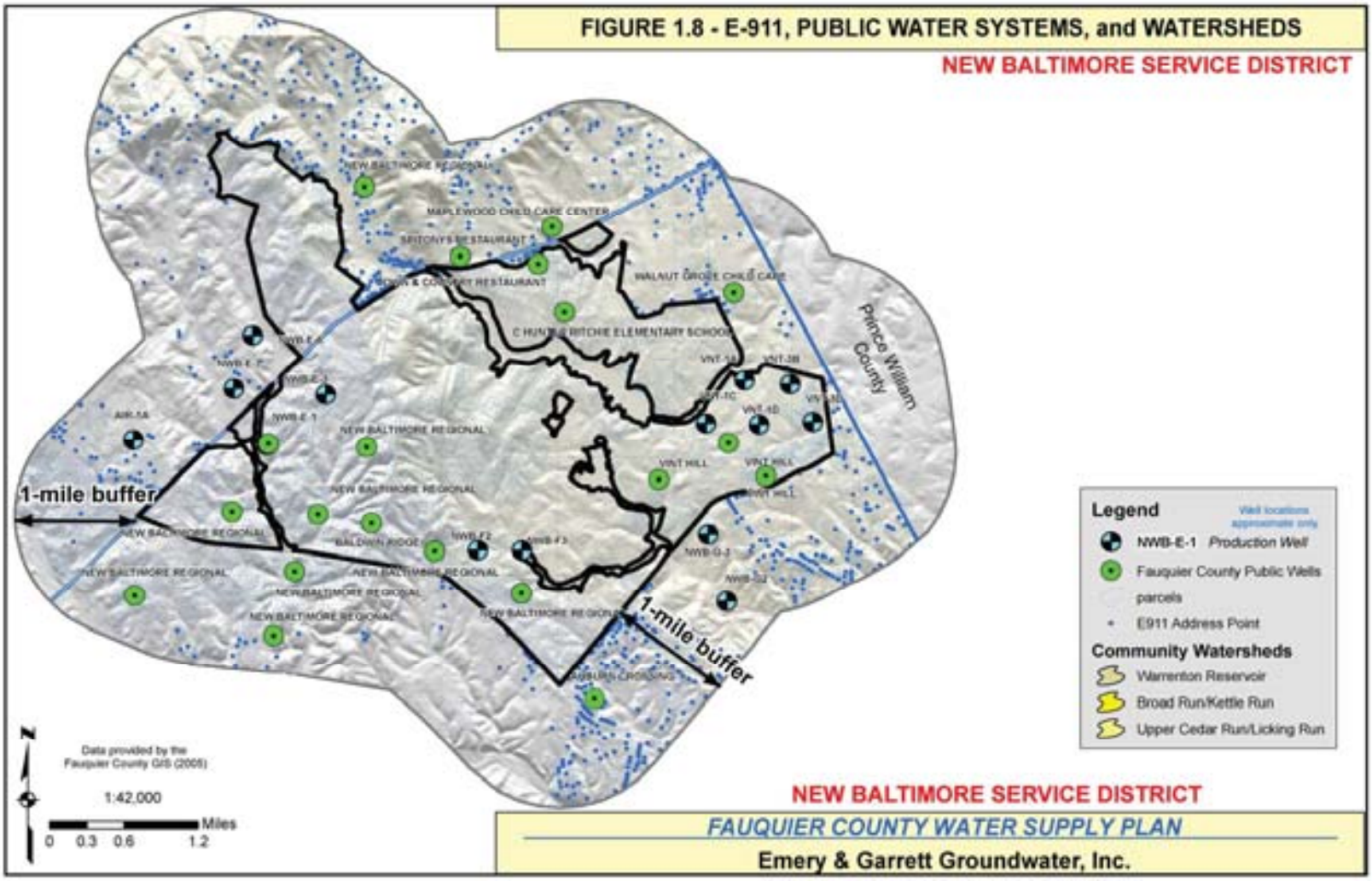


FIGURE 1.8 - E-911, PUBLIC WATER SYSTEMS, and WATERSHEDS
NEW BALTIMORE SERVICE DISTRICT
NEW BALTIMORE REGIONAL
MAPLEWOOD CHILD CARE CENTER
SPITONY'S RESTAURANT
WALNUT GROVE CHILD CARE
C HUNTER RITCHIE ELEMENTARY SCHOOL
Prince William County
1-mile buffer
1-mile buffer
BALDWIN RIDGE
VINT HILL
Legend
Well locations approximate only
NWB-E-1 Production Well
Fauquier County Public Wells
parcels
E911 Address Point
Community Watersheds
Warrenton Reservoir
Broad Run/Kettle Run
Upper Cedar Run/Licking Run
Data provided by the Fauquier County GIS (2005)
1:42,000
Miles
0 0.3 0.6 1.2
NEW BALTIMORE SERVICE DISTRICT
FAUQUIER COUNTY WATER SUPPLY PLAN
Emery & Garrett Groundwater, Inc.

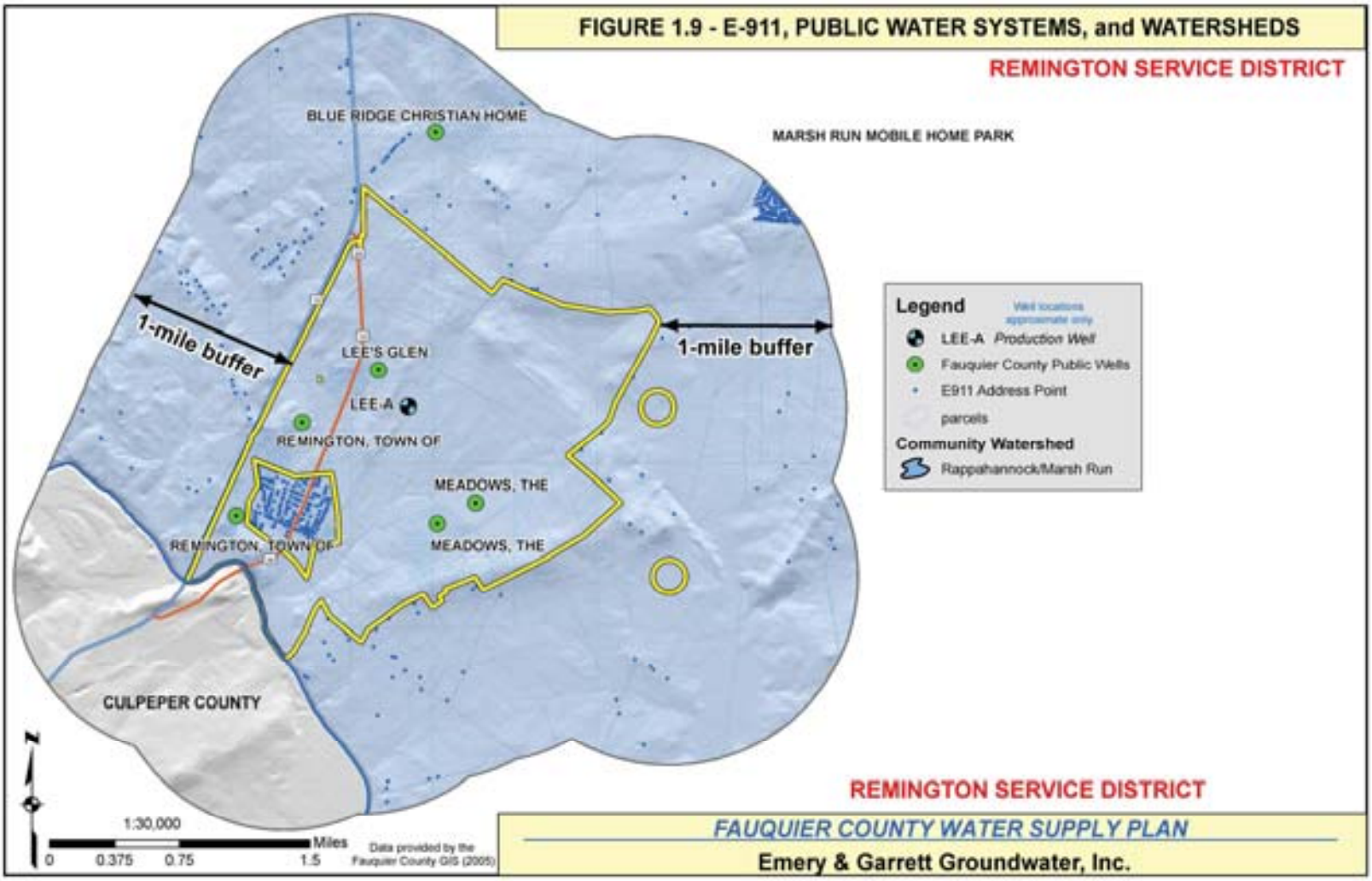
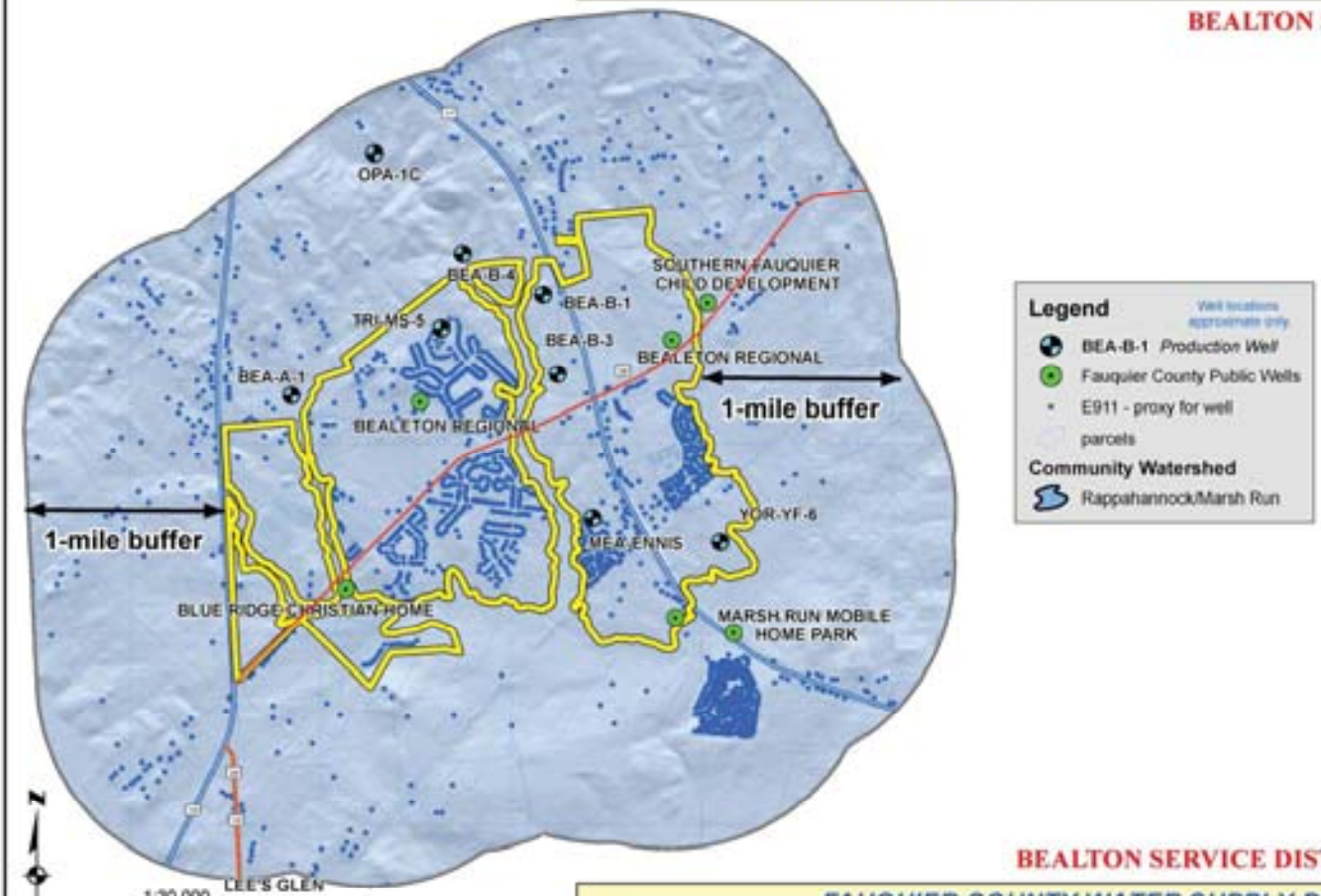


FIGURE 1.9 - E-911, PUBLIC WATER SYSTEMS, and WATERSHEDS
REMINGTON SERVICE DISTRICT
BLUE RIDGE CHRISTIAN HOME
MARSH RUN MOBILE HOME PARK
1-mile buffer
1-mile buffer
LEE'S GLEN
LEE-A
REMINGTON, TOWN OF
MEADOWS, THE
MEADOWS, THE
REMINGTON, TOWN OF
CULPEPER COUNTY
Legend
Well locations approximate only
LEE-A Production Well
Fauquier County Public Wells
E911 Address Point
parcels
Community Watershed
Rappahannock/Marsh Run
N
1:30,000
0 0.375 0.75 1.5 Miles
Data provided by the Fauquier County GIS (2005)
REMINGTON SERVICE DISTRICT
FAUQUIER COUNTY WATER SUPPLY PLAN
Emery & Garrett Groundwater, Inc.

FIGURE 1.10 - E-911, PUBLIC WATER SYSTEMS, and WATERSHEDS

BEALTON SERVICE DISTRICT

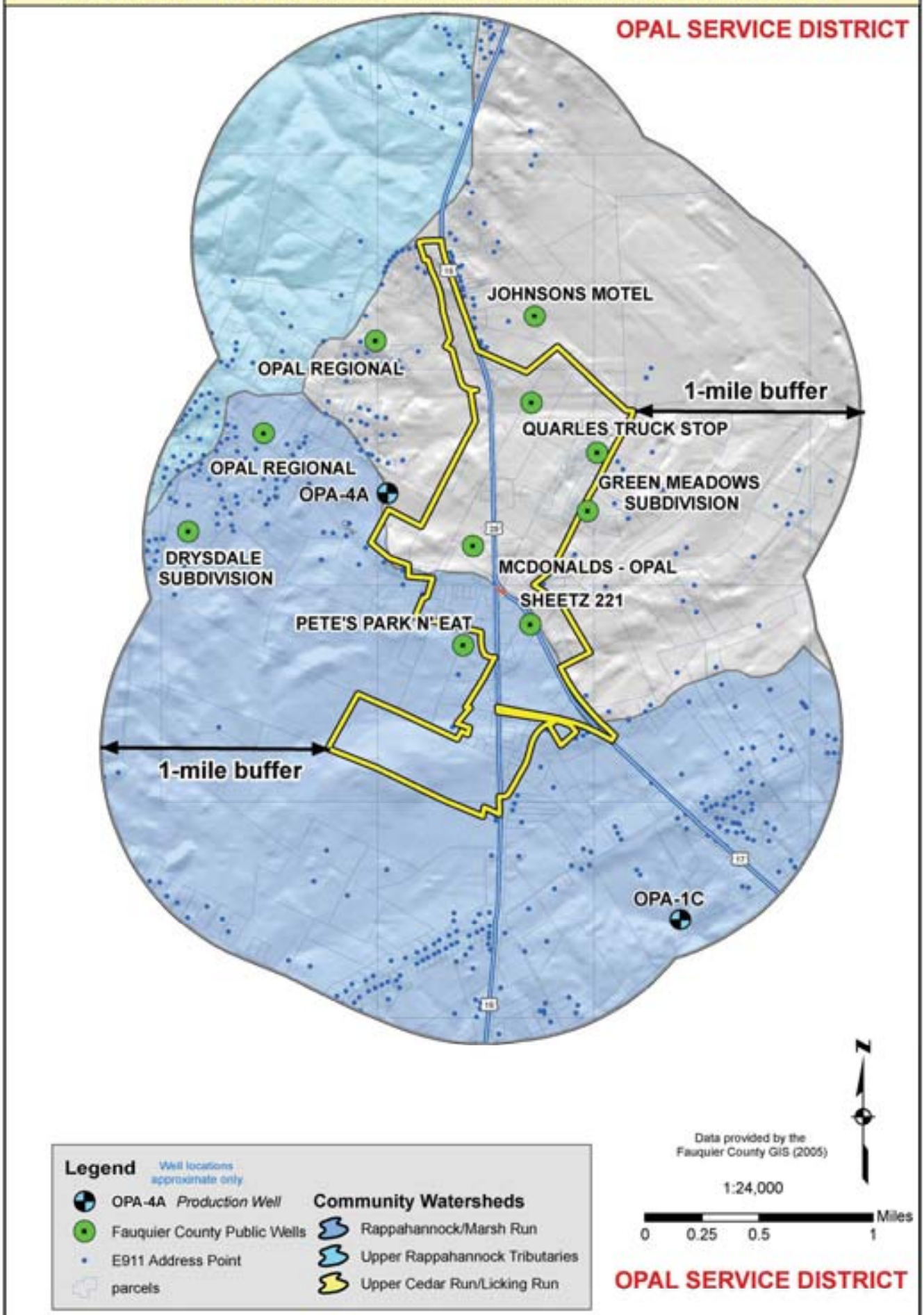


BEALTON SERVICE DISTRICT

FAUQUIER COUNTY WATER SUPPLY PLAN

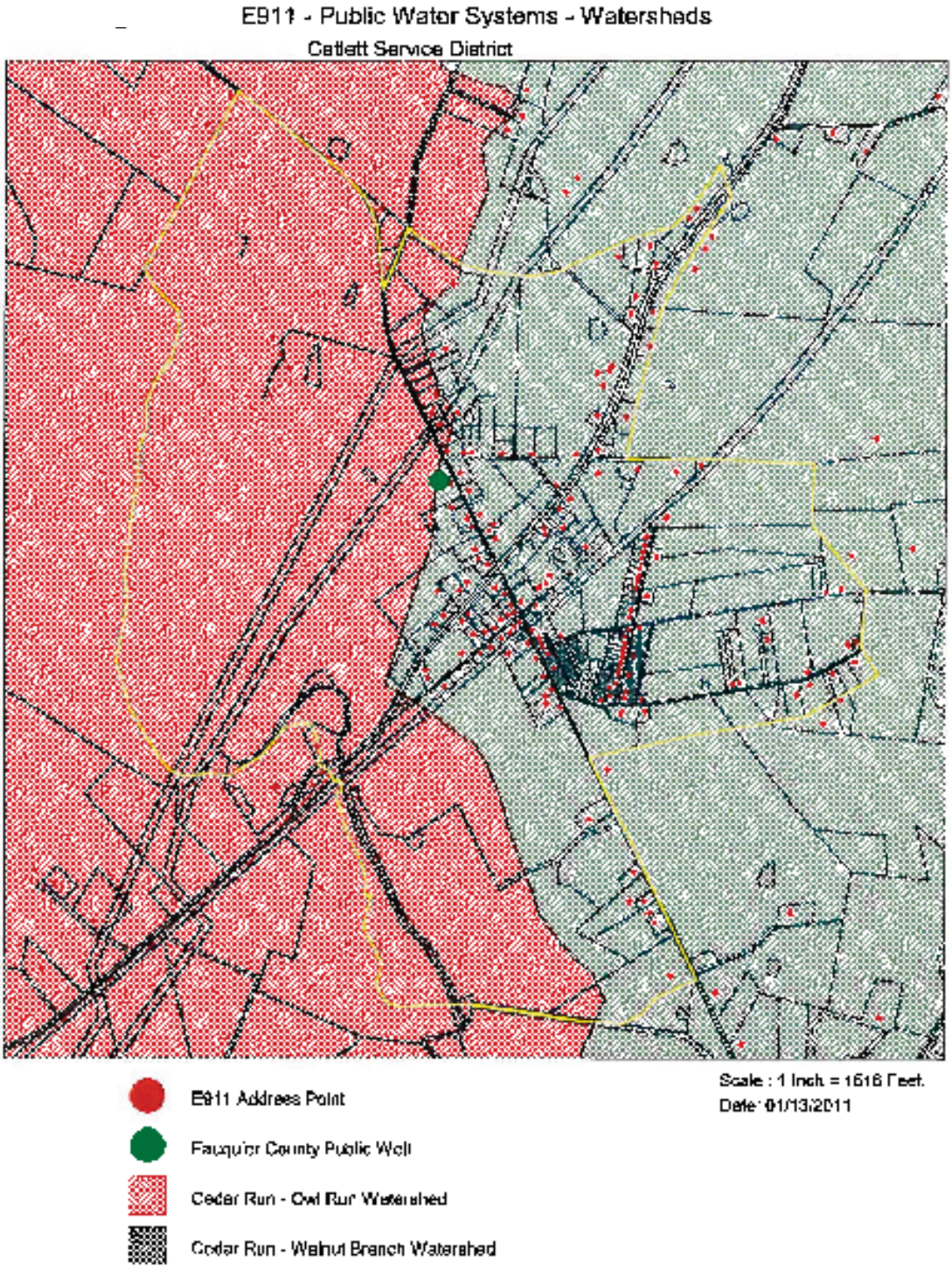
Emery & Garrett Groundwater, Inc.

FIGURE 1.11 - E-911, PUBLIC WATER SYSTEMS, and WATERSHEDS



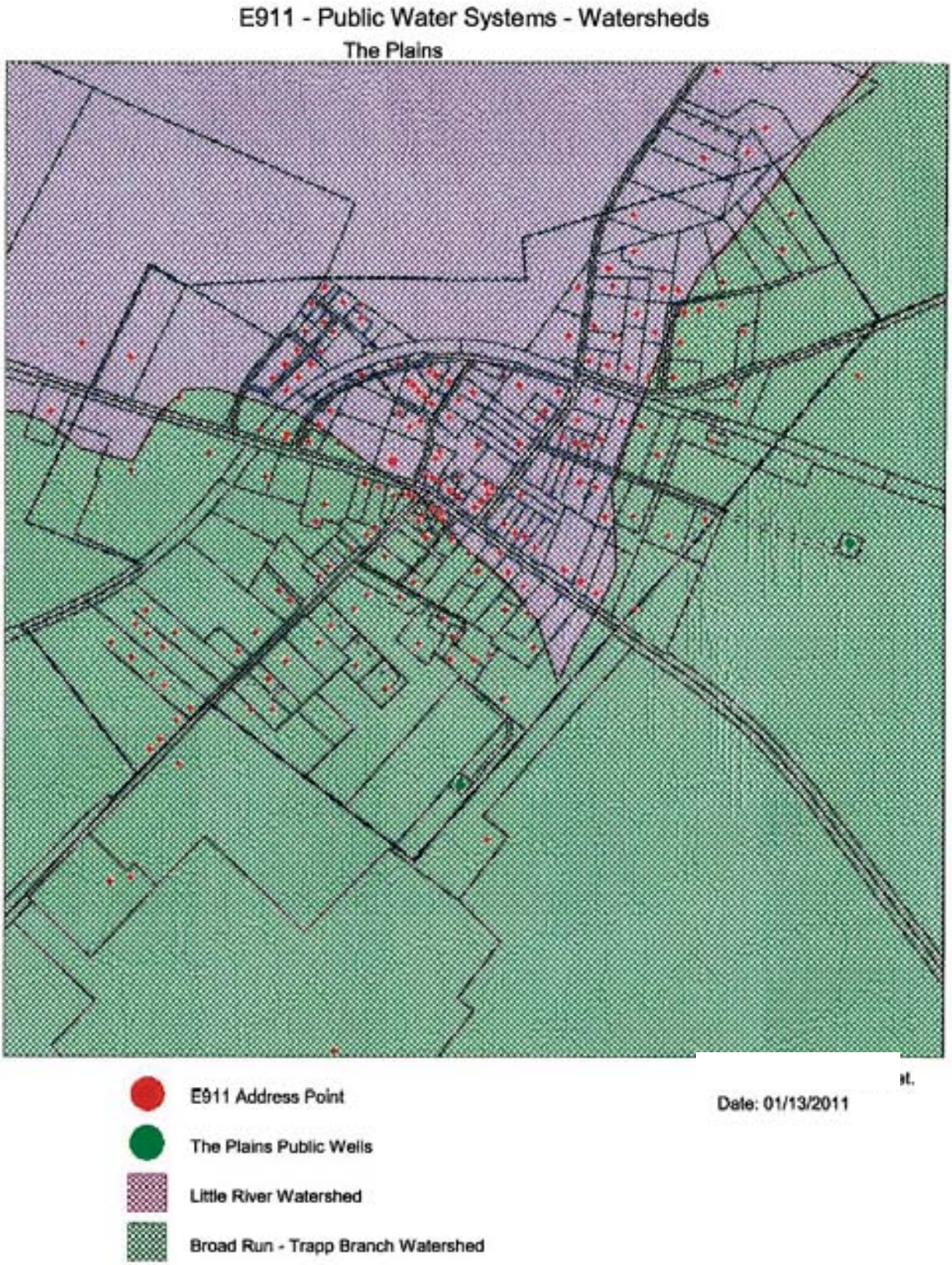
FAUQUIER COUNTY WATER SUPPLY PLAN

Emery & Garrett Groundwater, Inc.



E-911, Public Water Systems, and Watersheds- Catlett Service

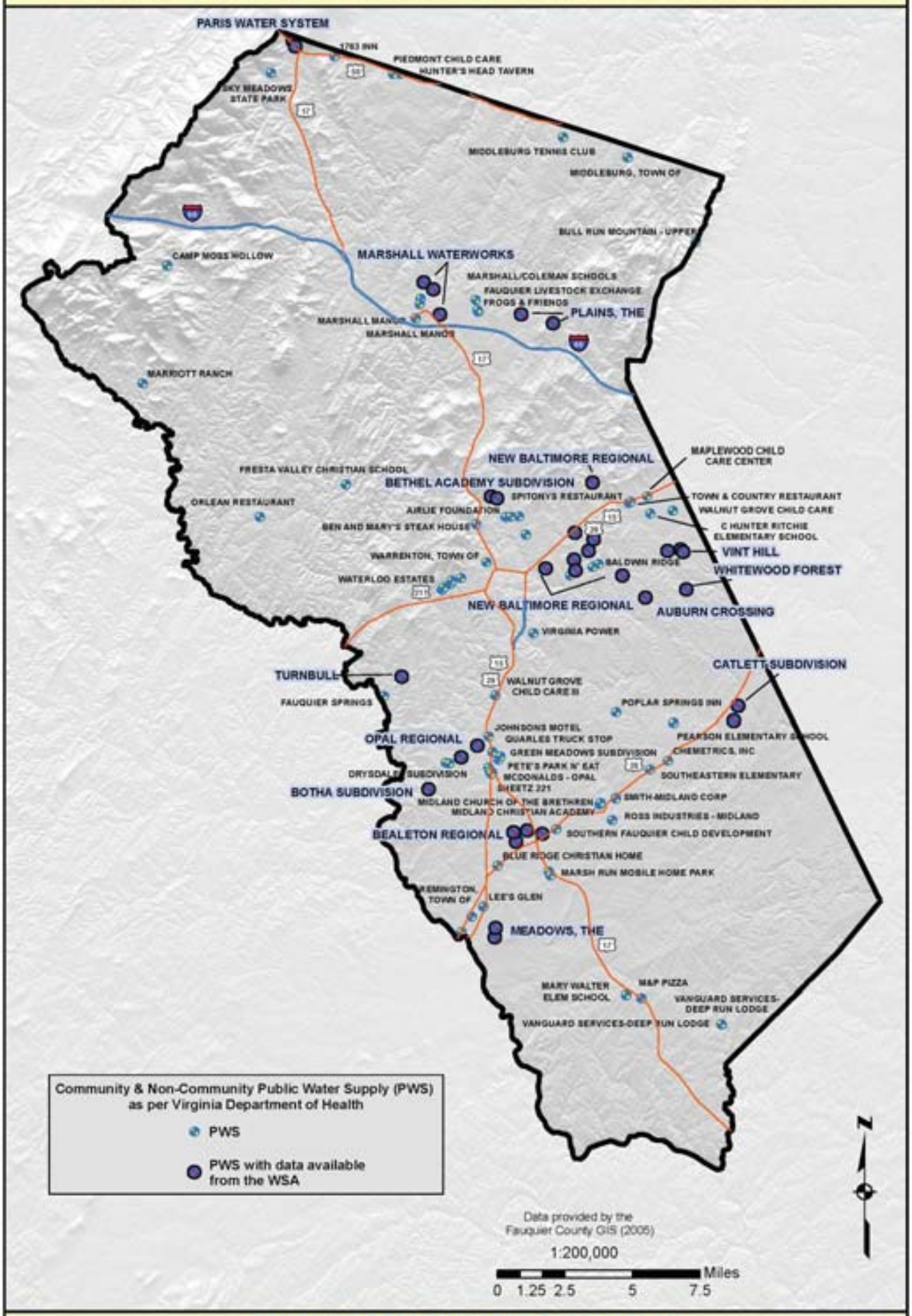
Information Provided by:
Fauquier County GIS



E-911, Public Water Systems, and Watersheds– The Plains Service District

Information Provided by: Fauquier County GIS

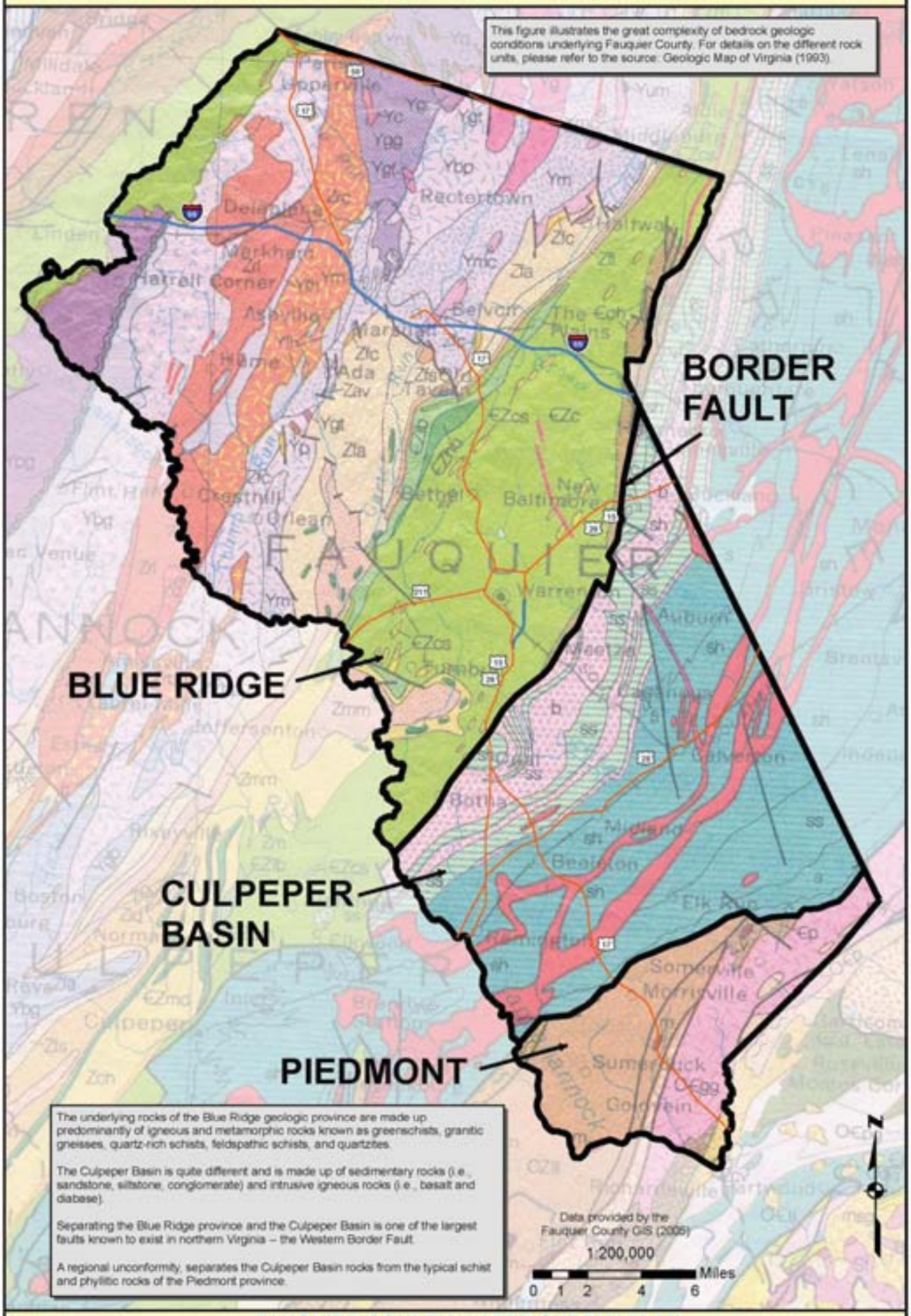
FIGURE 1.14 - PUBLIC WATER SYSTEMS in FAUQUIER COUNTY



FAUQUIER COUNTY WATER SUPPLY PLAN

Emery & Garrett Groundwater, Inc.

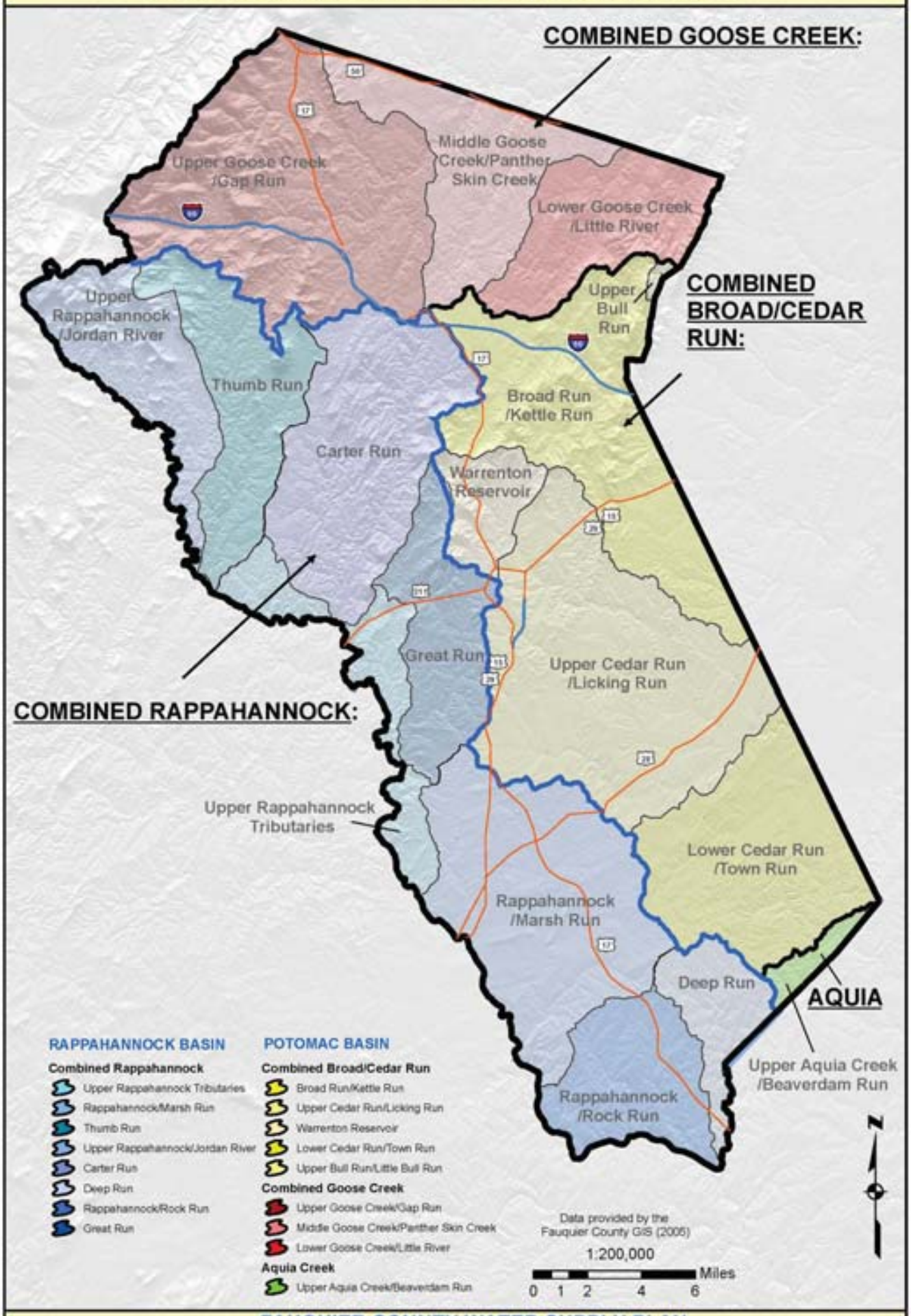
FIGURE 3.1 - REGIONAL BEDROCK GEOLOGY



FAUQUIER COUNTY WATER SUPPLY PLAN

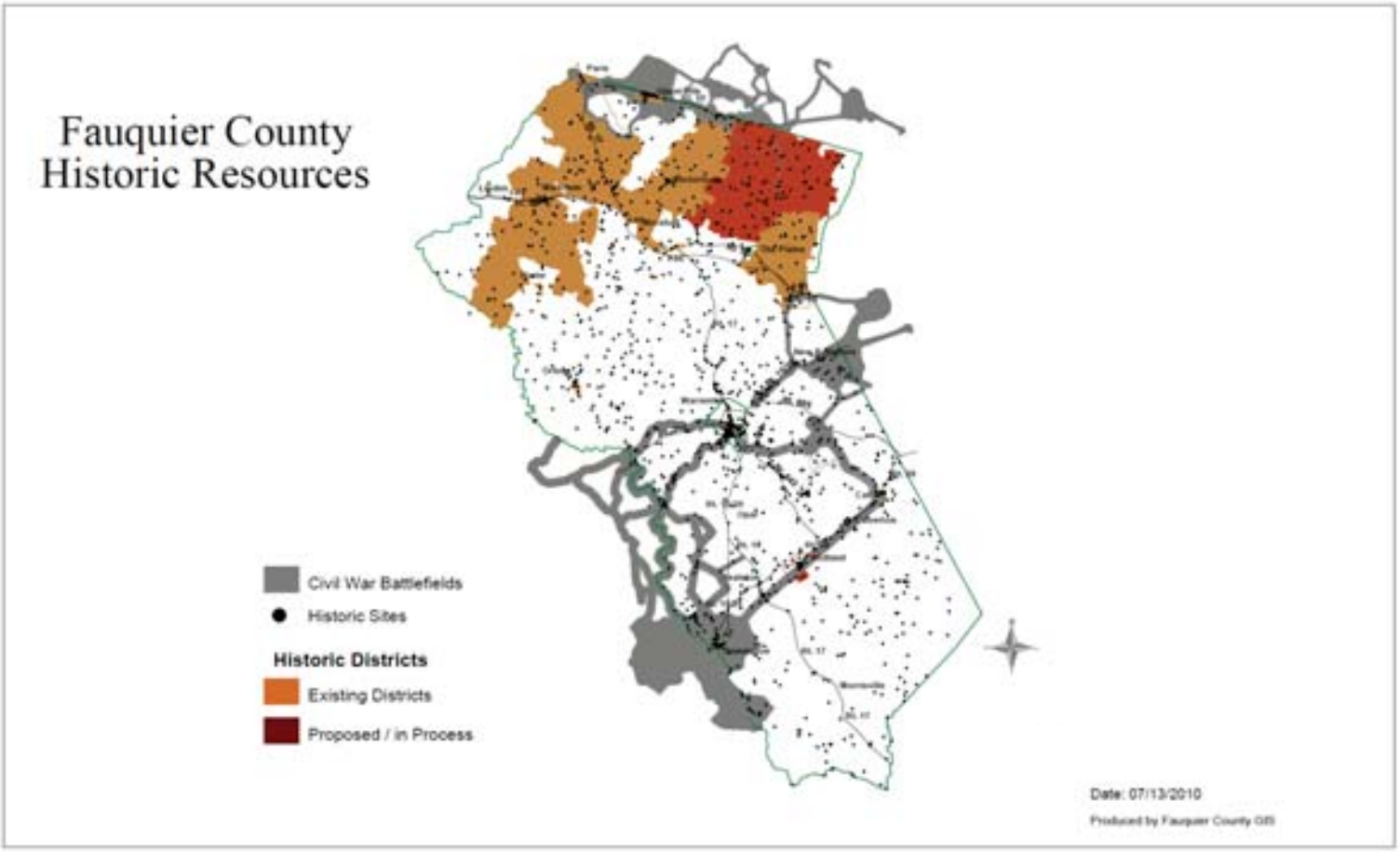
Emery & Garrett Groundwater, Inc.

FIGURE 3.3 - WATERSHEDS OF FAUQUIER COUNTY



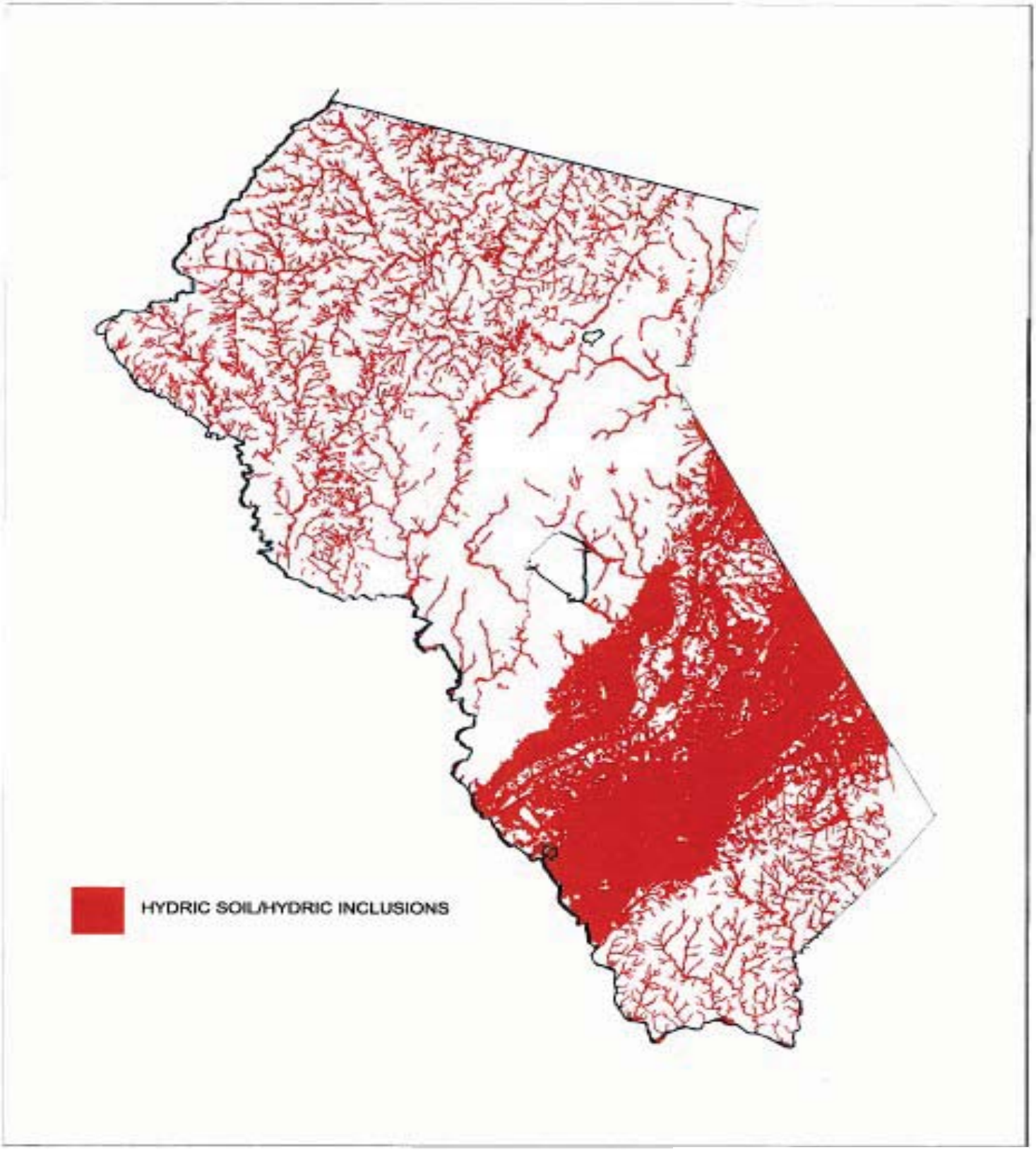
FAUQUIER COUNTY WATER SUPPLY PLAN

Emery & Garrett Groundwater, Inc.



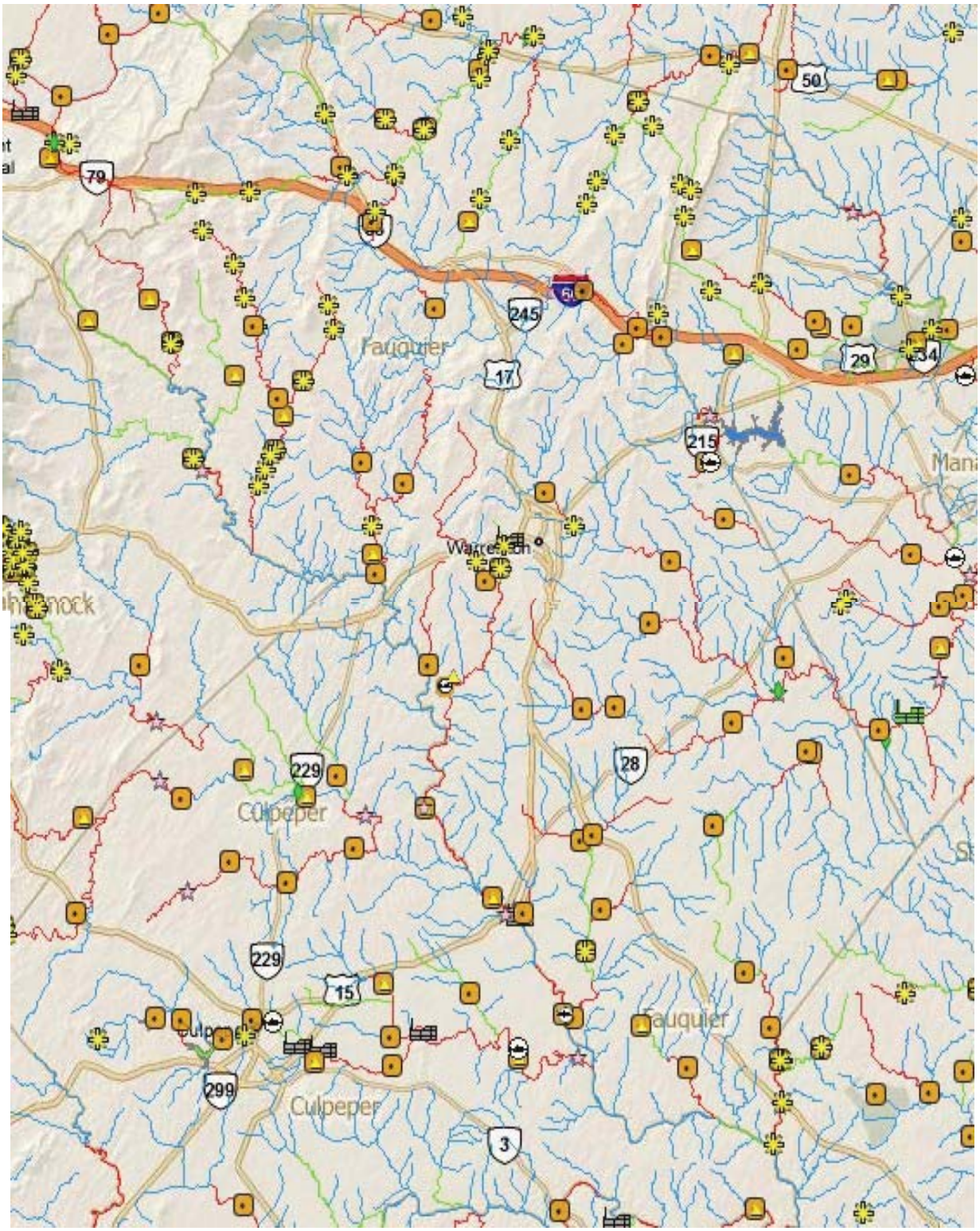
Sites of Historic Significance in Fauquier County

Information Provided by: Fauquier County GIS



Soils with Hydric Inclusions in Fauquier County

Information Provided by:
Fauquier County GIS



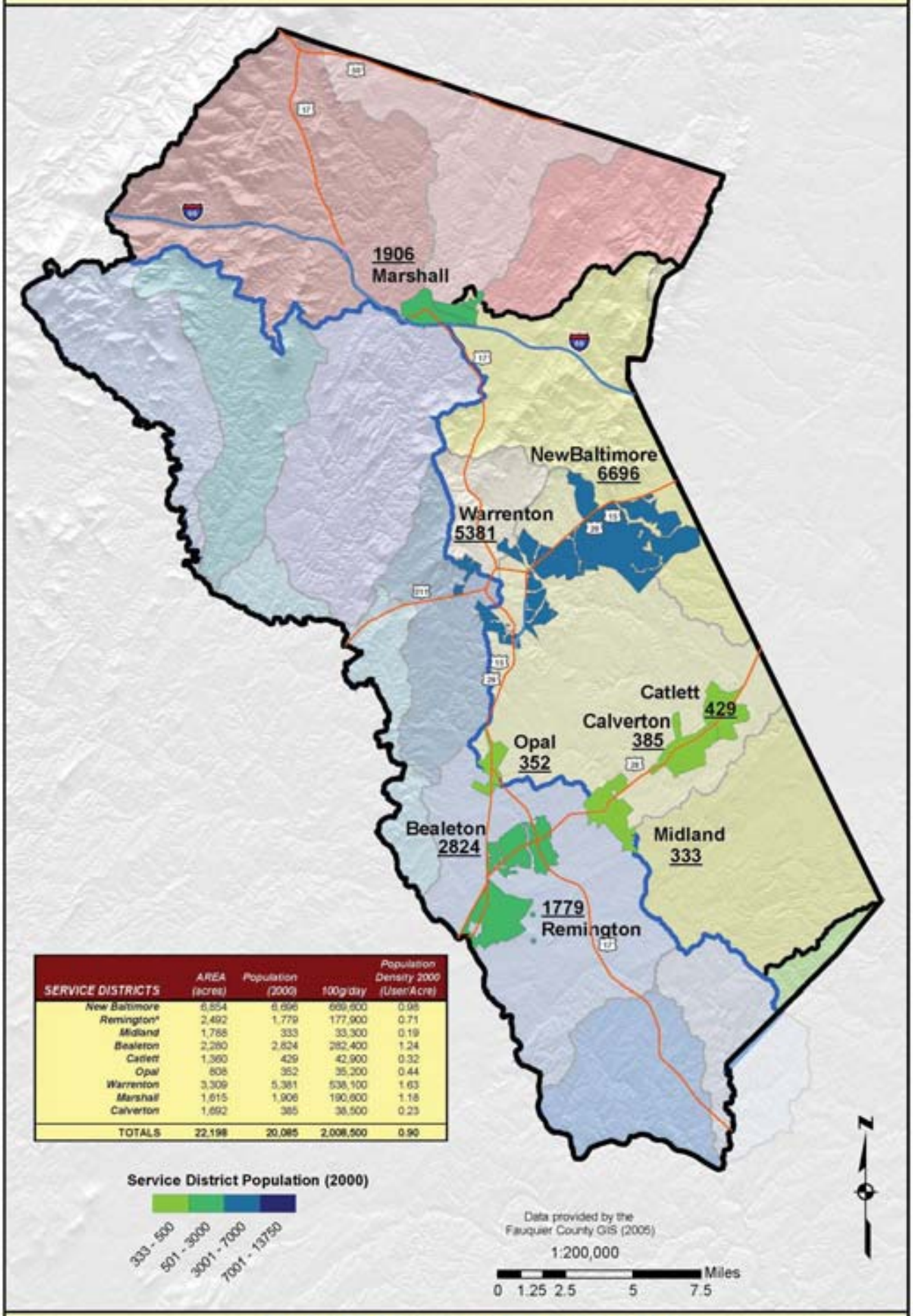
Impaired Stream (2008)

Impaired Streams in Fauquier County

Information Provided by: VADEQ

September 29, 2011	*FAUQUIER COUNTY WATER SUPPLY PLAN*	Figure 3-7

FIGURE 4.1 - SERVICE DISTRICT POPULATIONS - 2000

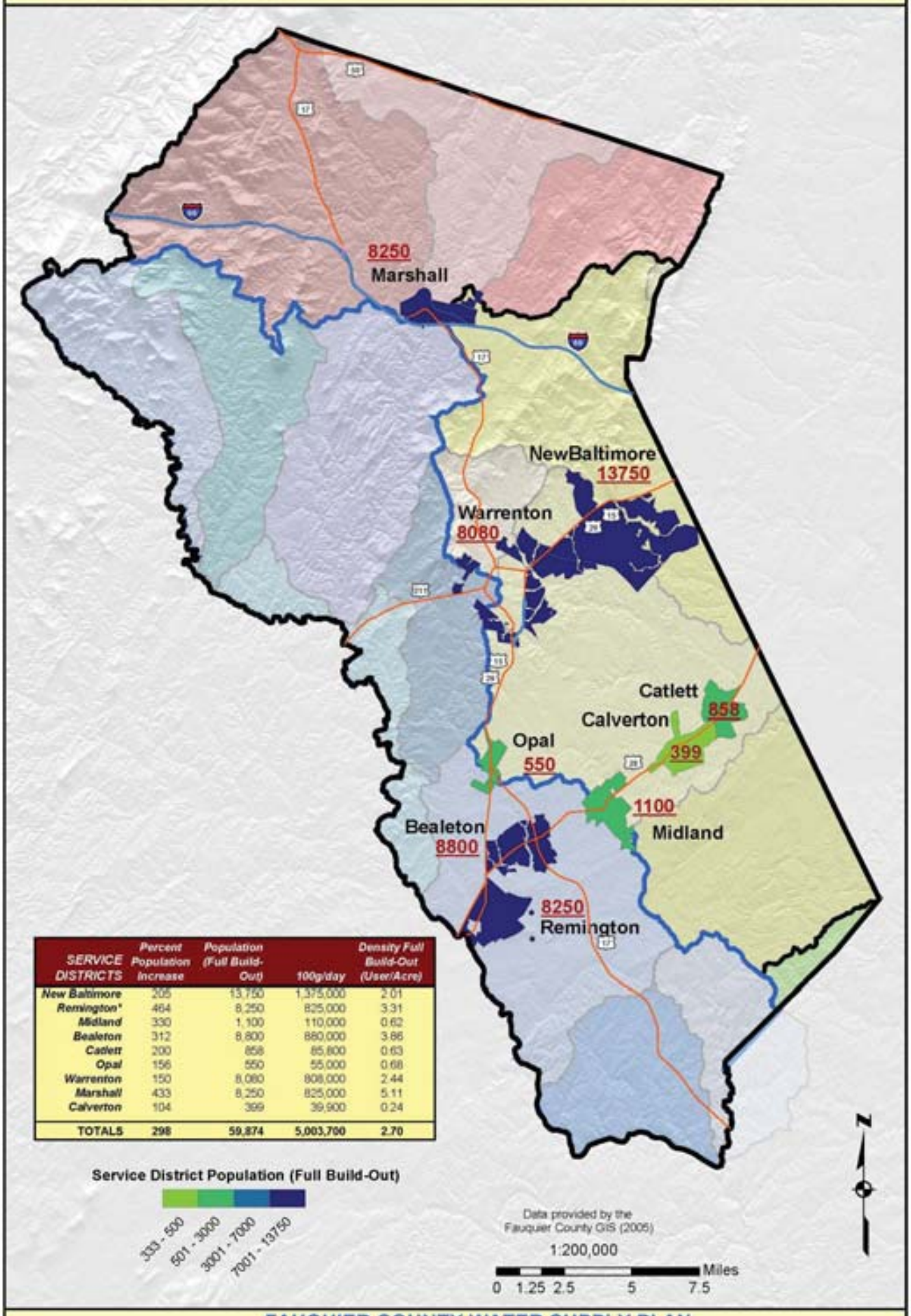


SERVICE DISTRICTS	AREA (acres)	Population (2000)	100g/day	Population Density 2000 (User/Acre)
New Baltimore	6,854	6,696	669,600	0.98
Remington*	2,492	1,779	177,900	0.71
Midland	1,788	333	33,300	0.19
Bealeton	2,280	2,824	282,400	1.24
Catlett	1,360	429	42,900	0.32
Opal	808	352	35,200	0.44
Warrenton	3,309	5,381	538,100	1.63
Marshall	1,615	1,906	190,600	1.18
Calverton	1,692	385	38,500	0.23
TOTALS	22,198	20,085	2,008,500	0.90

FAUQUIER COUNTY WATER SUPPLY PLAN

Emery & Garrett Groundwater, Inc.

FIGURE 4.2 - SERVICE DISTRICT POPULATIONS AT FULL BUILD-OUT

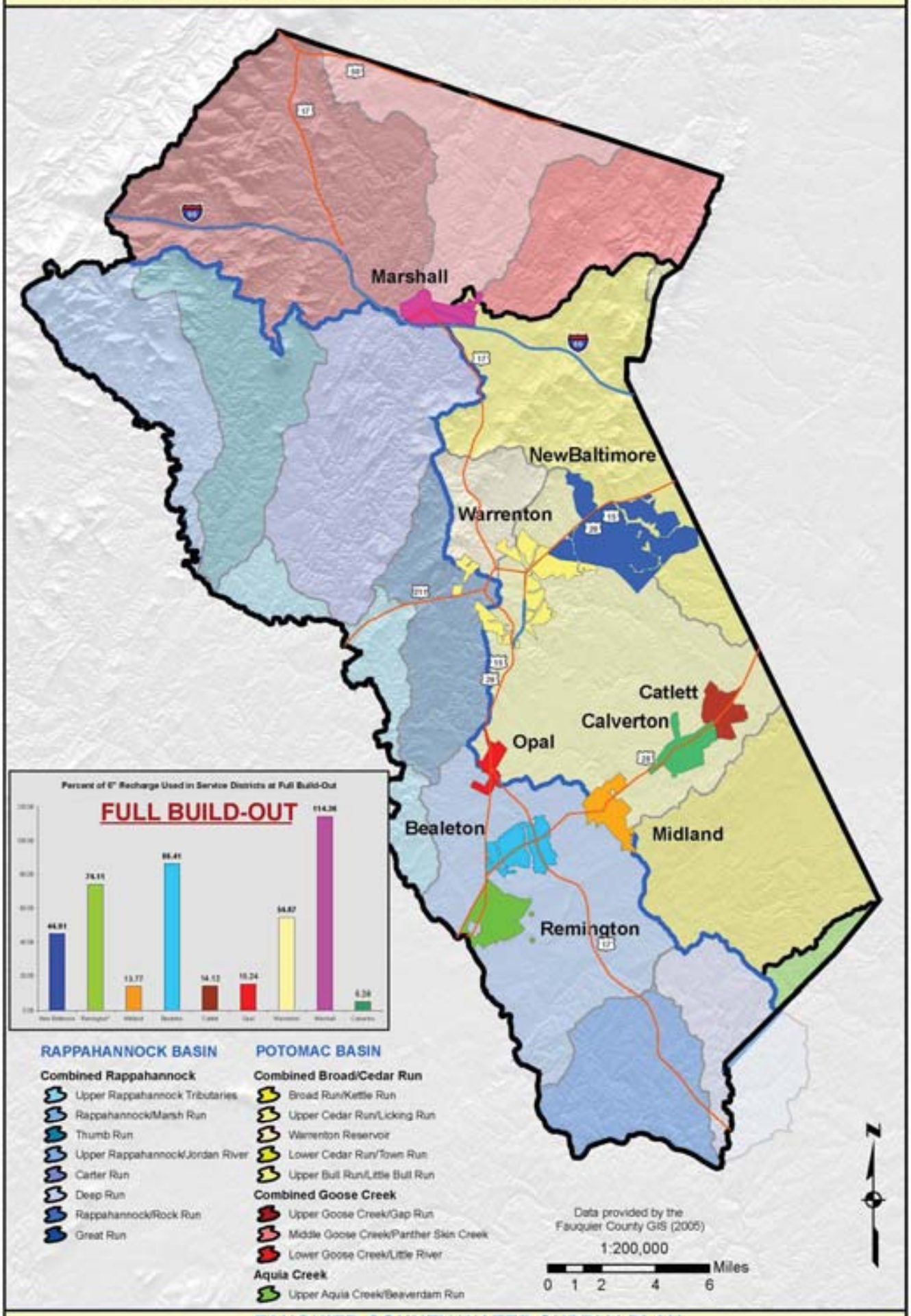


SERVICE DISTRICTS	Percent Population Increase	Population (Full Build-Out)	100g/day	Density Full Build-Out (User/Acre)
New Baltimore	205	13,750	1,375,000	2.01
Remington*	464	8,250	825,000	3.31
Midland	330	1,100	110,000	0.62
Bealeton	312	8,800	880,000	3.86
Catlett	200	858	85,800	0.63
Opal	156	550	55,000	0.68
Warrenton	150	8,080	808,000	2.44
Marshall	433	8,250	825,000	5.11
Calverton	104	399	39,900	0.24
TOTALS	298	59,874	5,003,700	2.70

FAUQUIER COUNTY WATER SUPPLY PLAN

Emery & Garrett Groundwater, Inc.

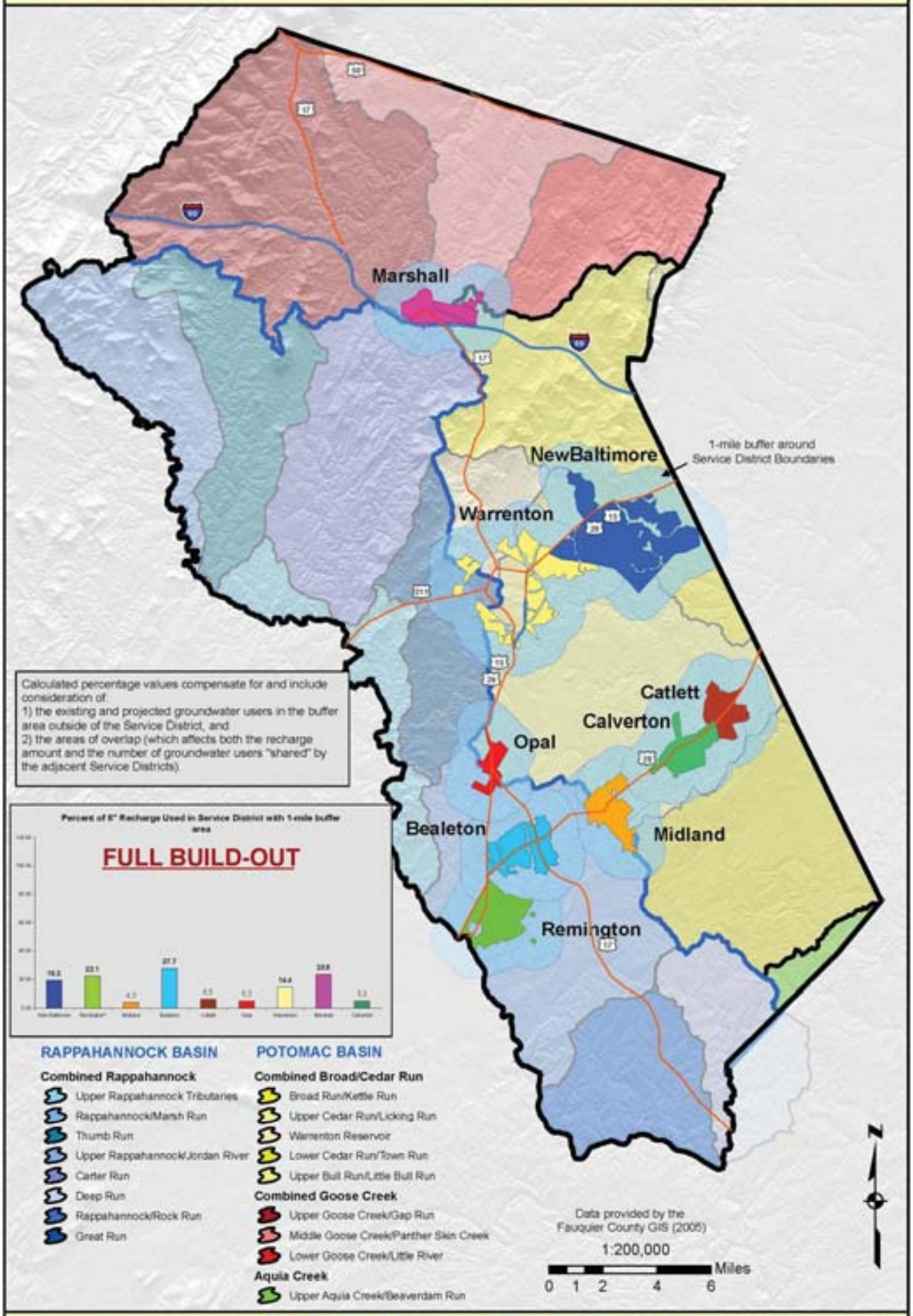
FIGURE 7.1 - PERCENT of RECHARGE USED in SERVICE DISTRICTS



FAUQUIER COUNTY WATER SUPPLY PLAN

Emery & Garrett Groundwater, Inc.

FIGURE 7.2 - PERCENT of RECHARGE USED in SERVICE DISTRICTS



FAUQUIER COUNTY WATER SUPPLY PLAN

Emery & Garrett Groundwater, Inc.

APPENDIX 1

EXISTING WATER SOURCE AND WATER USE DATA

DATA SUPPLIED BY THE TOWN OF REMINGTON

Local and Regional Water Supply Planning
Existing Water Source and Water Use Data Entry Template

Local or Regional Plan:	Local ☐ Regional ☑
Political Locality(s):	Remington in Fauquier County and towns of Remington and the Plains
Locality FIPS Code(s):	
Planning Area Population:	
River Basin(s):	Rappahannock
River Sub-basin(s):	Rapidan-Upper Rappahannock (02080103)
Contact Name:	James Steward
Title:	Town Superintendent /Water Operator
Mailing Address:	203 East Main St.
City and Zip Code:	Remington, VA 22734
Phone:	540 439 3220
Fax:	
E-mail:	townofremington@verizon .net

The following data entry spreadsheets will allow you to enter information regarding the existing water source (9 VAC 25-780-70) and existing water use (9 VAC 25-780-80) water supply planning criteria.

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Community Water Systems: Groundwater Sources
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List all well information for community water systems using groundwater. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark well locations on associated map.

COMMUNITY WATER SYSTEMS (MUNCIPAL & PRIVATE) USING GROUND WATER (9 VAC 25-780-70 B)

PWSID	Water System Name	VDH Permitted System Capacity (gpd)	Calculated VDH Permitted System Capacity (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Withdrawal Design Capacity: **AVERAGE DAILY** (gpd)	Withdrawal Design Capacity: **AVERAGE DAILY** (MGD)	Withdrawal Design Capacity: **MAXIMUM DAILY** (gpd)	Withdrawal Design Capacity: **MAXIMUM DAILY** (MGD)	GROUNDWATER MANAGEMENT AREA WELLS: DEQ Permitted **Monthly Withdrawal** (MGD)	DEQ Permitted **Annual Withdrawal** (MGD)	**Notes or Comments** **(This may include references to maps, data sources, data gaps, etc.)**
6061500	Town of Remington 2009	162,800	0.16							0.00		0.00	N/A	N/A	
			0.00	Well #1	580	63	510	6	72,000.00	0.07	81,000.00	0.08	N/A	N/A	inactive re-drilled to listed depth 2008, became arsenic concentrated at time of re-drill
			0.00	Well #2	281	51.5	165 to 166 173 to 174 187 to 189 210 to 211 227 to 228 247 to 250	6	97,200.00	0.10	109,350.00	0.11	N/A	N/A	ACTIVE 2009 for top-off, back up well. Average draw = gpm x 60 min.x 12hr.run time Max. draw = gpm.x 60 min. x 13.5 hrs. run time
			0.00	Well #3 a.k.a. Lees,s Glen	353	57	315 165'-173' 231'-235' 270'-276' 327'-330'	8	86,400.00	0.09	97,200.00	0.10	N/A	N/A	Primary well 2009 Average Draw = GPM x 60 min. x 12 hr. run time. Max Draw = GPM. X 60 min. x13.5 hr run time.
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
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			0.00							0.00		0.00			
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			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			

Community Water Systems: Groundwater Sources
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List all well information for community water systems using groundwater. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark well locations on associated map.

COMMUNITY WATER SYSTEMS (MUNCIPAL & PRIVATE) USING GROUND WATER (9 VAC 25-780-70 B)

PWSID	Water System Name	VDH Permitted System Capacity (gpd)	Calculated VDH Permitted System Capacity (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Withdrawal Design Capacity: **AVERAGE DAILY** (gpd)	Withdrawal Design Capacity: **AVERAGE DAILY** (MGD)	Withdrawal Design Capacity: **MAXIMUM DAILY** (gpd)	Withdrawal Design Capacity: **MAXIMUM DAILY** (MGD)	GROUNDWATER MANAGEMENT AREA WELLS: DEQ Permitted **Monthly Withdrawal** (MGD)	DEQ Permitted **Annual Withdrawal** (MGD)	**Notes or Comments (This may include references to maps, data sources, data gaps, etc.)**
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
Existing Source Totals - for all CWS's using wells (MGD)			0.16							0.26		0.29	0.00	0.00	

Community Water Systems: Reservoir Sources
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List reservoir information for all community water systems using surface water reservoirs. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark reservoirs and intakes on associated map.

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE) USING SURFACE WATER RESERVOIRS (9 VAC 25-780-70 C)

Is your water system comprised of interconnected reservoirs? ☐ **Yes** ☐ **No**

If YES, designate which reservoirs and which intakes constitute a system. Report the drainage area and amount of storage available for water supply from each reservoir independently. Designed maximum daily withdrawal and the safe yield may be reported for the entire system or subsets of the system.

PWSID #	Water System Name	Reservoir Name	Reservoir watershed **Basin/ Sub-basin**	Reservoir watershed **Drainage Area** (square miles)	On-Stream Storage Available for Water Supply (gallons)	On-Stream Storage Available for Water Supply (MG)	**DESIGN CAPACITY:** **Average Daily** Withdrawal (gpd)	**Average Daily** Withdrawal (MGD)	**Maximum Daily** Withdrawal (gpd)	**Maximum Daily** Withdrawal (MGD)	Associated **Water Treatment Plant** (gpd)	Associated **Water Treatment Plant** (MGD)	Reservoir **Safe Yield** (MGD)	VDH Permitted System Capacity (gpd)	VDH Permitted System Capacity (MGD)	Limitations on Withdrawal Permit	**Notes or Comments** **(This may include references to maps, data sources, data gaps, etc.)**
	not applicable					0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
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						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
Existing Source Totals - for all CWS's using surface water reservoirs (MG or MGD)						**0.00**		**0.00**		**0.00**		**0.00**			**0.00**		

Community Water Systems: Stream Intake and Spring Sources
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List intake information for all community water systems using stream intakes. Additionally, include a qualitative description of existing in-stream beneficial uses within the planning area or outside the planning area that may be affected by point of stream withdrawal. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark intakes on associated map.

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE) USING STREAM INTAKES* (9 VAC 25-780-70 D, - 80 B10)

*** For municipal or private community water system(s) using springs, list applicable information for your spring sources below.**

PWSID #	Water System Name	Stream, River, or Spring Name	Basin / Sub-basin	Intake Drainage Area (square miles)	DESIGN CAPACITY: Average Daily Withdrawal (gpd)	Average Daily Withdrawal (MGD)	Maximum Daily Withdrawal (gpd)	Maximum Daily Withdrawal (MGD)	Pump Station (gpd)	Pump Station (MGD)	Water Treatment Plant (gpd)	Water Treatment Plant (MGD)	Safe Yield of Stream (MGD)	Lowest Daily Flow of Record (cfs)	VDH Permitted Capacity (gpd)	VDH Permitted Capacity (MGD)	Limitations on Withdrawal Permit	EXISTING INSTREAM BENEFICIAL USES: Within Planning Area	Outside Planning Area	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
	not applicable					0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
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						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
Existing Source Totals - for all CWS's using stream intakes &/or springs (MGD)						**0.00**		**0.00**		**0.00**		**0.00**				**0.00**				

Water Purchases Outside Planning Area
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List information regarding the amount of ground or surface water to be purchased from water supply systems outside the geographic boundaries of the planning area (9 VAC 25-780-70G). Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map.

AMOUNT OF GROUND OR SURFACE WATER TO BE PURCHASED FROM WATER SUPPLY SYSTEMS OUTSIDE THE GEOGRAPHIC BOUNDARIES OF THE PLANNING AREA (9 VAC 25-780-70G)

PWSID#, Community Water System Name	Source:		Amount to be Purchased:				Contract Limitations:				
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	**Maximum Daily** (gpd)	**Maximum Daily** (MGD)	**Average Annual** (gpd)	**Average Annual** (MGD)	Supplier(s) Name(s) (PWSID #)	Contract or Agreement Terms	Recipient(s) **or** Area(s) Served	Contract Limits	Other
not applicable				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
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				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
Total Amount of Water To Be Purchased Outside the Planning Area (MGD):				**0.00**		**0.00**					

List information for the amount of ground or surface water available to be purchased from outside the geographic boundaries of the planning area from water supply systems with the capacity to draw more than 300,000 gallons per month (9 VAC 25-780-70H). Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map.

AMOUNT OF WATER AVAILABLE TO BE PURCHASED, OUTSIDE THE PLANNING AREA, FROM ANY SOURCE WITH CAPACITY TO WITHDRAW MORE THAN 300,000 GALLONS PER MONTH OF SURFACE OR GROUND WATER (9 VAC 25-780-70H)

PWSID#, Community Water System Name	Source:		Amount Available to be Purchased:				Contract Limitations:				
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	**Maximum Daily** (gpd)	**Maximum Daily** (MGD)	**Average Annual** (gpd)	**Average Annual** (MGD)	Supplier(s) Name(s) (PWSID #)	Contract or Agreement Terms	Recipient(s) **or** Area(s) Served	Contract Limits	Other
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
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				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
Total Amount of Water Available for Purchase Outside the Planning Area (MGD):				**0.00**		**0.00**					

Source Water Assessments and Wellhead Protection
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Note findings and recommendations from source water assessment plans and/or wellhead protection programs. Reference sources and note any assumptions. If unable to find data or data not applicable, note accordingly. If applicable, mark program/plan areas on associated map.

FINDINGS AND RECOMMENDATIONS FROM APPLICABLE SOURCE WATER ASSESSMENT PLANS OR WELLHEAD PROTECTION PROGRAMS (9 VAC 25-780-70K)

Locality Name	Source Water Assessment Plan(s):		Wellhead Protection Program(s):	
	Date of Plan	Summary of Findings and Recommendations	Date of Program	Summary of Findings and Recommendations
Town of Remington	2009	by Olver low susceptibility, no industry in area and deep wells		

Community Water Systems: Withdrawal Information
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 3 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER: ***water withdrawal information*** **(9 VAC 25-780-80 B1-B3)**

YEAR: 2009

PWSID	Water System Name	Source Name	Population Served	Number of Connections	WITHDRAWAL: Average Daily (MGD)	WITHDRAWAL: Maximum Daily (MGD)	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
Municipal Systems							
6061500	Town of Remington	2 active gw wells	1,482	598	0.073	0.177	VDH and Town have discreapncies on population served,check more
		Well #1			0	0	
6061500		Well #2	1,482	598	0.0118	0.107	Average day Draw =total usage / 365 days. Max day draw data was taking from DEQ sheets
		Well #3 Lee's glen	1,482	598	0.7405	0.133	Average day Draw =total usage / 365 days. Max day draw data was taking from DEQ sheets

Community Water Systems: Withdrawal Information
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 3 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER: ***water withdrawal information*** **(9 VAC 25-780-80 B1-B3)**

YEAR: 2009					**WITHDRAWAL:**		
PWSID	Water System Name	Source Name	Population Served	Number of Connections	**Average Daily** (MGD)	**Maximum Daily** (MGD)	**Notes or Comments** (This may include references to maps, data sources, data gaps, etc.)
Municipal Community Water System Totals:			4,446	1,794	0.83		

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 3 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER: ***water withdrawal information*** **(9 VAC 25-780-80 B1-B3)**

YEAR: 2009

PWSID	Water System Name	Source Name	Population Served	Number of Connections	WITHDRAWAL: Average Daily (MGD)	WITHDRAWAL: Maximum Daily (MGD)	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
		Private Systems					
	Private Community Water System Totals:		0	0	0.00		
	Municipal and Private Community Water System Totals:		4,446	1,794	0.83		

CWS Annual Average and Average Monthly Water Use
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map.
Note the data reference year in Row 6 and fill out a separate spreadsheet for each data year.

Community Water Systems Using Ground and Surface Water: ***annual average and average monthly water use*** **(9 VAC 25-780-80 B4)**

YEAR 2009	PWSID # 6061500 Town of Remington			PWSID # System Name			PWSID # System Name			PWSID # System Name			PWSID # System Name			PWSID # System Name			PWSID # System Name			Locality or Region Total Water Use (MG/Mo)	Locality or Region Total Average Monthly by Month (MGD)
	Source (GW)			Source (GW or SW)			Source (GW or SW)			Source (GW or SW)			Source (GW or SW)			Source (GW or SW)			Source (GW or SW)				
	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)		
January	2,640,300.00	2.64	0.085		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.64	0.09
February	2,398,000.00	2.40	0.086		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.40	0.09
March	2,593,000	2.59	0.084		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.59	0.08
April	2,415,500	2.42	0.081		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.42	0.08
May	2,669,300.00	2.67	0.086		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.67	0.09
June	2,676,500.00	2.68	0.089		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.68	0.09
July	2,571,900.00	2.57	0.083		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.57	0.08
August	2,534,400.00	2.53	0.082		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.53	0.08
September	2,548,600.00	2.55	0.085		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.55	0.08
October	2,877,300.00	2.88	0.093		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.88	0.09
November	2,422,100.00	2.42	0.081		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.42	0.08
December	2,608,200.00	2.61	0.084		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	2.61	0.08
Total Annual (MG)		30.96			0.00			0.00			0.00			0.00			0.00			0.00		30.96	
Average Monthly (MG/Mo)		2.58			0.00			0.00			0.00			0.00			0.00			0.00		2.58	
Average Daily (MGD)		0.085			0.000			0.000			0.000			0.000			0.000			0.000		0.085	
NOTES or COMMENTS:	fix estimates for March april for well#3 based on EDWrD																						

Worksheet Instructions:
1) Enter the data year and your system name.
2) Enter source code (GW = Ground Water; SW = Surface Water).
3) Enter monthly water use data in gallons.
4) Enter notes or comments (this may include references to maps, data sources, data gaps, etc.) in the approriate cells.
5) If you need additional data entry columns, "unhide" columns V through AU.

Community Water Systems: Peak Day Use
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 6 and fill out a separate spreadsheet for each data year.**

Community Water Systems Using Ground and Surface Water: ***peak day use*** **(9 VAC 25-780-80 B5)**

YEAR 2009	6061500 Town of Remington		PWSID # System Name		PWSID # System Name		PWSID # System Name		PWSID # System Name		PWSID # System Name	
	Source (GW)		Source (GW or SW)		Source (GW or SW)		Source (GW or SW)		Source (GW or SW)		Source (GW or SW)	
	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)
January	126,300	0.126		0.000		0.000		0.000		0.000		0.000
February	117,300	0.117		0.000		0.000		0.000		0.000		0.000
March	109,000	0.109		0.000		0.000		0.000		0.000		0.000
April	106,000	0.106		0.000		0.000		0.000		0.000		0.000
May	108,600	0.109		0.000		0.000		0.000		0.000		0.000
June	118,600	0.119		0.000		0.000		0.000		0.000		0.000
July	133,600	0.134		0.000		0.000		0.000		0.000		0.000
August	121,100	0.121		0.000		0.000		0.000		0.000		0.000
September	115,500	0.116		0.000		0.000		0.000		0.000		0.000
October	176,700	0.177		0.000		0.000		0.000		0.000		0.000
November	96,800	0.097		0.000		0.000		0.000		0.000		0.000
December	122,500	0.123		0.000		0.000		0.000		0.000		0.000
NOTES or COMMENTS:	Fire hydrant testing and flushing during October resulted inannual max day											

Worksheet Instructions:

1) Enter the data year and your system name.

2) Enter source code (GW = Ground Water; SW = Surface Water).

3) Enter peak day water use for each month in gallons per day (gpd). If you only have peak day data for your peak month (one month), enter that value in the appropriate cell.

4) If you do not have daily data for your system, but know your peak month then estimate your peak day use by using the following equation and enter this information into the applicable month cell above.

Peak Day "Raw" Water Use (gpd) =
Average Daily Withdrawal* (MGD) X 10^6 (g/MG) X 1.5 Peaking Factor
**from worksheet "80 B1-B3 CWS Use"*

5) Enter notes or comments (this may include references to maps, data sources, data gaps, etc.) in the approriate cells.

6) If you need additional data entry columns, "unhide" columns K through AN.

Community Water Systems: Disaggregated Use
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

For each community water system included in the water plan, include an estimate of the disaggregated annual average amount of water used in categories of use appropriate for the system. Reference sources and note any assumptions regarding calculations. **If unable to find data or data not applicable, note accordingly in the Notes/Comments Column and highlight applicable cells. Note the data reference year in Row 4 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE): DISAGGREGATED ANNUAL AVERAGE WATER USE AMOUNTS (9 VAC 25-780-80 B9)

YEAR: 2009

			USAGE CATEGORIES:																	
																	Sales to Other CWS's:			Notes or Comments
PWSID	Water System Name	System Total (MGD)	Residential (gpd)	Residential (MGD)	Commercial Institutional Light Industrial C/L (gpd)	Commercial Institutional Light Industrial C/L (MGD)	Heavy Industrial (gpd)	Heavy Industrial (MGD)	Military (gpd)	Military (MGD)	Other (gpd)	Other (MGD)	Production Processes (gpd)	Production Processes (MGD)	Unaccounted for Losses (gpd)	Unaccounted for Losses (MGD)	Amount Sold (gpd)	Amount Sold (MGD)	System Name	(This may include references to maps, data sources, data gaps, etc.)
6061500	Town of Remington	29.054	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	27,727,963.00	27.728	0.00	0.000	1,325,590.00	1.326	0.00	0.000	N/A	OTHER refers to combined residential and commercial,institutional Unaccounted water includes fire use, leaks, dead end flushing, theft, There is some use through 2" meters for 1 school and 1 fire department, but it cannot be separated, all other commercial use is minor through smaller meters for 1 restaurant, 1 specialty grocery/deli, shops, 1 drug store, 1 variety store, 1 gas station/convenience store, 2 auto repair, 2 hardware stores, 1 barbershop, 1 bank
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
Total Use By Category in MGD (for All Community Water Systems)		29.054		0.000		0.000		0.000		0.000		27.728		0.000		1.326		0.000		

Use the next six spreadsheets to record existing water source and use information for the self-supplied users in your planning area.

Non-Agricultural, Self-Supplied Users of Surface Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural surface water source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column I, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF SURFACE WATER (9 VAC 25-780-70 E, - 80 B6, and - 80 C)

Water User Name	Waterbody Source Name	Use Category	DESIGN CAPACITY: Average Daily Withdrawal (gpd)	DESIGN CAPACITY: Average Daily Withdrawal (MGD)	DESIGN CAPACITY: Maximum Daily Withdrawals (gpd)	DESIGN CAPACITY: Maximum Daily Withdrawals (MGD)	Limitations on Withdrawal Permit(s)	WATER USE: Estimated **Annual Average** (MGD) Year **2XXX**	Notes or Comments **(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
Within Community Water System (Municipal & Private) Service Areas									
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
Within Community Water System Service Area Totals (MGD):				**0.000**		**0.000**		**0.000**	

Non-Agricultural, Self-Supplied Users of Surface Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural surface water source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column I, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF SURFACE WATER (9 VAC 25-780-70 E, - 80 B6, and - 80 C)

			DESIGN CAPACITY:					WATER USE:	Notes or Comments
Water User Name	Waterbody Source Name	Use Category	**Average Daily** Withdrawal (gpd)	**Average Daily** Withdrawal (MGD)	**Maximum Daily** Withdrawals (gpd)	**Maximum Daily** Withdrawals (MGD)	Limitations on Withdrawal Permit(s)	Estimated **Annual Average** (MGD) Year **2XXX**	**(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
	Outside Community Water System (Municipal & Private) Service Areas								
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
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				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
Outside Community Water System Service Area Totals (MGD):				0.000		0.000		0.000	
Self-Supplied Nonagricultural Users of Surface Water Totals (MGD):				0.000		0.000		0.000	

Non-Agricultural, Self-Supplied Users of Ground Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural groundwater source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column M, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF GROUND WATER (9 VAC 25-780-70 F, - 80 B6, and - 80 C)

		DESIGN CAPACITY:				INDIVIDUAL WELL DATA:						WATER USE:	Notes or Comments
Water User Name	Use Category	**Average Daily** Withdrawals (gpd)	**Average Daily** Withdrawals (MGD)	**Maximum Daily** Withdrawals (gpd)	**Maximum Daily** Withdrawals (MGD)	Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Limitations on Withdrawal Permit(s)	Estimated **Annual Average** (MGD) YEAR **2009**	**(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
Within Community Water System (Municipal & Private) Service Areas													
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
Within CWS Service Area Totals (MGD):			**0.000**		**0.000**							**0.000**	

Non-Agricultural, Self-Supplied Users of Ground Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
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URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural groundwater source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column M, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF GROUND WATER (9 VAC 25-780-70 F, - 80 B6, and - 80 C)

		DESIGN CAPACITY:				INDIVIDUAL WELL DATA:						WATER USE:	Notes or Comments
Water User Name	Use Category	**Average Daily** Withdrawals (gpd)	**Average Daily** Withdrawals (MGD)	**Maximum Daily** Withdrawals (gpd)	**Maximum Daily** Withdrawals (MGD)	Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Limitations on Withdrawal Permit(s)	Estimated **Annual Average** (MGD) YEAR **2009**	**(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
			Outside Community Water System (Municipal & Private) Service Areas										
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
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			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
Outside CWS Service Area Totals (MGD):			0.000		0.000							0.000	
Self-Supplied Nonagricultural Users of Ground Water Totals (MGD):			0.000		0.000							0.000	
Self-Supplied Nonagricultural Users Totals (surface and groundwater in MGD):			0.000		0.000							0.000	

Agricultural, Self-Supplied Users
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List data for all agricultural users who utilize more than 300,000 gallons per month of ground or surface water. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map. **Note the data reference year in Column F, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, AGRICULTURAL USERS > 300,000 GAL/MONTH OF GROUND OR SURFACE WATER (9 VAC 25-780-70 I, -80B7, and -80D)

User Name	SOURCE TYPE:		USE TYPE:		WATER USE:		Notes or Comments
			Irrigation	Nonirrigation	Estimated **Annual Average** (MGD) Year **2XXX**		
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	(Place an "**X**" in appropriate column cell)		Surface Water (MGD)	Ground Water (MGD)	**(Include service area user falls within and any references to maps, data sources, data gaps, etc.)**
Within Community Water System (Municipal & Private) Service Areas							
Within Community Water System Service Area Water Use Totals (MGD):					**0.000**	**0.000**	

Agricultural, Self-Supplied Users
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List data for all agricultural users who utilize more than 300,000 gallons per month of ground or surface water. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map. **Note the data reference year in Column F, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, AGRICULTURAL USERS > 300,000 GAL/MONTH OF GROUND OR SURFACE WATER (9 VAC 25-780-70 I, -80B7, and -80D)

User Name	SOURCE TYPE:		USE TYPE:		WATER USE:		Notes or Comments
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	Irrigation	Nonirrigation	Estimated **Annual Average** (MGD) Year **2XXX**		
			(Place an "**X**" in appropriate column cell)		Surface Water (MGD)	Ground Water (MGD)	**(Include service area user falls within and any references to maps, data sources, data gaps, etc.)**
Outside Community Water System (Municipal & Private) Service Areas							
Outside Community Water System Service Area Water Use Totals (MGD):					**0.000**	**0.000**	
Estimated Total Agricultural Useage By Source (MGD):					**0.000**	**0.000**	

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Estimate well use information for small, self-supplied users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. **Note the data reference year in Row 7.**

ESTIMATED NUMBER OF RESIDENCES AND BUSINESSES THAT ARE SELF-SUPPLIED BY INDIVIDUAL WELLS WITHDRAWING LESS THAN 300,000 GALLONS PER MONTH (9 VAC 25-780-70J); ESTIMATED WATER USE BY SELF-SUPPLIED USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

ESTIMATING SMALL SELF-SUPPLIED USERS							ESTIMATING SMALL SELF-SUPPLIED WATER USE										
	Step 1: Estimate Total Population of Individual Self-Supplied Well Users			Step 2: Estimate Number of Residences and Businesses on Individual Wells			Step 3: Estimate Total Self-Supplied Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4: Estimate Total Self-Supplied Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA					
Locality	Locality Population	Total Population Served by Community Water System(s)	Estimated Population Served by Individual Wells	Locality Specific Population Per Household Factor	Estimated Number of **RESIDENCES** on Wells (Column D ÷ Column E)	Estimated Number of **BUSINESSES** on Wells	Estimated Population Served by Individual Wells	Per Capita Water Use Factor (gal/person/day)	Average Annual Residential Use (gpd) (Column H x Column I)	Average Annual Business Use (gpd) (SSU Business Data)	Estimated Average Annual Use (MGD)	# of Self-Supplied Residences Within Service Area	Locality Specific Population Per Household Factor	Per Capita Water Use Factor (gal/person/day)	Average Annual Residential Use (gpd) (Columns M x N x O)	Average Annual Business Use (gpd) (SSU Business Data)	Estimated Annual Average Use (MGD)
	YEAR **2009**	YEAR **2009**															
Town of Remington town population is 650 service area is larger, some town residents and some service area residents do not use town water	1,580	1,483	97	2.70	36	14	97	0	0		0.000	36	2.70	45	4,392	2,146	0.007
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
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			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
Planning Area Totals:	1,580	1,483	97		36	14	97		0	0	0.000	36			4,392	2,146	0.007

Notes or Comments: (This may include references to maps, data sources, data gaps, etc.)	

Self-Supplied, Individual Well Users: Businesses
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Estimate well use information for small, self-supplied business users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly.
Record the data reference year, from your data sources, in Row 5. **Fill out a separate sheet for each locality in your region.**

ESTIMATED WATER USE BY SELF-SUPPLIED BUSINESS USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

Locality Name
Year: 2009

Use this spreadsheet to fill out columns K and Q on the main "70J, 80B8, 80E SSU" spreadsheet

ESTIMATING SMALL SELF-SUPPLIED BUSINESS WATER USE									
Step 3 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA				
Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column B x Column C)	Estimated Average Annual Business Use (MGD)	Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column G x Column H)	Estimated Average Annual Business Use (MGD)
			0	0.000	**Former Trinity Plastics site 4 tenants:**			0	0.000
			0	0.000	Vacant			0	0.000
			0	0.000	Dave's Moving			0	0.000
			0	0.000	Prestige Stone			0	0.000
			0	0.000	Pipe Plant			0	0.000
			0	0.000	**Leazer Well Drilling**			0	0.000
			0	0.000	**Arbor Tech**			0	0.000
			0	0.000	**Harry's Antiques**			0	0.000
			0	0.000	**11522 11520 N. James Madison St. 2 businesses, one well:**			0	0.000
			0	0.000	Fifield Helm Insurance			0	0.000
			0	0.000	Helm Group -Construction office only			0	0.000
			0	0.000	**11538 N. James Madison St. 2 businesses one well**			0	0.000
			0	0.000	R+H Grocery			0	0.000
			0	0.000	Remington Press			0	0.000
			0	0.000	**Remington Swim Club (seasonal)**			0	0.000
			0	0.000	**Andes Store**			0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
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			0	0.000				0	0.000
			0	0.000				0	0.000

Self-Supplied, Individual Well Users: Businesses
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Estimate well use information for small, self-supplied business users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly.
Record the data reference year, from your data sources, in Row 5. **Fill out a separate sheet for each locality in your region.**

ESTIMATED WATER USE BY SELF-SUPPLIED BUSINESS USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

Locality Name
Year: 2009

Use this spreadsheet to fill out columns K and Q on the main "70J, 80B8, 80E SSU" spreadsheet

ESTIMATING SMALL SELF-SUPPLIED BUSINESS WATER USE									
Step 3 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA				
Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column B x Column C)	Estimated Average Annual Business Use (MGD)	Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column G x Column H)	Estimated Average Annual Business Use (MGD)
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
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			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
Locality Name : Outside Service Area Totals	0		0	0.000	***Locality Name : Within Service Area Totals***	0		0	0.000

Notes or Comments: (This may include references to maps, data sources, data gaps, etc.)	

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Virginia	7,078,515	2.54
Accomack County	38,305	2.45
Albemarle County	79,236	2.44
Alleghany County	12,926	2.46
Amelia County	11,400	2.66
Amherst County	31,894	2.51
Appomattox County	13,705	2.55
Arlington County	189,453	2.15
Augusta County	65,615	2.56
Bath County	5,048	2.34
Bedford County	60,371	2.52
Bland County	6,871	2.43
Botetourt County	30,496	2.56
Brunswick County	18,419	2.47
Buchanan County	26,978	2.46
Buckingham County	15,623	2.52
Campbell County	51,078	2.45
Caroline County	22,121	2.69
Carroll County	29,245	2.36
Charles City County	6,926	2.59
Charlotte County	12,472	2.47
Chesterfield County	259,903	2.73
Clarke County	12,652	2.50
Craig County	5,091	2.45
Culpeper County	34,262	2.68
Cumberland County	9,017	2.55
Dickenson County	16,395	2.42
Dinwiddie County	24,533	2.58
Essex County	9,989	2.46
Fairfax County	969,749	2.74
Fauquier County	55,139	2.75
Floyd County	13,874	2.39
Fluvanna County	20,047	2.59
Franklin County	47,286	2.44
Frederick County	59,209	2.64
Giles County	16,657	2.37
Gloucester County	34,780	2.62
Goochland County	16,863	2.51
Grayson County	17,917	2.31
Greene County	15,244	2.71
Greensville County	11,560	2.51
Halifax County	37,355	2.43
Hanover County	86,320	2.71
Henrico County	262,300	2.39
Henry County	57,930	2.40
Highland County	2,536	2.24

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Isle of Wight County	29,728	2.61
James City County	48,102	2.47
King and Queen County	6,630	2.48
King George County	16,803	2.70
King William County	13,146	2.69
Lancaster County	11,567	2.23
Lee County	23,589	2.41
Loudoun County	169,599	2.82
Louisa County	25,627	2.56
Lunenburg County	13,146	2.39
Madison County	12,520	2.60
Mathews County	9,207	2.32
Mecklenburg County	32,380	2.38
Middlesex County	9,932	2.27
Montgomery County	83,629	2.40
Nelson County	14,445	2.42
New Kent County	13,462	2.65
Northampton County	13,093	2.39
Northumberland County	12,259	2.24
Nottoway County	15,725	2.48
Orange County	25,881	2.50
Page County	23,177	2.46
Patrick County	19,407	2.36
Pittsylvania County	61,745	2.49
Powhatan County	22,377	2.74
Prince Edward County	19,720	2.43
Prince George County	33,047	2.76
Prince William County	280,813	2.94
Pulaski County	35,127	2.32
Rappahannock County	6,983	2.50
Richmond County	8,809	2.40
Roanoke County	85,778	2.41
Rockbridge County	20,808	2.43
Rockingham County	67,725	2.61
Russell County	30,308	2.44
Scott County	23,403	2.35
Shenandoah County	35,075	2.42
Smyth County	33,081	2.37
Southampton County	17,482	2.53
Spotsylvania County	90,395	2.87
Stafford County	92,446	3.01
Surry County	6,829	2.61
Sussex County	12,504	2.41
Tazewell County	44,598	2.40
Warren County	31,584	2.57
Washington County	51,103	2.36

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Westmoreland County	16,718	2.43
Wise County	40,123	2.44
Wythe County	27,599	2.36
York County	56,297	2.78
Alexandria city	128,283	2.04
Bedford city	6,299	2.26
Bristol city	17,367	2.18
Buena Vista city	6,349	2.38
Charlottesville city	45,049	2.27
Chesapeake city	199,184	2.79
Clifton Forge city	4,289	2.22
Colonial Heights city	16,897	2.37
Covington city	6,303	2.22
Danville city	48,411	2.27
Emporia city	5,665	2.43
Fairfax city	21,498	2.61
Falls Church city	10,377	2.31
Franklin city	8,346	2.39
Fredericksburg city	19,279	2.09
Galax city	6,837	2.27
Hampton city	146,437	2.49
Harrisonburg city	40,468	2.53
Hopewell city	22,354	2.43
Lexington city	6,867	2.06
Lynchburg city	65,269	2.30
Manassas city	35,135	2.92
Manassas Park city	10,290	3.16
Martinsville city	15,416	2.27
Newport News city	180,150	2.50
Norfolk city	234,403	2.45
Norton city	3,904	2.23
Petersburg city	33,740	2.38
Poquoson city	11,566	2.75
Portsmouth city	100,565	2.51
Radford city	15,859	2.25
Richmond city	197,790	2.21
Roanoke city	94,911	2.20
Salem city	24,747	2.32
Staunton city	23,853	2.19
Suffolk city	63,677	2.69
Virginia Beach city	425,257	2.70
Waynesboro city	19,520	2.31
Williamsburg city	11,998	2.07
Winchester city	23,585	2.28

DATA SUPPLIED BY VIRGINIA DEPARTMENT OF HEALTH

Local and Regional Water Supply Planning
Existing Water Source and Water Use Data Entry Template

Local or Regional Plan:	Local ☐ Regional ☐
Political Locality(s):	fauquier county private community WS 02_10_2009
Locality FIPS Code(s):	
Planning Area Population:	
River Basin(s):	Potomac - Shenandoah
	Rappahannock
River Sub-basin(s):	Middle Potomac - Anacostia - Occoquan (02070010)
	Rapidan-Upper Rappahannock (02080103)
Contact Name:	
Title:	
Mailing Address:	
City and Zip Code:	
Phone:	
Fax:	
E-mail:	

The following data entry spreadsheets will allow you to enter information regarding the existing water source (9 VAC 25-780-70) and existing water use (9 VAC 25-780-80) water supply planning criteria.

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Community Water Systems: Groundwater Sources
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List all well information for community water systems using groundwater. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark well locations on associated map.

COMMUNITY WATER SYSTEMS (MUNCIPAL & PRIVATE) USING GROUND WATER (9 VAC 25-780-70 B)

PWSID	Water System Name	VDH Permitted Capacity (Connections)	VDH Permitted Capacity (Persons)	VDH Permitted System Capacity (gpd)	Calculated VDH Permitted System Capacity (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Withdrawal Design Capacity: **AVERAGE DAILY** (gpd)	Withdrawal Design Capacity: **AVERAGE DAILY** (MGD)	Withdrawal Design Capacity: **MAXIMUM DAILY** (gpd)	Withdrawal Design Capacity: **MAXIMUM DAILY** (MGD)	GROUNDWATER MANAGEMENT AREA WELLS: DEQ Permitted **Monthly Withdrawal** (MGD)	DEQ Permitted **Annual Withdrawal** (MGD)	**Notes or Comments (This may include references to maps, data sources, data gaps, etc.)**
6061125	Drysdale subdivision				0.000	Well 1	N.I.	N.I.	N.I.	6	5,750.00	0.006	5,750.00	0.006	N.A.	N.A.	well apparent capacity no greater than 12 gpm (2002), Private, NO well log in VDH file. **Used for peak periods, back up and emergency use.** Historically this well supported: 23 Connections at 250 gpCd. (estimated)
6061125	Drysdale subdivision				0.000	Well 2	165	50	WB Zone 60 to 128 ft bls	6	9,599.98	0.010	15,000.00	0.015	N.A.	N.A.	well apparent capacity 12 gpm (2002) based on 1 hour test. Grandfathered: 27 connections based on past performance Dominion Well & Pump well log available at VDH
6061125	**Drysdale subdivision**	**27**	NA	10,797	0.011	**System total**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**9,599.98**	0.010	**15,000.00**	0.015	N.A.	N.A.	re. MAX DAILY Capacity: 2008 actual avg daily use over a multiday peak period (May) was 7000 gpd. (Made copies of year 2008 oper logs.) MAX DAILY Withdrawal Design Capacity is a GUESS based on operating both wells, which we don't know if that is appropriate in current configuration; or operating Well #2 for 21 hours (instead of 13.3 hours). Private System since pre-1978, grandfathered by VDH - Permitted System Capacity is as 27 connections - estimated capacity in gpd is as a monthly average.
6061020	**Baldwin Ridge Water System**			**4800**	0.005	**WELL lot: behind 5396 Dumfries Road**	**97**	**52**	**72 to 87 ft bls**	**6**	**3,000**	0.00	**4,800**	0.005	N.A.	N.A.	Leazer Pump & Well Inc well log from 1965 available at VDH. Yield over 8 hours less than 30 gpm. Installed pump capacity is 25 gpm. Grandfathered: 12 connections based on past performance. Permitted Capacity in gpd (estimated per VDH) 250gpCd X12 Connections X 1.6
					0.000							0.00		0.00			
6061665	**Waterloo Estates**			64000	0.064						64,000	0.064	64,000	0.064			
6061665	Waterloo Estates				0.000	Well 1	430	64		6	51,072.00	0.05		0.00			well #1 = 13 gpm but is INACTIVE or Individual, not hooked up to drinkinking water distribution system but still used for irrigating entryway landscaping??
					0.000	Well 2	405	57.5		6		0.00		0.00			9 gpm 232 ft bls pumping wsl, 1987 48 hr

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COMMUNITY WATER SYSTEMS (MUNCIPAL & PRIVATE) USING GROUND WATER (9 VAC 25-780-70 B)

PWSID	Water System Name	VDH Permitted Capacity (Connections)	VDH Permitted Capacity (Persons)	VDH Permitted System Capacity (gpd)	Calculated VDH Permitted System Capacity (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Withdrawal Design Capacity: **AVERAGE DAILY** (gpd)	Withdrawal Design Capacity: **AVERAGE DAILY** (MGD)	Withdrawal Design Capacity: **MAXIMUM DAILY** (gpd)	Withdrawal Design Capacity: **MAXIMUM DAILY** (MGD)	GROUNDWATER MANAGEMENT AREA WELLS: DEQ Permitted **Monthly Withdrawal** (MGD)	DEQ Permitted **Annual Withdrawal** (MGD)	**Notes or Comments (This may include references to maps, data sources, data gaps, etc.)**
					0.000	**Well 3**	680	57		6	6,384.00	0.01	11,520	0.01			8 gpm 77.5 ft bls pumping wsl, 48 hr 1988
					0.000	**Well 9**	335	54		6	7,182.00	0.01	12,960	0.01			9 gpm, 121.5 ft bls pumping wsl, 48 hr 1988
					0.000	**Well 10**	305	63		6	9,576.00	0.01	17,280	0.02			12 gpm 182 ft bls pumping wsl
					0.000	Well 11	305	90		6		0.00		0.00			31 gpm 179 ft bls pumping wsl 48 hr 1988 ABANDONED 2008 may have decreased to 2 gpm
6061665	Waterloo Estates				0.000							0.00		0.00			Since 1994, well yields 164 ERC or 65,600gpd without #1 : 66*2 132 ERC 132*1440/400 < 64000 gpd limits (i.e.<150 gpd storage)
					0.000							0.00		0.00			well #11 was abandoned, well #14 was renamed #11 7/2008, wells 15 16 added to map
	Waterloo Estates				0.000	**Well 14 called 11 2008**	305	67	78-82 115-120 158-162	8	27,930.00	0.03	50,400	0.05			40 gpm actual, **35 gpm** operating
					0.000	Well 15	255	62		8		0.00		0.00			35 gpm
					0.000	Well 16	255	61 to BRx		6		0.00		0.00			23 gpm
6061114	**Fauquier Springs Clubhouse Complex Facilities and Residences**			**29,600**	0.030							0.00		0.00			data entered 4-27-2010 referenced the following copies that we have for appendices= copies EDS 1996, SSR 2003 and operations rpt2008-09
					0.000	Well #1	265				29526.00	0.03	29,600.00	0.03			61 gpm well 37 gpm pump cap.
					0.000							0.00		0.00			
6061150	**Marsh Run MHP**	**400 connections**		**120,000**	0.120						196,000 gpd wells 160,000gpd pumps (13.3 hrs) 289,440 gpd (24 hours)	#VALUE!		0.00			**blending to mitigate Arsenic** have EDS 2004 copy it again for denise probably in Culpeper basin svc area maps available system capacity limited by storage to 120,000 gpd ??QW?or rate? exceedances reported in 1990's
	Marsh Run MHP				0.000	Well 3 (Ball Field Well)	400	63		10 hole 6 casing	35,910	0.04		0.00			45 gpm well yield (1991) 45 gpm pump yield
					0.000				160 - 165	6		0.00		0.00			well construction log found at VDH (1987)
					0.000				220 - 225	6		0.00		0.00			70 gpm driller's yield
					0.000				370 - 375	6		0.00		0.00			15' to 400' bls "slate", 0 ppb arsenic
					0.000							0.00		0.00			
	Marsh Run MHP				0.00	Well 4 (White Property)	245	58		13.5 cased		0.00		0.00			14 ppb arsenic could not find well construction log, ca 1987 - 1991 probably in culpeper basin meta seds w/intrusive (check)
					0.00				58 - 245	8	124,488	0.12		0.00			200 gpm well yield (48 hr - 1990)) 156 gpm pump
					0.00							0.00		0.00			Have MRMHP SSR and EDS
					0.00							0.00		0.00			

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COMMUNITY WATER SYSTEMS (MUNCIPAL & PRIVATE) USING GROUND WATER (9 VAC 25-780-70 B)

PWSID	Water System Name	VDH Permitted Capacity (Connections)	VDH Permitted Capacity (Persons)	VDH Permitted System Capacity (gpd)	Calculated VDH Permitted System Capacity (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Withdrawal Design Capacity: **AVERAGE DAILY** (gpd)	Withdrawal Design Capacity: **AVERAGE DAILY** (MGD)	Withdrawal Design Capacity: **MAXIMUM DAILY** (gpd)	Withdrawal Design Capacity: **MAXIMUM DAILY** (MGD)	GROUNDWATER MANAGEMENT AREA WELLS: DEQ Permitted **Monthly Withdrawal** (MGD)	DEQ Permitted **Annual Withdrawal** (MGD)	**Notes or Comments (This may include references to maps, data sources, data gaps, etc.)**
6061055	Blue Ridge Christian Home		59 persons		0.00	Well	160	25	VDH N.I.	6		0.00		0.00	N.A.	N.A.	1991, 2003 EDSs (sewered) Country Water Systems operates (2009) 20 gpm 2 hr pump test 35 residents 24 staff arsenic 7 ppb FCWSA Bealeton hook-up being considered if re-zone and expand
					0.00							0.00		0.00			
6061090	Lakeway Subdivision	12	25		0.00							0.00		0.00			K&S Enterprises new operator Total coliform contamination 5 years ago - tank is issue inside FCWSA New Baltimore SA, interconnection to FCWSA is cost prohibitive 2009
					0.00							0.00		0.00			
					0.00							0.00		0.00			
					0.00							0.00		0.00			
					0.00							0.00		0.00			
					0.00							0.00		0.00			
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					0.00							0.00		0.00			
					0.00							0.00		0.00			
					0.00							0.00		0.00			
					0.00							0.00		0.00			
					0.00							0.00		0.00			
					0.00							0.00		0.00			
Existing Source Totals - for all CWS's using wells (MGD)					**0.23**							**#VALUE!**		**0.23**	**0.00**	**0.00**	

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COMMUNITY WATER SYSTEMS (MUNCIPAL & PRIVATE) USING GROUND WATER (9 VAC 25-780-70 B)

PWSID	Water System Name	VDH Permitted System Capacity (gpd)	Calculated VDH Permitted System Capacity (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Withdrawal Design Capacity: **AVERAGE DAILY** (gpd)	Withdrawal Design Capacity: **AVERAGE DAILY** (MGD)	Withdrawal Design Capacity: **MAXIMUM DAILY** (gpd)	Withdrawal Design Capacity: **MAXIMUM DAILY** (MGD)	GROUNDWATER MANAGEMENT AREA WELLS: DEQ Permitted **Monthly Withdrawal** (MGD)	DEQ Permitted **Annual Withdrawal** (MGD)	**Notes or Comments** **(This may include references to maps, data sources, data gaps, etc.)**
6061125	Drysdale subdivision		0.000	Well 1	N.I.	N.I.	N.I.	6	5,750.00	0.006	5,750.00	0.006	N.A.	N.A.	well apparent capacity no greater than 12 gpm (2002), Private, NO well log in VDH file. Used for peak periods, back up and emergency use. Historically this well supported: 23 Connections at 250 gpCd. (estimated)
6061125	Drysdale subdivision		0.000	Well 2	165	50	WB Zone 60 to 128 ft bls	6	9,599.98	0.010	15,000.00	0.015	N.A.	N.A.	well apparent capacity 12 gpm (2002) based on 1 hour test. Grandfathered: 27 connections based on past performance Dominion Well & Pump well log available at VDH
6061125	**Drysdale subdivision**	**10,797**	0.011	**System total**	**N.A.**	**N.A.**	**N.A.**	**N.A.**	**9,599.98**	0.010	**15,000.00**	0.015	N.A.	N.A.	re. MAX DAILY Capacity: 2008 actual avg daily use over a multiday peak period (May) was 7000 gpd. (Made copies of year 2008 oper logs.) MAX DAILY Withdrawal Design Capacity is a guess based on operating both wells, which we don't know if that is appropriate
6061020	**Baldwin Ridge Water System**	**4800**	0.005	**WELL lot: behind 5396 Dumfries Road**	**97**	**52**	**72 to 87 ft bls**	**6**	**3,000**	0.00	**4,800**	0.005	N.A.	N.A.	Leazer Pump & Well Inc well log from 1965 available at VDH. Yield over 8 hours less than 30 gpm. Installed pump capacity is 25 gpm. Grandfathered: 12 connections based on past performance. Permitted Capacity in gpd (estimated per VDH) 250gpCd X12 Connect
			0.000							0.00		0.00			
6061665	Waterloo Estates	64000	0.064	Well 1	430	64		6		0.00		0.00			well #1 = 13 gpm but is INACTIVE or Individual, not hooked up to drinking water distribution system but still used for irrigating entryway landscaping??
			0.000	Well 2	405	57.5		6		0.00		0.00			9 gpm 232 ft bls pumping wsl, 1987 48 hr

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COMMUNITY WATER SYSTEMS (MUNCIPAL & PRIVATE) USING GROUND WATER (9 VAC 25-780-70 B)

PWSID	Water System Name	VDH Permitted System Capacity (gpd)	Calculated VDH Permitted System Capacity (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Withdrawal Design Capacity: **AVERAGE DAILY** (gpd)	Withdrawal Design Capacity: **AVERAGE DAILY** (MGD)	Withdrawal Design Capacity: **MAXIMUM DAILY** (gpd)	Withdrawal Design Capacity: **MAXIMUM DAILY** (MGD)	GROUNDWATER MANAGEMENT AREA WELLS: DEQ Permitted **Monthly Withdrawal** (MGD)	DEQ Permitted **Annual Withdrawal** (MGD)	**Notes or Comments** **(This may include references to maps, data sources, data gaps, etc.)**
			0.000	Well 3	680	57		6		0.00		0.00			8 gpm 77.5 ft bls pumping wsl, 48 hr 1988
			0.000	Well 9	335	54		6		0.00		0.00			9 gpm, 121.5 ft bls pumping wsl, 48 hr 1988
			0.000	Well 10	305	63		6		0.00		0.00			12 gpm 182 ft bls pumping wsl
			0.000	Well 11	305	90		6		0.00		0.00			31 gpm 179 ft bls pumping wsl 48 hr 1988 ABANDONED 2008 may have decreased to 2 gpm
6061665	Waterloo Estates		0.000							0.00		0.00			Since 1994, well yields 164 ERC or 65,600gpd without #1 : 66*2 132 ERC 132*1440/400 < 64000 gpd limits (i.e.<150 gpd storage)
			0.000							0.00		0.00			well #11 was abandoned, well #14 was renamed #11 7/2008, wells 15 16 added to map
	Waterloo Estates		0.000	Well 14 called 11 2008	305	67	78-82 115-120 158-162	8		0.00		0.00			40 gpm actual, 35 gpm operating
			0.000	Well 15	255	62		8		0.00		0.00			35 gpm
			0.000	Well 16	255	61 to BRx		6		0.00		0.00			23 gpm
6061114	Fauquier Springs Clubhouse Complex Facilities and Residences		0.000							0.00		0.00			have copies EDS 1996, SSR 2003 and operations rpt2008-09
			0.000							0.00		0.00			
			0.000							0.00		0.00			
6061150 Amended	Marsh Run MHP	120,000	0.120						196,000 gpd wells 160,000gpd pumps (13.3 hrs)	#VALUE!		0.00			blending to mitigate Arsenic have EDS 2004 copy it again for denise probably in Culpeper basin svc area amps available system capacity limited by storage to 120,000 gpd exceedances reported in 1990's
	Marsh Run MHP		0.000	Well 3 (Ball Field Well)	400	63		10 hole 6 casing	35,910.00	0.04		0.00			45 gpm well yield 45 gpm pump yield
			0.000				160 - 165	6		0.00		0.00			well construction log found at VDH (1987)
			0.000				220 - 225	6		0.00		0.00			70 gpm driller's yield
			0.000				370 - 375	6		0.00		0.00			15' to 400' bls "slate", 0 ppb arsenic
			0.000							0.00		0.00			
	Marsh Run MHP		0.00	Well 4 (White Property)	245	58		13.5 cased		0.00		0.00			14 ppb arsenic could not find well construction log, ca 1987 - 1991 probably in culpeper basin meta seds w/intrusive (check)
			0.00				58 - 245	8	124,488.00	0.12		0.00			200 gpm well yield (48 hr) 156 gpm pump
			0.00							0.00		0.00			Have MRMHP SSR and EDS
			0.00							0.00		0.00			

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COMMUNITY WATER SYSTEMS (MUNCIPAL & PRIVATE) USING GROUND WATER (9 VAC 25-780-70 B)

PWSID	Water System Name	VDH Permitted System Capacity (gpd)	Calculated VDH Permitted System Capacity (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Withdrawal Design Capacity: **AVERAGE DAILY** (gpd)	Withdrawal Design Capacity: **AVERAGE DAILY** (MGD)	Withdrawal Design Capacity: **MAXIMUM DAILY** (gpd)	Withdrawal Design Capacity: **MAXIMUM DAILY** (MGD)	GROUNDWATER MANAGEMENT AREA WELLS: DEQ Permitted **Monthly Withdrawal** (MGD)	DEQ Permitted **Annual Withdrawal** (MGD)	**Notes or Comments (This may include references to maps, data sources, data gaps, etc.)**
6061055	Blue Ridge Christian Home	59 persons	#VALUE!	Well	160	25	VDH N.I.	6		0.00		0.00	N.A.	N.A.	1991, 2003 EDSs (sewered) Country Water Systems operates (2009) 20 gpm 2 hr pump test 35 residents 24 staff arsenic 7 ppb FCWSA Bealeton hook-up being considered if re-zone and expand
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
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			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
6061595	Vint Hills Farm Station Sept 1988	2080 persons, 268 - 650 connections (pre 1999)	#VALUE!	4 wells						0.00		0.00			EDS dated December 1979 200,000+ gpd (1983)
Existing Source Totals - for all CWS's using wells (MGD)			#VALUE!							#VALUE!		0.04	0.00	0.00	

Community Water Systems: Reservoir Sources
Your Locality or Region

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List reservoir information for all community water systems using surface water reservoirs. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark reservoirs and intakes on associated map.

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE) USING SURFACE WATER RESERVOIRS (9 VAC 25-780-70 C)

Is your water system comprised of interconnected reservoirs? ☐ **Yes** ☐ **No**

If YES, designate which reservoirs and which intakes constitute a system. Report the drainage area and amount of storage available for water supply from each reservoir independently. Designed maximum daily withdrawal and the safe yield may be reported for the entire system or subsets of the system.

PWSID #	Water System Name	Reservoir Name	Reservoir watershed **Basin/ Sub-basin**	Reservoir watershed **Drainage Area** (square miles)	On-Stream Storage Available for Water Supply (gallons)	On-Stream Storage Available for Water Supply (MG)	**DESIGN CAPACITY:** **Average Daily** Withdrawal (gpd)	**Average Daily** Withdrawal (MGD)	**Maximum Daily** Withdrawal (gpd)	**Maximum Daily** Withdrawal (MGD)	Associated **Water Treatment Plant** (gpd)	Associated **Water Treatment Plant** (MGD)	Reservoir **Safe Yield** (MGD)	VDH Permitted System Capacity (gpd)	VDH Permitted System Capacity (MGD)	Limitations on Withdrawal Permit	**Notes or Comments** **(This may include references to maps, data sources, data gaps, etc.)**
	Not applicable					0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
Existing Source Totals - for all CWS's using surface water reservoirs (MG or MGD)						**0.00**		**0.00**		**0.00**		**0.00**			**0.00**		

Community Water Systems: Stream Intake and Spring Sources
Your Locality or Region

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List intake information for all community water systems using stream intakes. Additionally, include a qualitative description of existing in-stream beneficial uses within the planning area or outside the planning area that may be affected by point of stream withdrawal. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark intakes on associated map.

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE) USING STREAM INTAKES* (9 VAC 25-780-70 D, - 80 B10)

*** For municipal or private community water system(s) using springs, list applicable information for your spring sources below.**

PWSID #	Water System Name	Stream, River, or Spring Name	Basin / Sub-basin	Intake Drainage Area (square miles)	DESIGN CAPACITY: Average Daily Withdrawal (gpd)	Average Daily Withdrawal (MGD)	Maximum Daily Withdrawal (gpd)	Maximum Daily Withdrawal (MGD)	Pump Station (gpd)	Pump Station (MGD)	Water Treatment Plant (gpd)	Water Treatment Plant (MGD)	Safe Yield of Stream (MGD)	Lowest Daily Flow of Record (cfs)	VDH Permitted Capacity (gpd)	VDH Permitted Capacity (MGD)	Limitations on Withdrawal Permit	EXISTING INSTREAM BENEFICIAL USES: Within Planning Area	Outside Planning Area	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
	not applicable					0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
Existing Source Totals - for all CWS's using stream intakes &/or springs (MGD)						**0.00**		**0.00**		**0.00**		**0.00**				**0.00**				

Water Purchases Outside Planning Area
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List information regarding the amount of ground or surface water to be purchased from water supply systems outside the geographic boundaries of the planning area (9 VAC 25-780-70G). Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map.

AMOUNT OF GROUND OR SURFACE WATER TO BE PURCHASED FROM WATER SUPPLY SYSTEMS OUTSIDE THE GEOGRAPHIC BOUNDARIES OF THE PLANNING AREA (9 VAC 25-780-70G)

PWSID#, Community Water System Name	Source:		Amount to be Purchased:				Contract Limitations:				
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	**Maximum Daily** (gpd)	**Maximum Daily** (MGD)	**Average Annual** (gpd)	**Average Annual** (MGD)	Supplier(s) Name(s) (PWSID #)	Contract or Agreement Terms	Recipient(s) **or** Area(s) Served	Contract Limits	Other
Fauquier County - Warrenton Service District - FCWSA XXX Service Area(s) Is indirect RECIPIENT	2 active wells, 2 wells being reactivated in 2010	Warrenton Reservoir - Airlie Interconnected Reservoir System, Cedar Run Tributaries - Middle Potomac - Occoquan Potomac	280425.78	0.28	167919.63	0.17	Town of Warrenton PWSID # 6061600 planning as a locality not part of region	Year 2008: Individual connections to county resident homes in immediately surrounding vicinity are retail customers of Town of Warrenton - no specified limits, comparing 1999 and 2008 weather related max month factor is approx. 1.36, peaking day factor calced for Warrenton customers at 1.67	620 connections based on 1673 persons / 2.7 person per household (Fauquier County census)	per VDH permit assumptions, 400 gpd per connection no dated time limits for term of service Limited Additional Connections could develop in these neighborhood service areas	Warrenton estimates that 1,673 persons who are residents of Fauquier County are served by the Warrenton community water system by ground water or reservoir water variously as needed.
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
Total Amount of Water To Be Purchased Outside the Planning Area (MGD):				0.28		0.17					

List information for the amount of ground or surface water available to be purchased from outside the geographic boundaries of the planning area from water supply systems with the capacity to draw more than 300,000 gallons per month (9 VAC 25-780-70H). Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map.

AMOUNT OF WATER AVAILABLE TO BE PURCHASED, OUTSIDE THE PLANNING AREA, FROM ANY SOURCE WITH CAPACITY TO WITHDRAW MORE THAN 300,000 GALLONS PER MONTH OF SURFACE OR GROUND WATER (9 VAC 25-780-70H)

PWSID#, Community Water System Name	Source:		Amount Available to be Purchased:				Contract Limitations:				
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	**Maximum Daily** (gpd)	**Maximum Daily** (MGD)	**Average Annual** (gpd)	**Average Annual** (MGD)	Supplier(s) Name(s) (PWSID #)	Contract or Agreement Terms	Recipient(s) **or** Area(s) Served	Contract Limits	Other
				0.00		0.00				Warrenton will NOT serve additional areas in this service district	
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					

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				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
Total Amount of Water Available for Purchase Outside the Planning Area (MGD):				0.00		0.00					

Office of Water Supply Planning
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Note findings and recommendations from source water assessment plans and/or wellhead protection programs. Reference sources and note any assumptions. If unable to find data or data not applicable, note accordingly. If applicable, mark program/plan areas on associated map.

FINDINGS AND RECOMMENDATIONS FROM APPLICABLE SOURCE WATER ASSESSMENT PLANS OR WELLHEAD PROTECTION PROGRAMS (9 VAC 25-780-70K)

Locality Name	Source Water Assessment Plan(s):		Wellhead Protection Program(s):	
	Date of Plan	Summary of Findings and Recommendations	Date of Program	Summary of Findings and Recommendations

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 3 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER: ***water withdrawal information*** **(9 VAC 25-780-80 B1-B3)**

YEAR:	**20 years history various dates**				**WITHDRAWAL:**		**Notes or Comments** (This may include references to maps, data sources, data gaps, etc.)
PWSID	Water System Name	Source Name	Population Served	Number of Connections	**Average Daily** (MGD)	**Maximum Daily** (MGD)	
		Municipal Systems					
Municipal Community Water System Totals:			0	0	0.00		

Community Water Systems: Withdrawal Information
Your Locality or Region

Office of Water Supply Planning
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Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 3 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER: ***water withdrawal information*** **(9 VAC 25-780-80 B1-B3)**

YEAR: 20 years history various dates

PWSID	Water System Name	Source Name	Population Served	Number of Connections	WITHDRAWAL: Average Daily (MGD)	WITHDRAWAL: Maximum Daily (MGD)	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
			Private Systems				
	Vint Hill Farms Station 1988	early Mesozoic aquifer	<2000 residents transient population added may total 2000		228,080	311,000	4 wells max daily is avg day in august-september 1988 Nov 1986 watersupply study
	VHF		3,500	268			Apr-91
	VHF		3,930	1,100			1993 3 wells (1,3,4) upgrade treatment constuction EDS
	VHF		2,000				1995
			70				1998
	USArmy base closing change to County						1998 considered change to NTNC
							2005 VNT-1A E&G ACTIVITY
	Fauquier Springs/ Sulphur springs Investment Corp.	Well # 1 which aquifer?	400	20 connections existing 74 connections possible under design capacity			Population served includes both residents and golf course clubhouse (and pool?) VDH inspector avg water use was 10,208 gpd 2008-2009 resulting in avg. daily water use of 510 gpd/connection.
	Marsh Run Mobile Home Community				0.088	486,200	max dat withdrawal is after weekend, when tanks need refilling because operator wasn't there for several days

Community Water Systems: Withdrawal Information
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 3 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER: ***water withdrawal information*** **(9 VAC 25-780-80 B1-B3)**

YEAR: 20 years history various dates

PWSID	Water System Name	Source Name	Population Served	Number of Connections	WITHDRAWAL: Average Daily (MGD)	WITHDRAWAL: Maximum Daily (MGD)	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
Private Community Water System Totals:			9,900	1,368	228,080.09		
Municipal and Private Community Water System Totals:			9,900	1,368	228,080.09		

CWS Annual Average and Average Monthly Water Use
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map.
Note the data reference year in Row 6 and fill out a separate spreadsheet for each data year.

Community Water Systems Using Ground and Surface Water: ***annual average and average monthly water use*** **(9 VAC 25-780-80 B4)**

YEAR 2009	6061125 Drysdale Subdivision			PWSID # 6061020 Baldwin Ridge			PWSID # 6061665 Waterloo Estates			PWSID # 6061114 Fauquier Springs			PWSID # 6061150 Marsh Run MHC			PWSID # 6061055 Blue Ridge Christian Home			PWSID # Lakeway			Locality or Region Total Water Use (MG/Mo)	Locality or Region Total Average Monthly by Month (MGD)
	Source (GW)			Source (GW)			Source (GW)			Source (GW)			Source (GW 2 wells)			Source (GW)			Source (GW)				
	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)		
January	118,700	0.12	0.004	49,980	0.05	0.002	429,600	0.43	0.014	318,439	0.32	0.010	3,319,600	3.32	0.107	43,600	0.044	0.0014	118,700	0.12	0.004	4.40	0.14
February	123,400	0.12	0.004	49,030	0.05	0.002	383,800	0.38	0.014	199,267	0.20	0.007	2,701,400	2.70	0.096	43,550	0.044	0.0016	123,400	0.12	0.004	3.62	0.13
March	121,200	0.12	0.004	55,990	0.06	0.002	393,600	0.39	0.013	238,088	0.24	0.008	3,021,900	3.02	0.097	51,700	0.052	0.0017	121,200	0.12	0.004	4.00	0.13
April	134,410	0.13	0.004	42,930	0.04	0.001	443,600	0.44	0.015	339,816	0.34	0.011	2,704,600	2.70	0.090	42,700	0.043	0.0014	134,410	0.13	0.004	3.84	0.13
May	120,390	0.12	0.004	56,130	0.06	0.002	483,717	0.48	0.016	285,287	0.29	0.009	2,317,400	2.32	0.075	49,300	0.049	0.0016	120,390	0.12	0.004	3.43	0.11
June	130,800	0.13	0.004	80,270	0.08	0.003	439,995	0.44	0.015	371,756	0.37	0.012	2,421,000	2.42	0.081	51,800	0.052	0.0017	130,800	0.13	0.004	3.63	0.12
July	126,700	0.13	0.004	69,760	0.07	0.002	765,482	0.77	0.025	367,492	0.37	0.012	2,541,900	2.54	0.082	53,600	0.054	0.0017	126,700	0.13	0.004	4.05	0.13
August	139,000	0.14	0.004	85,850	0.09	0.003	576,320	0.58	0.019	437,505	0.44	0.014	2,475,100	2.48	0.080	51,200	0.051	0.0017	139,000	0.14	0.004	3.90	0.13
September	115,200	0.12	0.004	84,870	0.08	0.003	565,331	0.57	0.019	306,007	0.31	0.010	2,479,300	2.48	0.083	52,300	0.052	0.0017	115,200	0.12	0.004	3.72	0.12
October	117,400	0.12	0.004	76,170	0.08	0.002	455,969	0.46	0.015	254,619	0.25	0.008	2,489,600	2.49	0.080	43,800	0.044	0.0014	117,400	0.12	0.004	3.55	0.11
November	108,900	0.11	0.004	93,900	0.09	0.003	420,861	0.42	0.014	266,064	0.27	0.009	2,462,800	2.46	0.082	46,500	0.047	0.0016	108,900	0.11	0.004	3.51	0.12
December	110,690	0.11	0.004	73,700	0.07	0.002	354,600	0.35	0.011	240,258	0.24	0.008	3,039,000	3.04	0.098	45,700	0.046	0.0015	110,690	0.11	0.004	3.97	0.13
Total Annual (MG)		1.47			0.82			5.71			3.62			31.97			0.58			1.47		45.64	
Average Monthly (MG/Mo)		0.12			0.07			0.48			0.30			2.66			0.05			0.12		3.80	
Average Daily (MGD)		0.004			0.002			0.016			0.010			0.088			0.002			0.004		0.125	
NOTES or COMMENTS:				12 connections grandfathered Days per "mo" 28,28,35,28,35,28,28,35,28,28,35,28			Number of connections =72 - 73 should be reporting to EDWrD operator 2009 is Robert E. Foley for Jack Foster for Property owners association have EDS and SSR			7.48			copied OR thru 8/2009 copied OR 9/2009 -12/2009 **this is only CWS with close to dailies**			Jan est from Jan 2010, Feb est from avg Jan2010 and March 2009 dailies are not reported 2009 42 popn served			use Baldwin Ridge data as estimate				

Worksheet Instructions:
1) Enter the data year and your system name.
2) Enter source code (GW = Ground Water; SW = Surface Water).
3) Enter monthly water use data in gallons.
4) Enter notes or comments (this may include references to maps, data sources, data gaps, etc.) in the approriate cells.
5) If you need additional data entry columns, "unhide" columns V through AU.

CWS Annual Average and Average Monthly Water Use
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark

Community Water Systems Using Ground and Surface Water: ***annual average and average monthly water use*** **(9 VAC 25-780-80 B4)**

YEAR 2008	6061125 Drysdale Subdivision			6061020 Baldwin Ridge Water System			6061665 Waterloo Estates			PWSID # 6061114 Fauquier Springs Clubhouse & Residences			PWSID # 6061150 Marsh Run MHC			PWSID # 6061055 Blue Ridge Christian Home			PWSID # System Name			Locality or Region Total Water Use (MG/Mo)	Locality or Region Total Average Monthly by Month (MGD)
	Source (GW)			Source (GW)			Source (GW)			Source (GW)			Source (GW)			Source (GW)			Source (GW or SW)				
	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)		
January	107,800	0.11	0.003		0.00	0.000	511,000	0.51	0.016		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.62	0.02
February	122,000	0.12	0.004		0.00	0.000	517,000	0.52	0.018		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.64	0.02
March	111,900	0.11	0.004		0.00	0.000	452,000	0.45	0.015		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.56	0.02
April	113,100	0.11	0.004		0.00	0.000	473,000	0.47	0.016		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.59	0.02
May	155,700	0.16	0.005		0.00	0.000	441,885	0.44	0.014		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.60	0.02
June	130,300	0.13	0.004		0.00	0.000	609,165	0.61	0.020		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.74	0.02
July	136,700	0.14	0.004		0.00	0.000	623,301	0.62	0.020		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.76	0.02
August	116,300	0.12	0.004		0.00	0.000	514,650	0.51	0.017		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.63	0.02
September	134,500	0.13	0.004	76,720	0.08	0.003	579,389	0.58	0.019		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.79	0.03
October	136,400	0.14	0.004	54,760	0.05	0.002	554,785	0.55	0.018		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.75	0.02
November	92,500	0.09	0.003		0.00	0.000	449,106	0.45	0.015		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.54	0.02
December	120,500.00	0.12	0.004		0.00	0.000	389,300	0.39	0.013		0.00	0.000		0.00	0.000		0.00	0.000		0.00	0.000	0.51	0.02
Total Annual (MG)		1.48			0.13			6.11			0.00			0.00			0.00			0.00		7.72	
Average Monthly (MG/Mo)		0.12			0.01			0.51			0.00			0.00			0.00			0.00		0.64	
Average Daily (MGD)		0.004			0.000			0.017			0.000			0.000			0.000			0.000		0.021	
NOTES or COMMENTS:	readings are made about every 3 to 5 days 2 wells in system, 1 well usually operates, April and August but 2 wells in 2008, some "months" include more than 31 days 1=28, 2=33, 3=31, 4=29, 5=34, 6=30, 7=28,8=28, 9=33, 10=35, 11=24, 12=35 (mo=# of days) have copies of 2008 oper rpts			September included 35 days 2,192 gpd October included 28 days 1,956 gpd			dailies not reported, peak day NA 34,37,31,31,30,30,30,31,31,31,31,30			have copy oper rpt 2008			2-14-08 conn 350, popn 1400 2007=264 gpd/conn down from 317 gpd/conn(2005) made copies 2008 09 oper rpt										

Worksheet Instructions:
1) Enter the data year and your system name.
2) Enter source code (GW = Ground Water; SW = Surface Water).
3) Enter monthly water use data in gallons.
4) Enter notes or comments (this may include references to maps, data sources, data gaps, etc.) in the approriate cells.
5) If you need additional data entry columns, "unhide" columns V through AU.

Community Water Systems: Peak Day Use
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
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URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 6 and fill out a separate spreadsheet for each data year.**

Community Water Systems Using Ground and Surface Water: ***peak day use*** **(9 VAC 25-780-80 B5)**

YEAR 2009	PWSID #6061125 Drysdale Subdivision		PWSID # 6061020 Baldwin Ridge		PWSID # 6061665 Waterloo Estates		PWSID # 6061114 Fauquier Springs		PWSID # 6061150 Amended Marsh Run MHC		PWSID # 6061055 Blue Ridge Christian Home		PWSID # Lakeway		PWSID # System Name		PWSID # System Name		PWSID # System Name	
	Source (GW)		Source (GW or SW)		Source (GW or SW)		Source (GW)		Source (GW)		Source (GW)		Source (GW or SW)		Source (GW or SW)		Source (GW or SW)		Source (GW or SW)	
	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)
January	178,050	0.178	74,970	0.075	644,400	0.644	477,658	0.478	139,150	0.139	65,400	0.065	178,050	0.178		0.000		0.000		0.000
February	185,100	0.185	73,545	0.074	575,700	0.576	298,901	0.299	112,175	0.112	65,325	0.065	185,100	0.185		0.000		0.000		0.000
March	181,800	0.182	83,985	0.084	590,400	0.590	357,133	0.357	103,500	0.104	77,550	0.078	181,800	0.182		0.000		0.000		0.000
April	201,615	0.202	64,395	0.064	665,400	0.665	509,725	0.510	146,600	0.147	64,050	0.064	201,615	0.202		0.000		0.000		0.000
May	180,585	0.181	84,195	0.084	725,576	0.726	427,931	0.428	95,800	0.096	73,950	0.074	180,585	0.181		0.000		0.000		0.000
June	196,200	0.196	120,405	0.120	659,993	0.660	557,634	0.558	102,800	0.103	77,700	0.078	196,200	0.196		0.000		0.000		0.000
July	190,050	0.190	104,640	0.105	1,148,223	1.148	551,239	0.551	94,000	0.094	80,400	0.080	190,050	0.190		0.000		0.000		0.000
August	208,500	0.209	128,775	0.129	864,480	0.864	656,258	0.656	94,000	0.094	76,800	0.077	208,500	0.209		0.000		0.000		0.000
September	172,800	0.173	127,305	0.127	847,997	0.848	459,010	0.459	88,000	0.088	78,450	0.078	172,800	0.173		0.000		0.000		0.000
October	176,100	0.176	114,255	0.114	683,954	0.684	381,929	0.382	92,700	0.093	65,700	0.066	176,100	0.176		0.000		0.000		0.000
November	163,350	0.163	140,850	0.141	631,292	0.631	399,095	0.399	86,900	0.087	69,750	0.070	163,350	0.163		0.000		0.000		0.000
December	166,035	0.166	110,550	0.111	531,900	0.532	360,386	0.360	115,600	0.116	68,550	0.069	166,035	0.166		0.000		0.000		0.000
NOTES or COMMENTS:	used average daily w/ 1.5X peaking factor								Dailies reported, except: 3-day meas. On Mondays made copies		Dailies not reported 2009		estimated from Drysdale							

Worksheet Instructions:

1) Enter the data year and your system name.

2) Enter source code (GW = Ground Water; SW = Surface Water).

3) Enter peak day water use for each month in gallons per day (gpd). If you only have peak day data for your peak month (one month), enter that value in the appropriate cell.

4) If you do not have daily data for your system, but know your peak month then estimate your peak day use by using the following equation and enter this information into the applicable month cell above.

Peak Day "Raw" Water Use (gpd) =
Average Daily Withdrawal* (MGD) X 10^6 (g/MG) X 1.5 Peaking Factor
**from worksheet "80 B1-B3 CWS Use"*

5) Enter notes or comments (this may include references to maps, data sources, data gaps, etc.) in the approriate cells.

6) If you need additional data entry columns, "unhide" columns K through AN.

Community Water Systems: Disaggregated Use
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

For each community water system included in the water plan, include an estimate of the disaggregated annual average amount of water used in categories of use appropriate for the system. Reference sources and note any assumptions regarding calculations. **If unable to find data or data not applicable, note accordingly in the Notes/Comments Column and highlight applicable cells. Note the data reference year in Row 4 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE): DISAGGREGATED ANNUAL AVERAGE WATER USE AMOUNTS (9 VAC 25-780-80 B9)

			USAGE CATEGORIES:																	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
YEAR: 2XXX																Sales to Other CWS's:				
PWSID	Water System Name	System Total (MGD)	Residential (gpd)	Residential (MGD)	Commercial Institutional Light Industrial *CIL* (gpd)	Commercial Institutional Light Industrial *CIL* (MGD)	Heavy Industrial (gpd)	Heavy Industrial (MGD)	Military (gpd)	Military (MGD)	Other (gpd)	Other (MGD)	Production Processes (gpd)	Production Processes (MGD)	Unaccounted for Losses (gpd)	Unaccounted for Losses (MGD)	Amount Sold (gpd)	Amount Sold (MGD)	System Name	
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
Total Use By Category in MGD *(for All Community Water Systems)*		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		

Non-Agricultural, Self-Supplied Users of Surface Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural surface water source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column I, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF SURFACE WATER (9 VAC 25-780-70 E, - 80 B6, and - 80 C)

Water User Name	Waterbody Source Name	Use Category	DESIGN CAPACITY: Average Daily Withdrawal (gpd)	DESIGN CAPACITY: Average Daily Withdrawal (MGD)	DESIGN CAPACITY: Maximum Daily Withdrawals (gpd)	DESIGN CAPACITY: Maximum Daily Withdrawals (MGD)	Limitations on Withdrawal Permit(s)	WATER USE: Estimated Annual Average (MGD) Year 2XXX	Notes or Comments (Include service area user falls within and references to any maps, data sources, data gaps, etc.)
Within Community Water System (Municipal & Private) Service Areas									
Not applicable or 1 quarry				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
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				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
Within Community Water System Service Area Totals (MGD):				0.000		0.000		0.000	

Non-Agricultural, Self-Supplied Users of Surface Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural surface water source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column I, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF SURFACE WATER (9 VAC 25-780-70 E, - 80 B6, and - 80 C)

Water User Name	Waterbody Source Name	Use Category	DESIGN CAPACITY: Average Daily Withdrawal (gpd)	DESIGN CAPACITY: Average Daily Withdrawal (MGD)	DESIGN CAPACITY: Maximum Daily Withdrawals (gpd)	DESIGN CAPACITY: Maximum Daily Withdrawals (MGD)	Limitations on Withdrawal Permit(s)	WATER USE: Estimated Annual Average (MGD) Year 2XXX	Notes or Comments (Include service area user falls within and references to any maps, data sources, data gaps, etc.)
Outside Community Water System (Municipal & Private) Service Areas									
				0.000		0.000			
Woodward Turf Farms	Rappahannock River	COM / IRR		0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
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				0.000		0.000			

Non-Agricultural, Self-Supplied Users of Surface Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural surface water source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column I, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF SURFACE WATER (9 VAC 25-780-70 E, - 80 B6, and - 80 C)

Water User Name	Waterbody Source Name	Use Category	DESIGN CAPACITY: Average Daily Withdrawal (gpd)	DESIGN CAPACITY: Average Daily Withdrawal (MGD)	DESIGN CAPACITY: Maximum Daily Withdrawals (gpd)	DESIGN CAPACITY: Maximum Daily Withdrawals (MGD)	Limitations on Withdrawal Permit(s)	WATER USE: Estimated Annual Average (MGD) Year 2XXX	Notes or Comments (Include service area user falls within and references to any maps, data sources, data gaps, etc.)
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
Outside Community Water System Service Area Totals (MGD):				0.000		0.000		0.000	
Self-Supplied Nonagricultural Users of Surface Water Totals (MGD):				0.000		0.000		0.000	

Non-Agricultural, Self-Supplied Users of Ground Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural groundwater source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column M, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF GROUND WATER (9 VAC 25-780-70 F, - 80 B6, and - 80 C)

		DESIGN CAPACITY:				INDIVIDUAL WELL DATA:						WATER USE:	Notes or Comments
Water User Name	Use Category	**Average Daily** Withdrawals (gpd)	**Average Daily** Withdrawals (MGD)	**Maximum Daily** Withdrawals (gpd)	**Maximum Daily** Withdrawals (MGD)	Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Limitations on Withdrawal Permit(s)	Estimated **Annual Average** (MGD) YEAR **2009**	**(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
Within Community Water System (Municipal & Private) Service Areas													
Remington Combustion Turbines	Power - Fossil Fuel		0.000		0.000								
TP Developed and TP Undeveloped - former trinity Plastics Industrial Outside remington ?? Users transitioning	Manufacturing		0.000		0.000								
Kastle Green Golf Course			0.000		0.000								
Leazer Brothers Well Drilling Company, has a well on their shop grounds that may see heavy use sporadically for tank truck filling.			0.000		0.000								Town of Remington Service Area
If Turf Farms are non-agriculture:			0.000		0.000								
Kettle Wind Turf Farm - Centerville Sod			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
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			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
Within CWS Service Area Totals (MGD):			0.000		0.000							0.000	

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural groundwater source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column M, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF GROUND WATER (9 VAC 25-780-70 F, - 80 B6, and - 80 C)

		DESIGN CAPACITY:				INDIVIDUAL WELL DATA:						WATER USE:	Notes or Comments
Water User Name	Use Category	**Average Daily** Withdrawals (gpd)	**Average Daily** Withdrawals (MGD)	**Maximum Daily** Withdrawals (gpd)	**Maximum Daily** Withdrawals (MGD)	Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) or Water Zones	Well Diameter (inches)	Limitations on Withdrawal Permit(s)	Estimated **Annual Average** (MGD) YEAR **2009**	**(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
Outside Community Water System (Municipal & Private) Service Areas													
Remington Combustion Turbines	Power - Fossil Fuel		0.000		0.000								check if this falls in Remington Town or FCWSA
TP Developed and TP Undeveloped - former trinity Plastics Industrial Outside remington ?? Users transitioning	Manufacturing		0.000		0.000								
Kastle Green Golf Course			0.000		0.000								
			0.000		0.000								
If Turf Farms are non-agriculture:			0.000		0.000								
Kettle Wind Turf Farm - Centerville Sod			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
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			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
Outside CWS Service Area Totals (MGD):			0.000		0.000							0.000	
Self-Supplied Nonagricultural Users of Ground Water Totals (MGD):			0.000		0.000							0.000	
Self-Supplied Nonagricultural Users Totals (surface and groundwater in MGD):			0.000		0.000							0.000	

Agricultural, Self-Supplied Users
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List data for all agricultural users who utilize more than 300,000 gallons per month of ground or surface water. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map. **Note the data reference year in Column F, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, AGRICULTURAL USERS > 300,000 GAL/MONTH OF GROUND OR SURFACE WATER (9 VAC 25-780-70 I, -80B7, and -80D)

User Name	SOURCE TYPE:		USE TYPE:		WATER USE:		Notes or Comments (Include service area user falls within and any references to maps, data sources, data gaps, etc.)
			Irrigation	Nonirrigation	Estimated **Annual Average** (MGD) Year **2009**		
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	(Place an "**X**" in appropriate column cell)		Surface Water (MGD)	Ground Water (MGD)	
Within Community Water System (Municipal & Private) Service Areas							
							see NASS discussion in narrative and data collected and mapped by fauquier Ag ext agent for this Plan. work in progress april 2010
Within Community Water System Service Area Water Use Totals (MGD):					**0.000**	**0.000**	

Agricultural, Self-Supplied Users
Your Locality or Region

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List data for all agricultural users who utilize more than 300,000 gallons per month of ground or surface water. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map. **Note the data reference year in Column F, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, AGRICULTURAL USERS > 300,000 GAL/MONTH OF GROUND OR SURFACE WATER (9 VAC 25-780-70 I, -80B7, and -80D)

User Name	SOURCE TYPE:		USE TYPE:		WATER USE:		Notes or Comments (Include service area user falls within and any references to maps, data sources, data gaps, etc.)
			Irrigation	Nonirrigation	Estimated **Annual Average** (MGD) Year **2009**		
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	(Place an "**X**" in appropriate column cell)		Surface Water (MGD)	Ground Water (MGD)	
Outside Community Water System (Municipal & Private) Service Areas							
							see NASS discussion in narrative and data collected and mapped by fauquier Ag ext agent for this Plan. Work in progress April 2010

Agricultural, Self-Supplied Users
Your Locality or Region

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List data for all agricultural users who utilize more than 300,000 gallons per month of ground or surface water. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map. **Note the data reference year in Column F, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, AGRICULTURAL USERS > 300,000 GAL/MONTH OF GROUND OR SURFACE WATER (9 VAC 25-780-70 I, -80B7, and -80D)

User Name	SOURCE TYPE:		USE TYPE:		WATER USE:		Notes or Comments
			Irrigation	Nonirrigation	Estimated **Annual Average** (MGD) Year **2009**		
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	(Place an "**X**" in appropriate column cell)		Surface Water (MGD)	Ground Water (MGD)	**(Include service area user falls within and any references to maps, data sources, data gaps, etc.)**
Outside Community Water System Service Area Water Use Totals (MGD):					0.000	0.000	
Estimated Total Agricultural Useage By Source (MGD):					0.000	0.000	

Self-Supplied, Individual Well Users
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Estimate well use information for small, self-supplied users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. **Note the data reference year in Row 7.**

ESTIMATED NUMBER OF RESIDENCES AND BUSINESSES THAT ARE SELF-SUPPLIED BY INDIVIDUAL WELLS WITHDRAWING LESS THAN 300,000 GALLONS PER MONTH (9 VAC 25-780-70J); ESTIMATED WATER USE BY SELF-SUPPLIED USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

	ESTIMATING SMALL SELF-SUPPLIED USERS						ESTIMATING SMALL SELF-SUPPLIED WATER USE										
	Step 1: Estimate Total Population of Individual Self-Supplied Well Users			Step 2: Estimate Number of Residences and Businesses on Individual Wells			Step 3: Estimate Total Self-Supplied Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4: Estimate Total Self-Supplied Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA					
Locality	Locality Population YEAR **2009**	Total Population Served by Community Water System(s) YEAR **2009**	Estimated Population Served by Individual Wells	Locality Specific Population Per Household Factor	Estimated Number of **RESIDENCES** on Wells (Column D ÷ Column E)	Estimated Number of **BUSINESSES** on Wells	Estimated Population Served by Individual Wells	Per Capita Water Use Factor (gal/person/day)	Average Annual Residential Use (gpd) (Column H x Column I)	Average Annual Business Use (gpd) (SSU Business Data)	Estimated Average Annual Use (MGD)	# of Self-Supplied Residences Within Service Area	Locality Specific Population Per Household Factor	Per Capita Water Use Factor (gal/person/day)	Average Annual Residential Use (gpd) (Columns M x N x O)	Average Annual Business Use (gpd) (SSU Business Data)	Estimated Annual Average Use (MGD)
County - wide there are 14,425 e-911 addresses OUTSIDE service districts and Town areas.			0		-		0		0		0.000				0		0.000
Small agricultural users (<300,000 gallons per month) account for **X** out of the 14,425 addresses. (Tim Mize Ag extension is working on this inventory for the Plan)			0		-		0		0		0.000				0		0.000
VDH non-community water supplies account for **49** of those addresses and are considered businesses.			0		-		0		0		0.000				0		0.000
The remaining NNN of the 14,425 (**14,425** minus **X** minus **49**) are considered 'Residential' OUTSIDE SA.			0		-		0		0		0.000				0		0.000
Plus there are #### addresses in Calverton service district and Midland service district INSIDE that are not yet served by community water systems.			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
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			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
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			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000

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			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
The remaining NNN of the 14,425 are considered residential OUTSIDE SA, plus there are #### in Calverton service district and Midland service district INSIDE .			0		-		0		0		0.000				0		0.000
Planning Area Totals:	0	0	0		0	0	0		0	0	0.000	0			0	0	0.000

Notes or Comments: (This may include references to maps, data sources, data gaps, etc.)	

Self-Supplied, Individual Well Users: Businesses
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
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Estimate well use information for small, self-supplied business users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly.
Record the data reference year, from your data sources, in Row 5. **Fill out a separate sheet for each locality in your region.**

ESTIMATED WATER USE BY SELF-SUPPLIED BUSINESS USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

Locality Name
Year: 2XXX

Use this spreadsheet to fill out columns K and Q on the main "70J, 80B8, 80E SSU" spreadsheet

ESTIMATING SMALL SELF-SUPPLIED BUSINESS WATER USE

Step 3 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA				
Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column B x Column C)	Estimated Average Annual Business Use (MGD)	Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column G x Column H)	Estimated Average Annual Business Use (MGD)
Southeastern Elementary			0	0.000				0	0.000
Smith-Midland			0	0.000				0	0.000
Ross Industies - Midland			0	0.000				0	0.000
Southern Fauquier Child Development			0	0.000				0	0.000
(Kastle Greens Golf Club)			0	0.000				0	0.000
Mary Walter Elem School			0	0.000				0	0.000
M&P Pizza			0	0.000				0	0.000
Sky Meadows State Park			0	0.000				0	0.000
1763 Inn			0	0.000				0	0.000
Piedmont childcare			0	0.000				0	0.000
Hunters Head Tavern			0	0.000				0	0.000
Middleburg tennins club			0	0.000				0	0.000
Camp Moss Hollow			0	0.000				0	0.000
Claude Thompson Elem school			0	0.000				0	0.000
Marshall/coleman schools			0	0.000				0	0.000
Fauquier Livestock exchange			0	0.000				0	0.000
Frogs and friends			0	0.000				0	0.000
Northern Fauquier Community Park			0	0.000				0	0.000
Marriot Ranch			0	0.000				0	0.000
Fresta Valley Christian School			0	0.000				0	0.000
Spitony's Restaurant			0	0.000				0	0.000
Airlie Foundation			0	0.000				0	0.000
Ben and Mary's Steak House			0	0.000				0	0.000
Waterloo Estates			0	0.000				0	0.000
(Dominion - Remington Turbines - Virginia Power)			0	0.000				0	0.000
Walnut Grove Child Care III			0	0.000				0	0.000
Johnsons Motel			0	0.000				0	0.000
Quarles Truck Stop			0	0.000				0	0.000
Pete's Park and Eat			0	0.000				0	0.000
McDonalds -Opal			0	0.000				0	0.000

Self-Supplied, Individual Well Users: Businesses
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
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URL: http://www.deq.virginia.gov/watersupplyplanning/

Estimate well use information for small, self-supplied business users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly.
Record the data reference year, from your data sources, in Row 5. **Fill out a separate sheet for each locality in your region.**

ESTIMATED WATER USE BY SELF-SUPPLIED BUSINESS USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

Locality Name
Year: 2XXX

Use this spreadsheet to fill out columns K and Q on the main "70J, 80B8, 80E SSU" spreadsheet

ESTIMATING SMALL SELF-SUPPLIED BUSINESS WATER USE									
Step 3 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA				
Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column B x Column C)	Estimated Average Annual Business Use (MGD)	Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column G x Column H)	Estimated Average Annual Business Use (MGD)
Sheetz 221			0	0.000				0	0.000
Maplewood Childcare Center			0	0.000				0	0.000
Town & Country Restaurant			0	0.000				0	0.000
Walnut Grove Child Care			0	0.000				0	0.000
MacRidge Well			0	0.000				0	0.000
St Stephens Episcopal			0	0.000				0	0.000
Poplar Springs Inn			0	0.000				0	0.000
Pearson Elementary School			0	0.000				0	0.000
Chemetrics			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
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			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
Locality Name : Outside Service Area Totals	0		0	0.000	***Locality Name : Within Service Area Totals***	0		0	0.000

Notes or Comments: (This may include references to maps, data sources, data gaps, etc.)	

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Virginia	7,078,515	2.54
Accomack County	38,305	2.45
Albemarle County	79,236	2.44
Alleghany County	12,926	2.46
Amelia County	11,400	2.66
Amherst County	31,894	2.51
Appomattox County	13,705	2.55
Arlington County	189,453	2.15
Augusta County	65,615	2.56
Bath County	5,048	2.34
Bedford County	60,371	2.52
Bland County	6,871	2.43
Botetourt County	30,496	2.56
Brunswick County	18,419	2.47
Buchanan County	26,978	2.46
Buckingham County	15,623	2.52
Campbell County	51,078	2.45
Caroline County	22,121	2.69
Carroll County	29,245	2.36
Charles City County	6,926	2.59
Charlotte County	12,472	2.47
Chesterfield County	259,903	2.73
Clarke County	12,652	2.50
Craig County	5,091	2.45
Culpeper County	34,262	2.68
Cumberland County	9,017	2.55
Dickenson County	16,395	2.42
Dinwiddie County	24,533	2.58
Essex County	9,989	2.46
Fairfax County	969,749	2.74
Fauquier County	55,139	2.75
Floyd County	13,874	2.39
Fluvanna County	20,047	2.59
Franklin County	47,286	2.44
Frederick County	59,209	2.64
Giles County	16,657	2.37
Gloucester County	34,780	2.62
Goochland County	16,863	2.51
Grayson County	17,917	2.31
Greene County	15,244	2.71
Greensville County	11,560	2.51
Halifax County	37,355	2.43
Hanover County	86,320	2.71
Henrico County	262,300	2.39
Henry County	57,930	2.40
Highland County	2,536	2.24

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Isle of Wight County	29,728	2.61
James City County	48,102	2.47
King and Queen County	6,630	2.48
King George County	16,803	2.70
King William County	13,146	2.69
Lancaster County	11,567	2.23
Lee County	23,589	2.41
Loudoun County	169,599	2.82
Louisa County	25,627	2.56
Lunenburg County	13,146	2.39
Madison County	12,520	2.60
Mathews County	9,207	2.32
Mecklenburg County	32,380	2.38
Middlesex County	9,932	2.27
Montgomery County	83,629	2.40
Nelson County	14,445	2.42
New Kent County	13,462	2.65
Northampton County	13,093	2.39
Northumberland County	12,259	2.24
Nottoway County	15,725	2.48
Orange County	25,881	2.50
Page County	23,177	2.46
Patrick County	19,407	2.36
Pittsylvania County	61,745	2.49
Powhatan County	22,377	2.74
Prince Edward County	19,720	2.43
Prince George County	33,047	2.76
Prince William County	280,813	2.94
Pulaski County	35,127	2.32
Rappahannock County	6,983	2.50
Richmond County	8,809	2.40
Roanoke County	85,778	2.41
Rockbridge County	20,808	2.43
Rockingham County	67,725	2.61
Russell County	30,308	2.44
Scott County	23,403	2.35
Shenandoah County	35,075	2.42
Smyth County	33,081	2.37
Southampton County	17,482	2.53
Spotsylvania County	90,395	2.87
Stafford County	92,446	3.01
Surry County	6,829	2.61
Sussex County	12,504	2.41
Tazewell County	44,598	2.40
Warren County	31,584	2.57
Washington County	51,103	2.36

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Westmoreland County	16,718	2.43
Wise County	40,123	2.44
Wythe County	27,599	2.36
York County	56,297	2.78
Alexandria city	128,283	2.04
Bedford city	6,299	2.26
Bristol city	17,367	2.18
Buena Vista city	6,349	2.38
Charlottesville city	45,049	2.27
Chesapeake city	199,184	2.79
Clifton Forge city	4,289	2.22
Colonial Heights city	16,897	2.37
Covington city	6,303	2.22
Danville city	48,411	2.27
Emporia city	5,665	2.43
Fairfax city	21,498	2.61
Falls Church city	10,377	2.31
Franklin city	8,346	2.39
Fredericksburg city	19,279	2.09
Galax city	6,837	2.27
Hampton city	146,437	2.49
Harrisonburg city	40,468	2.53
Hopewell city	22,354	2.43
Lexington city	6,867	2.06
Lynchburg city	65,269	2.30
Manassas city	35,135	2.92
Manassas Park city	10,290	3.16
Martinsville city	15,416	2.27
Newport News city	180,150	2.50
Norfolk city	234,403	2.45
Norton city	3,904	2.23
Petersburg city	33,740	2.38
Poquoson city	11,566	2.75
Portsmouth city	100,565	2.51
Radford city	15,859	2.25
Richmond city	197,790	2.21
Roanoke city	94,911	2.20
Salem city	24,747	2.32
Staunton city	23,853	2.19
Suffolk city	63,677	2.69
Virginia Beach city	425,257	2.70
Waynesboro city	19,520	2.31
Williamsburg city	11,998	2.07
Winchester city	23,585	2.28

DATA SUPPLIED BY FAUQUIER COUNTY WATER AND SANITATION AUTHORITY

Local and Regional Water Supply Planning
Existing Water Source and Water Use Data Entry Template

Local or Regional Plan:	Local ☐ Regional ☑
Political Locality(s):	Fauquier County
Locality FIPS Code(s):	061
Planning Area Population:	
River Basin(s):	Potomac - Shenandoah
	Rappahannock
River Sub-basin(s):	Middle Potomac - Anacostia - Occoquan (02070010)
	Rapidan-Upper Rappahannock (02080103)
Contact Name:	Cheryl St. Amant
Title:	Director of Operations
Mailing Address:	7172 Kennedy Road
City and Zip Code:	Warrenton, VA 20187
Phone:	540-349-2092
Fax:	540-347-7689
E-mail:	camant@fcwsa.org

The following data entry spreadsheets will allow you to enter information regarding the existing water source (9 VAC 25-780-70) and existing water use (9 VAC 25-780-80) water supply planning criteria.

Community Water Systems: Groundwater Sources
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List all well information for community water systems using groundwater. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark well locations on associated map.

COMMUNITY WATER SYSTEMS (MUNCIPAL & PRIVATE) USING GROUND WATER (9 VAC 25-780-70 B)

PWSID	Water System Name	VDH Permitted System Capacity (gpd)	Calculated VDH Permitted System Capacity (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Withdrawal Design Capacity: **AVERAGE DAILY** (gpd)	Withdrawal Design Capacity: **AVERAGE DAILY** (MGD)	Withdrawal Design Capacity: **MAXIMUM DAILY** (gpd)	Withdrawal Design Capacity: **MAXIMUM DAILY** (MGD)	GROUNDWATER MANAGEMENT AREA WELLS: DEQ Permitted **Monthly Withdrawal** (MGD)	DEQ Permitted **Annual Withdrawal** (MGD)	**Notes or Comments** **(This may include references to maps, data sources, data gaps, etc.)**
6061129	Bealeton	564,000.00	0.56												
				Meadowbrook #1	405	54	No well report	6	80,000.00	0.08	144,000.00	0.14	N/A	N/A	Pump yield = 100 gpm
				Meadowbrook #2	500	8	400', 440'	8	108,000.00	0.11	194,400.00	0.19			Pump yield = 135 gpm
				Miller School	490	65	187', 205', 325', 445'	8	136,000.00	0.14	244,800.00	0.24			Pump yield = 170 gpm
				Mintbrook	475	54	78', 272', 392'	8	240,000.00	0.24	432,000.00	0.43			Pump yield = 300 gpm
6061120	Catlett	62,000.00	0.06												
				Catlett #1	270	53	No well report	6	40,000.00	0.04	72,000.00	0.07			Pump yield = 50 gpm
				Catlett #2	207	106	No well report	6	32,000.00	0.03	57,600.00	0.06			Pump yield = 40 gpm
6061318	New Baltimore	936,794.00	0.94												
				Buckland Oaks	305	72	95'	8	60,000.00	0.06	108,000.00	0.11			Pump yield = 75 gpm
				Cedar Run #2	350	99	178', 300'	6	16,800.00	0.02	30,240.00	0.03			Pump yield = 21 gpm
				High Rock	360	95	210', 260', 318'	10	272,000.00	0.27	489,600.00	0.49			Well yield = 340 gpm
				Howell Manor	342	54	89', 99', 281', 288', 324'	6	144,000.00	0.14	259,200.00	0.26			Pump yield = 180 gpm
				Mill Run	265	53	No well report	8	120,000.00	0.12	216,000.00	0.22			Pump yield = 150 gpm
				Mosby Woods	390	77	No well report		56,800.00	0.06	102,240.00	0.10			Pump yield = 71 gpm
				MacRidge	432	107	146', 428'	6	28,000.00	0.03	50,400.00	0.05			Pump yield = 35 gpm
				Rock Springs	405	57	No well report		33,600.00	0.03	60,480.00	0.06			Pump yield = 42 gpm
				Terranova	505	78	85', 202', 275		95,200.00	0.10	171,360.00	0.17			Well yield = 119 gpm
				Rogues Rd G-2	360	63	98', 115', 300'	8	144,000.00	0.14	259,200.00	0.26			Pump yield = 180 gpm
				Rogues Rd G-3	270	53	140', 180'	8	160,000.00	0.16	288,000.00	0.29			Pump yield =- 200 gpm
6061117	Opal	88,000.00	0.09												
				Edgehill	303	53	48', 120', 270	6	26,000.00	0.03	46,800.00	0.05			Pump yield = 32.5 gpm
				English Meadows	300	50	No well report		68,000.00	0.07	122,400.00	0.12			Pump yield = 85 gpm
6061400	Paris	16,000.00	0.02												
				Paris #1	411	63	219', 299', 379	8	9,600.00	0.01	17,280.00	0.02			Pump yield = 12 gpm
				Paris #2	520	63	No well report		9,600.00	0.01	17,280.00	0.02			Pump yield = 12 gpm
6061450	The Plains	54,400.00	0.05												
				Lee Street	610	63	97', 460', 530'	6	14,400.00	0.01	25,920.00	0.03			Pump yield = 18 gpm
				Rt. 55	415	85	No well report		40,000.00	0.04	72,000.00	0.07			Pump yield = 50 gpm
6061134	Green Meadows	40,400.00	0.04												
				Green Meadows #1	225	63	70', 120'	8	56,000.00	0.06	100,800.00	0.10			Pump yield = 70 gpm
				Green Meadows #2	405	60	120', 300'	8	16,000.00	0.02	28,800.00	0.03			Pump yield = 20 gpm
6061505	Remington	47,093.00	0.05												
				The Meadows	400	63	127', 175', 240', 275', 340'	8	48,000.00	0.05	86,400.00	0.09			Pump yield = 60 gpm
				The Ridge	340	60	No well report		36,000.00	0.04	64,800.00	0.06			Pump yield = 45 gpm
6061050	Bethel lAcademy	54,400.00	0.05												
				Bethel #1	455	68	90', 150', 300'	6	25,600.00	0.03	46,080.00	0.05			Pump yield = 32 gpm
				Bethel #2	621	78	40', 70', 350', 530', 560'	6	28,800.00	0.03	51,840.00	0.05			Pump yield = 36 gpm
6061008	Auburn Crossing	19,600.00	0.02	Auburn Crossing	175	84	Not on well report	6	56,000.00	0.06	100,800.00	0.10			Pump yield = 70 gpm
6061057	Botha		0.00	Botha	400		No well report			0.00		0.00			
6061575	Turnbull	15,200.00	0.02	Turnbull	655	84	105', 497', 595'	8	15,200.00	0.02	27,360.00	0.03			Pump yield = 19 gpm
6061666	Whitewood Forest	19,600.00	0.02	Whitewood Forest	300	63	No well report		33,600.00	0.03	60,480.00	0.06			Pump yield = 42 gpm
6061200	Marshall	124,000.00	0.12												

Community Water Systems: Groundwater Sources
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List all well information for community water systems using groundwater. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark well locations on associated map.

COMMUNITY WATER SYSTEMS (MUNCIPAL & PRIVATE) USING GROUND WATER (9 VAC 25-780-70 B)

PWSID	Water System Name	VDH Permitted System Capacity (gpd)	Calculated VDH Permitted System Capacity (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Withdrawal Design Capacity: **AVERAGE DAILY** (gpd)	Withdrawal Design Capacity: **AVERAGE DAILY** (MGD)	Withdrawal Design Capacity: **MAXIMUM DAILY** (gpd)	Withdrawal Design Capacity: **MAXIMUM DAILY** (MGD)	GROUNDWATER MANAGEMENT AREA WELLS: DEQ Permitted **Monthly Withdrawal** (MGD)	DEQ Permitted **Annual Withdrawal** (MGD)	**Notes or Comments** **(This may include references to maps, data sources, data gaps, etc.)**
				Lane	600	63	179', 533'	8		0.00		0.00			Pump yield = 23 gpm
				Lawrence	303		No well report			0.00		0.00			Pump yield = 23 gpm
				Owens			No well report			0.00		0.00			Pump yield = 12 gpm
				Piedmont			No well report			0.00		0.00			Pump yield = 12 gpm
				Salem			No well report			0.00		0.00			Pump yield = 40 gpm
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
			0.00							0.00		0.00			
Existing Source Totals - for all CWS's using wells (MGD)			**2.04**							**2.25**		**4.05**	**0.00**	**0.00**	

Community Water Systems: Reservoir Sources
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List reservoir information for all community water systems using surface water reservoirs. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark reservoirs and intakes on associated map.

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE) USING SURFACE WATER RESERVOIRS (9 VAC 25-780-70 C)

Is your water system comprised of interconnected reservoirs? ☐ **Yes** ☐ **No**

If YES, designate which reservoirs and which intakes constitute a system. Report the drainage area and amount of storage available for water supply from each reservoir independently. Designed maximum daily withdrawal and the safe yield may be reported for the entire system or subsets of the system.

PWSID #	Water System Name	Reservoir Name	Reservoir watershed **Basin/ Sub-basin**	Reservoir watershed **Drainage Area** (square miles)	On-Stream Storage Available for Water Supply (gallons)	On-Stream Storage Available for Water Supply (MG)	**DESIGN CAPACITY:** **Average Daily** Withdrawal (gpd)	**Average Daily** Withdrawal (MGD)	**Maximum Daily** Withdrawal (gpd)	**Maximum Daily** Withdrawal (MGD)	Associated **Water Treatment Plant** (gpd)	Associated **Water Treatment Plant** (MGD)	Reservoir **Safe Yield** (MGD)	VDH Permitted System Capacity (gpd)	VDH Permitted System Capacity (MGD)	Limitations on Withdrawal Permit	**Notes or Comments** **(This may include references to maps, data sources, data gaps, etc.)**
	NOT APPLICABLE					0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
Existing Source Totals - for all CWS's using surface water reservoirs (MG or MGD)						**0.00**		**0.00**		**0.00**		**0.00**			**0.00**		

Community Water Systems: Stream Intake and Spring Sources
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List intake information for all community water systems using stream intakes. Additionally, include a qualitative description of existing in-stream beneficial uses within the planning area or outside the planning area that may be affected by point of stream withdrawal. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark intakes on associated map.

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE) USING STREAM INTAKES* (9 VAC 25-780-70 D, - 80 B10)

*** For municipal or private community water system(s) using springs, list applicable information for your spring sources below.**

PWSID #	Water System Name	Stream, River, or Spring Name	Basin / Sub-basin	Intake Drainage Area (square miles)	DESIGN CAPACITY: Average Daily Withdrawal (gpd)	Average Daily Withdrawal (MGD)	Maximum Daily Withdrawal (gpd)	Maximum Daily Withdrawal (MGD)	Pump Station (gpd)	Pump Station (MGD)	Water Treatment Plant (gpd)	Water Treatment Plant (MGD)	Safe Yield of Stream (MGD)	Lowest Daily Flow of Record (cfs)	VDH Permitted Capacity (gpd)	VDH Permitted Capacity (MGD)	Limitations on Withdrawal Permit	EXISTING INSTREAM BENEFICIAL USES: Within Planning Area	Outside Planning Area	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
	NOT APPLICABLE					0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
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						0.00		0.00		0.00		0.00				0.00				
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						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
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						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
Existing Source Totals - for all CWS's using stream intakes &/or springs (MGD)						**0.00**		**0.00**		**0.00**		**0.00**				**0.00**				

Water Purchases Outside Planning Area
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List information regarding the amount of ground or surface water to be purchased from water supply systems outside the geographic boundaries of the planning area (9 VAC 25-780-70G). Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map.

AMOUNT OF GROUND OR SURFACE WATER TO BE PURCHASED FROM WATER SUPPLY SYSTEMS OUTSIDE THE GEOGRAPHIC BOUNDARIES OF THE PLANNING AREA (9 VAC 25-780-70G)

PWSID#, Community Water System Name	Source:		Amount to be Purchased:				Contract Limitations:				
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	**Maximum Daily** (gpd)	**Maximum Daily** (MGD)	**Average Annual** (gpd)	**Average Annual** (MGD)	Supplier(s) Name(s) (PWSID #)	Contract or Agreement Terms	Recipient(s) **or** Area(s) Served	Contract Limits	Other
NOT APPLICABLE				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
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				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
Total Amount of Water To Be Purchased Outside the Planning Area (MGD):				**0.00**		**0.00**					

List information for the amount of ground or surface water available to be purchased from outside the geographic boundaries of the planning area from water supply systems with the capacity to draw more than 300,000 gallons per month (9 VAC 25-780-70H). Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map.

AMOUNT OF WATER AVAILABLE TO BE PURCHASED, OUTSIDE THE PLANNING AREA, FROM ANY SOURCE WITH CAPACITY TO WITHDRAW MORE THAN 300,000 GALLONS PER MONTH OF SURFACE OR GROUND WATER (9 VAC 25-780-70H)

PWSID#, Community Water System Name	Source:		Amount Available to be Purchased:				Contract Limitations:				
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	**Maximum Daily** (gpd)	**Maximum Daily** (MGD)	**Average Annual** (gpd)	**Average Annual** (MGD)	Supplier(s) Name(s) (PWSID #)	Contract or Agreement Terms	Recipient(s) **or** Area(s) Served	Contract Limits	Other
NOT APPLICABLE				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
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				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
Total Amount of Water Available for Purchase Outside the Planning Area (MGD):				**0.00**		**0.00**					

Source Water Assessments and Wellhead Protection
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Note findings and recommendations from source water assessment plans and/or wellhead protection programs. Reference sources and note any assumptions. If unable to find data or data not applicable, note accordingly. If applicable, mark program/plan areas on associated map.

FINDINGS AND RECOMMENDATIONS FROM APPLICABLE SOURCE WATER ASSESSMENT PLANS OR WELLHEAD PROTECTION PROGRAMS (9 VAC 25-780-70K)

Locality Name	Source Water Assessment Plan(s):		Wellhead Protection Program(s):	
	Date of Plan	Summary of Findings and Recommendations	Date of Program	Summary of Findings and Recommendations
Fauquier County WSA				

Community Water Systems: Withdrawal Information
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 3 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER: ***water withdrawal information*** **(9 VAC 25-780-80 B1-B3)**

YEAR: 2009

PWSID	Water System Name	Source Name	Population Served	Number of Connections	WITHDRAWAL: Average Daily (MGD)	WITHDRAWAL: Maximum Daily (MGD)	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
		Municipal Systems					
6061129	Bealeton		4,551	1,230	0.337	0.554	Includes all sources w/in Water System
		Meadowbrook #1			0	0	Off-Line
		Meadowbrook #2			0.05	0.089	
		Miller School			0.103	0.166	
		Mintbrook			0.184	0.315	
6061120	Catlett		237	64	0.017	0.083	Includes all sources w/in Water System
		Catlett #1			0.008	0.083	
		Catlett #2			0.008	0.048	
6061318	New Baltimore		7,918	2,140	0.615	1.109	Includes all sources w/in Water System
		Buckland Oaks			0.054	0.082	
		Cedar Run #2			0.029	0.04	
		High Rock			0.2	0.441	
		Howell Manor			0.003	0.026	
		Mill Run			0.007	0.168	
		Mosby Woods			0.001	0.061	
		MacRidge			0.019	0.05	
		Rock Springs			0.013	0.03	
		Terranova			0.073	0.153	
		Rogues Rd G-2			0.079	0.243	
		Rogues Rd G-3			0.136	0.28	
6061117	Opal		577	156	0.041	0.066	Includes all sources w/in Water System
		Edgehill			0.014	0.042	
		English Meadows			0.027	0.05	
6061400	Paris		144	39	0.012	0.021	Includes all sources w/in Water System
		Paris #1			0.003	0.016	
		Paris #2			0.009	0.014	
6061450	The Plains		544	147	0.029	0.096	Includes all sources w/in Water System
		Lee Street			0.01	0.029	
		Rt. 55			0.02	0.067	
6061134	Green Meadows		344	93	0.022	0.045	Includes all sources w/in Water System
		Green Meadows #1			0.009	0.034	

Community Water Systems: Withdrawal Information
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 3 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER: ***water withdrawal information*** **(9 VAC 25-780-80 B1-B3)**

YEAR: 2009

PWSID	Water System Name	Source Name	Population Served	Number of Connections	WITHDRAWAL: Average Daily (MGD)	WITHDRAWAL: Maximum Daily (MGD)	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
		Green Meadows #2			0.013	0.034	
6061505	Remington		581	157	0.034	0.081	Includes all sources w/in Water System
		The Meadows			0.012	0.04	
		The Ridge			0.022	0.041	
6061050	Bethel Academy		437	118	0.018	0.031	Includes all sources w/in Water System
		Bethel #1			0.01	0.017	
		Bethel #2			0.008	0.019	
6061008	Auburn Crossing	Auburn Crossing	118	32	0.007	0.027	
6061057	Botha	Botha	63	17	0.003	0.015	
6061575	Turnbull	Turnbull	133	36	0.005	0.02	
6061666	Whitewood Forest	Whitewood Forest	70	19	0.003	0.016	
6061200	Marshall		2,039	551	0.109	0.162	Includes all sources w/in Water System
		Lane			0.03	0.045	
		Lawrence			0.01	0.033	
		Owens			0.015	0.021	
		Piedmont			0.007	0.024	
		Salem			0.047	0.093	
	Municipal Community Water System Totals:		**17,756**	**4,799**	**1.25**		

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Community Water Systems: Withdrawal Information
Fauquier County

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URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 3 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER: ***water withdrawal information*** **(9 VAC 25-780-80 B1-B3)**

YEAR: 2009					WITHDRAWAL:		
PWSID	Water System Name	Source Name	Population Served	Number of Connections	Average Daily (MGD)	Maximum Daily (MGD)	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
		Private Systems					
	Not Applicable						
		Private Community Water System Totals:	0	0	0.00		
		Municipal and Private Community Water System Totals:	17,756	4,799	1.25		

CWS Annual Average and Average Monthly Water Use
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map.
Note the data reference year in Row 6 and fill out a separate spreadsheet for each data year.

Community Water Systems Using Ground and Surface Water: ***annual average and average monthly water use*** **(9 VAC 25-780-80 B4)**

YEAR 2009	PWSID #6061129 Bealeton			PWSID #6061120 Catlett			PWSID #6061318 New Baltimore			PWSID #6061117 Opal			PWSID #6061400 Paris		
	Source: GW			Source: GW			Source: GW			Source: GW			Source: GW		
	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)
January	9,893,500.00	9.89	0.319	764,800.00	0.76	0.025	16,123,577.00	16.12	0.520	1,186,600.00	1.19	0.038	350,700.00	0.35	0.011
February	9,536,500.00	9.54	0.341	666,840.00	0.67	0.024	16,169,727.00	16.17	0.577	1,108,500.00	1.11	0.040	314,700.00	0.31	0.011
March	10,542,500.00	10.54	0.340	459,500.00	0.46	0.015	16,160,139.00	16.16	0.521	1,224,000.00	1.22	0.039	331,200.00	0.33	0.011
April	9,870,200.00	9.87	0.329	439,500.00	0.44	0.015	16,487,557.00	16.49	0.550	1,231,000.00	1.23	0.041	343,100.00	0.34	0.011
May	10,729,900.00	10.73	0.346	499,700.00	0.50	0.016	19,403,925.00	19.40	0.626	1,371,400.00	1.37	0.044	354,000.00	0.35	0.011
June	10,708,900.00	10.71	0.357	374,000.00	0.37	0.012	18,270,612.00	18.27	0.609	1,451,100.00	1.45	0.048	350,300.00	0.35	0.012
July	10,950,200.00	10.95	0.353	497,100.00	0.50	0.016	24,802,459.00	24.80	0.800	1,483,200.00	1.48	0.048	392,300.00	0.39	0.013
August	11,196,100.00	11.20	0.361	463,500.00	0.46	0.015	22,706,770.00	22.71	0.732	1,278,000.00	1.28	0.041	413,400.00	0.41	0.013
September	11,479,700.00	11.48	0.383	418,000.00	0.42	0.014	20,966,238.00	20.97	0.699	1,143,700.00	1.14	0.038	427,800.00	0.43	0.014
October	10,219,700.00	10.22	0.330	489,500.00	0.49	0.016	19,420,427.00	19.42	0.626	1,194,900.00	1.19	0.039	391,200.00	0.39	0.013
November	8,853,800.00	8.85	0.295	469,900.00	0.47	0.016	15,625,003.00	15.63	0.521	1,156,800.00	1.16	0.039	361,900.00	0.36	0.012
December	9,172,400.00	9.17	0.296	539,600.00	0.54	0.017	18,399,249.00	18.40	0.594	1,306,400.00	1.31	0.042	359,300.00	0.36	0.012
Total Annual (MG)		123.15			6.08			224.54			15.14			4.39	
Average Monthly (MG/Mo)		10.26			0.51			18.71			1.26			0.37	
Average Daily (MGD)		0.337			0.017			0.615			0.041			0.012	
NOTES or COMMENTS:															

Worksheet Instructions:
1) Enter the data year and your system name.
2) Enter source code (GW = Ground Water; SW = Surface Water).
3) Enter monthly water use data in gallons.
4) Enter notes or comments (this may include references to maps, data sources, data gaps, etc.) in the approriate cells.
5) If you need additional data entry columns, "unhide" columns V through AU.

CWS Annual Average and Average Monthly Water Use
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

PWSID #6061450 The Plains			PWSID #6061134 Green Meadows			PWSID #6061505 Remington			PWSID #6061050 Bethel Academy			PWSID #6061008 Auburn Crossing			
Source: GW			Source: GW			Source: GW			Source: GW			Source: GW			
Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)
834,860.00	0.83	0.027	634,200.00	0.63	0.020	1,064,500.00	1.06	0.034	503,800.00	0.50	0.016	259,400.00	0.26	0.008	73,020.00
757,400.00	0.76	0.027	561,900.00	0.56	0.020	860,700.00	0.86	0.031	451,600.00	0.45	0.016	149,700.00	0.15	0.005	63,190.00
829,010.00	0.83	0.027	645,300.00	0.65	0.021	1,016,300.00	1.02	0.033	529,300.00	0.53	0.017	175,000.00	0.18	0.006	73,990.00
810,470.00	0.81	0.027	610,100.00	0.61	0.020	953,300.00	0.95	0.032	524,700.00	0.52	0.017	187,900.00	0.19	0.006	69,310.00
1,032,340.00	1.03	0.033	676,800.00	0.68	0.022	1,070,700.00	1.07	0.035	573,700.00	0.57	0.019	175,300.00	0.18	0.006	76,910.00
810,690.00	0.81	0.027	636,300.00	0.64	0.021	1,091,800.00	1.09	0.036	566,100.00	0.57	0.019	189,000.00	0.19	0.006	87,310.00
1,013,300.00	1.01	0.033	744,900.00	0.74	0.024	1,205,600.00	1.21	0.039	623,300.00	0.62	0.020	307,000.00	0.31	0.010	105,630.00
1,086,440.00	1.09	0.035	752,900.00	0.75	0.024	1,208,500.00	1.21	0.039	554,100.00	0.55	0.018	224,000.00	0.22	0.007	131,240.00
920,460.00	0.92	0.031	713,400.00	0.71	0.024	1,041,300.00	1.04	0.035	519,500.00	0.52	0.017	208,100.00	0.21	0.007	186,100.00
882,030.00	0.88	0.028	723,100.00	0.72	0.023	963,900.00	0.96	0.031	521,900.00	0.52	0.017	190,900.00	0.19	0.006	180,690.00
838,310.00	0.84	0.028	695,300.00	0.70	0.023	985,700.00	0.99	0.033	535,400.00	0.54	0.018	194,300.00	0.19	0.006	68,030.00
844,420.00	0.84	0.027	736,900.00	0.74	0.024	972,400.00	0.97	0.031	525,000.00	0.53	0.017	191,900.00	0.19	0.006	72,370.00
	10.66			8.13			12.43			6.43			2.45		
	0.89			0.68			1.04			0.54			0.20		
	0.029			0.022			0.034			0.018			0.007		

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PWSID #6061057 Botha		PWSID #6061575 Turnbull			PWSID #6061666 Whitewood Forest			PWSID #6061200 Marshall			Locality or Region Total Water Use (MG/Mo)	Locality or Region Total Average Monthly by Month (MGD)
Source: GW		Source: GW			Source: GW			Source: GW				
Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)		
0.07	0.002	170,600.00	0.17	0.006	91,000.00	0.09	0.003	3,393,340.00	3.39	0.109	35.34	1.14
0.06	0.002	136,400.00	0.14	0.005	82,400.00	0.08	0.003	2,904,010.00	2.90	0.104	33.76	1.21
0.07	0.002	145,500.00	0.15	0.005	89,300.00	0.09	0.003	3,211,450.00	3.21	0.104	35.43	1.14
0.07	0.002	157,000.00	0.16	0.005	533,760.00	0.53	0.018	3,333,510.00	3.33	0.111	35.55	1.19
0.08	0.002	174,800.00	0.17	0.006	-89,500.00	-0.09	-0.003	3,540,640.00	3.54	0.114	39.59	1.28
0.09	0.003	172,500.00	0.17	0.006	-85,200.00	-0.09	-0.003	3,360,620.00	3.36	0.112	37.98	1.27
0.11	0.003	182,500.00	0.18	0.006	107,900.00	0.11	0.003	3,616,710.00	3.62	0.117	46.03	1.48
0.13	0.004	178,400.00	0.18	0.006	93,600.00	0.09	0.003	3,643,260.00	3.64	0.118	43.93	1.42
0.19	0.006	179,300.00	0.18	0.006	92,200.00	0.09	0.003	3,135,990.00	3.14	0.105	41.43	1.38
0.18	0.006	176,100.00	0.18	0.006	84,900.00	0.08	0.003	3,157,970.00	3.16	0.102	38.60	1.25
0.07	0.002	182,500.00	0.18	0.006	148,300.00	0.15	0.005	3,107,680.00	3.11	0.104	33.22	1.11
0.07	0.002	144,100.00	0.14	0.005	83,800.00	0.08	0.003	3,534,500.00	3.53	0.114	36.88	1.19
1.19			2.00			1.23			39.94		457.76	
0.10			0.17			0.10			3.33		38.15	
0.003			0.005			0.003			0.109		1.254	

Community Water Systems: Peak Day Use
Fauquier County

Office of Water Supply Planning
629 East Main Street,
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URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 6 and fill out a separate spreadsheet for each data year.**

Community Water Systems Using Ground and Surface Water: ***peak day use*** **(9 VAC 25-780-80 B5)**

YEAR 2009	PWSID #6061129 Bealeton		PWSID #6061120 Catlett		PWSID #6061318 New Baltimore		PWSID #6061117 Opal		PWSID #6061400 Paris		PWSID #6061450 The Plains		PWSID #6061134 Green Meadows		PWSID #6061505 Remington	
	Source: GW		Source: GW		Source: GW		Source: GW		Source: GW		Source: GW		Source: GW		Source: GW	
	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)
January	391,800.00	0.392	65,300.00	0.065	689,903.00	0.690	51,000.00	0.051	17,600.00	0.018	53,820.00	0.054	31,000.00	0.031	50,300.00	0.050
February	493,000.00	0.493	55,800.00	0.056	904,592.00	0.905	49,500.00	0.050	13,800.00	0.014	34,650.00	0.035	31,900.00	0.032	42,400.00	0.042
March	411,800.00	0.412	44,800.00	0.045	652,103.00	0.652	63,100.00	0.063	12,400.00	0.012	40,410.00	0.040	34,700.00	0.035	43,800.00	0.044
April	554,000.00	0.554	28,400.00	0.028	877,817.00	0.878	58,100.00	0.058	16,000.00	0.016	50,620.00	0.051	35,300.00	0.035	56,600.00	0.057
May	447,100.00	0.447	35,700.00	0.036	910,944.00	0.911	60,900.00	0.061	15,000.00	0.015	56,560.00	0.057	35,200.00	0.035	76,300.00	0.076
June	488,600.00	0.489	35,000.00	0.035	905,882.00	0.906	75,100.00	0.075	15,500.00	0.016	37,990.00	0.038	33,400.00	0.033	52,700.00	0.053
July	451,800.00	0.452	41,600.00	0.042	1,101,045.00	1.101	66,200.00	0.066	19,900.00	0.020	50,140.00	0.050	41,100.00	0.041	57,200.00	0.057
August	460,000.00	0.460	40,600.00	0.041	1,009,775.00	1.010	62,900.00	0.063	17,800.00	0.018	96,340.00	0.096	42,500.00	0.043	81,000.00	0.081
September	531,500.00	0.532	42,300.00	0.042	942,088.00	0.942	51,000.00	0.051	20,800.00	0.021	40,150.00	0.040	36,100.00	0.036	46,400.00	0.046
October	420,300.00	0.420	37,300.00	0.037	909,919.00	0.910	61,600.00	0.062	17,800.00	0.018	31,770.00	0.032	45,200.00	0.045	46,800.00	0.047
November	334,100.00	0.334	35,400.00	0.035	671,609.00	0.672	52,600.00	0.053	18,500.00	0.019	40,640.00	0.041	34,600.00	0.035	65,600.00	0.066
December	344,900.00	0.345	82,700.00	0.083	1,109,262.00	1.109	57,900.00	0.058	16,800.00	0.017	38,570.00	0.039	42,200.00	0.042	42,800.00	0.043
NOTES or COMMENTS:																

Worksheet Instructions:

1) Enter the data year and your system name.

2) Enter source code (GW = Ground Water; SW = Surface Water).

3) Enter peak day water use for each month in gallons per day (gpd). If you only have peak day data for your peak month (one month), enter that value in the appropriate cell.

4) If you do not have daily data for your system, but know your peak month then estimate your peak day use by using the following equation and enter this information into the applicable month cell above.

Peak Day "Raw" Water Use (gpd) =
Average Daily Withdrawal* (MGD) X 10^6 (g/MG) X 1.5 Peaking Factor
**from worksheet "80 B1-B3 CWS Use"*

5) Enter notes or comments (this may include references to maps, data sources, data gaps, etc.) in the approriate cells.

6) If you need additional data entry columns, "unhide" columns K through AN.

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PWSID #6061050 Bethel Academy		PWSID #6061008 Auburn Crossing		PWSID #6061057 Botha		PWSID #6061575 Turnbull		PWSID #6061666 Whitewood Forest		PWSID #6061200 Marshall	
Source: GW		Source: GW		Source: GW		Source: GW		Source: GW		Source: GW	
Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)
23,400.00	0.023	26,900.00	0.027	3,960.00	0.004	19,900.00	0.020	5,400.00	0.005	143,150.00	0.143
23,900.00	0.024	7,100.00	0.007	3,680.00	0.004	14,800.00	0.015	4,500.00	0.005	133,890.00	0.134
26,500.00	0.027	8,400.00	0.008	4,220.00	0.004	6,700.00	0.007	7,700.00	0.008	135,190.00	0.135
27,000.00	0.027	11,200.00	0.011	3,330.00	0.003	11,200.00	0.011	5,200.00	0.005	135,230.00	0.135
27,400.00	0.027	9,200.00	0.009	4,500.00	0.005	10,000.00	0.010	4,500.00	0.005	162,380.00	0.162
31,100.00	0.031	9,900.00	0.010	4,260.00	0.004	9,200.00	0.009	5,400.00	0.005	132,180.00	0.132
30,900.00	0.031	18,800.00	0.019	4,740.00	0.005	9,200.00	0.009	7,900.00	0.008	143,270.00	0.143
26,600.00	0.027	10,700.00	0.011	5,560.00	0.006	11,500.00	0.012	4,700.00	0.005	160,810.00	0.161
23,300.00	0.023	12,200.00	0.012	7,830.00	0.008	17,100.00	0.017	5,700.00	0.006	117,680.00	0.118
21,000.00	0.021	8,300.00	0.008	14,510.00	0.015	8,300.00	0.008	4,700.00	0.005	119,160.00	0.119
24,400.00	0.024	10,700.00	0.011	3,700.00	0.004	9,100.00	0.009	15,700.00	0.016	121,490.00	0.121
23,400.00	0.023	10,500.00	0.011	3,370.00	0.003	8,800.00	0.009	8,300.00	0.008	159,810.00	0.160

Community Water Systems: Disaggregated Use
Fauquier County

Office of Water Supply Planning
629 East Main Street,
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URL: http://www.deq.virginia.gov/watersupplyplanning/

For each community water system included in the water plan, include an estimate of the disaggregated annual average amount of water used in categories of use appropriate for the system. Reference sources and note any assumptions regarding calculations. **If unable to find data or data not applicable, note accordingly in the Notes/Comments Column and highlight applicable cells. Note the data reference year in Row 4 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE): DISAGGREGATED ANNUAL AVERAGE WATER USE AMOUNTS (9 VAC 25-780-80 B9)

YEAR: 2009			USAGE CATEGORIES:																	Notes or Comments
																	Sales to Other CWS's:			
PWSID	Water System Name	System Total (MGD)	Residential (gpd)	Residential (MGD)	Commercial Institutional Light Industrial CIL (gpd)	Commercial Institutional Light Industrial CIL (MGD)	Heavy Industrial (gpd)	Heavy Industrial (MGD)	Military (gpd)	Military (MGD)	Other (gpd)	Other (MGD)	Production Processes (gpd)	Production Processes (MGD)	Unaccounted for Losses (gpd)	Unaccounted for Losses (MGD)	Amount Sold (gpd)	Amount Sold (MGD)	System Name	(This may include references to maps, data sources, data gaps, etc.)
6061129	Bealeton	0.310	197,344.00	0.197	56,954.00	0.057	0.00	0.000	0.00	0.000	8,336.18	0.008	0.00	0.000	47,107.45	0.047	0.00	0.000		
6061120	Catlett	0.017	8,519.00	0.009	265.00	0.000	0.00	0.000	0.00	0.000	636.20	0.001	0.00	0.000	7,625.39	0.008	0.00	0.000		
6061318	New Baltimore	0.602	416,208.00	0.416	38,816.00	0.039	0.00	0.000	0.00	0.000	42,224.65	0.042	0.00	0.000	104,722.14	0.105	0.00	0.000		
6061117	Opal	0.040	20,757.00	0.021	8,315.00	0.008	0.00	0.000	0.00	0.000	153.42	0.000	0.00	0.000	10,848.60	0.011	0.00	0.000		
6061400	Paris	0.012	5,340.00	0.005	0.00	0.000	0.00	0.000	0.00	0.000	246.58	0.000	0.00	0.000	6,699.18	0.007	0.00	0.000		
6061450	The Plains	0.030	13,525.00	0.014	4,854.00	0.005	0.00	0.000	0.00	0.000	544.30	0.001	0.00	0.000	10,830.14	0.011	0.00	0.000		
6061134	Green Meadows	0.022	12,884.00	0.013	0.00	0.000	0.00	0.000	0.00	0.000	126.03	0.000	0.00	0.000	9,345.75	0.009	0.00	0.000		
6061505	Remington	0.032	28,589.00	0.029	0.00	0.000	0.00	0.000	0.00	0.000	356.16	0.000	0.00	0.000	2,892.10	0.003	0.00	0.000		
6061050	Bethel Academy	0.017	16,377.00	0.016	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	980.10	0.001	0.00	0.000		
6061008	Auburn Crossing	0.006	5,515.00	0.006	0.00	0.000	0.00	0.000	0.00	0.000	54.79	0.000	0.00	0.000	865.81	0.001	0.00	0.000		
6061057	Botha	0.004	2,194.00	0.002	0.00	0.000	0.00	0.000	0.00	0.000	38.36	0.000	0.00	0.000	1,850.74	0.002	0.00	0.000		
6061575	Turnbull	0.005	5,233.00	0.005	0.00	0.000	0.00	0.000	0.00	0.000	46.30	0.000	0.00	0.000	57.89	0.000	0.00	0.000		
6061666	Whitewood Forest	0.003	2,436.00	0.002	0.00	0.000	0.00	0.000	0.00	0.000	43.84	0.000	0.00	0.000	800.33	0.001	0.00	0.000		
6061200	Marshall	0.094	56,086.00	0.056	18,695.00	0.019	0.00	0.000	0.00	0.000	1,315.07	0.001	0.00	0.000	17,980.99	0.018	0.00	0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
Total Use By Category in MGD (for All Community Water Systems)		**1.196**		**0.791**		**0.128**		**0.000**		**0.000**		**0.054**		**0.000**		**0.223**		**0.000**		

Non-Agricultural, Self-Supplied Users of Surface Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural surface water source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column I, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF SURFACE WATER (9 VAC 25-780-70 E, - 80 B6, and - 80 C)

Water User Name	Waterbody Source Name	Use Category	DESIGN CAPACITY: Average Daily Withdrawal (gpd)	DESIGN CAPACITY: Average Daily Withdrawal (MGD)	DESIGN CAPACITY: Maximum Daily Withdrawals (gpd)	DESIGN CAPACITY: Maximum Daily Withdrawals (MGD)	Limitations on Withdrawal Permit(s)	WATER USE: Estimated Annual Average (MGD) Year 2XXX	Notes or Comments (Include service area user falls within and references to any maps, data sources, data gaps, etc.)
Within Community Water System (Municipal & Private) Service Areas									
Not Applicable				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
Within Community Water System Service Area Totals (MGD):				0.000		0.000		0.000	

Non-Agricultural, Self-Supplied Users of Surface Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural surface water source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column I, Row 4 <u>and</u> fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF SURFACE WATER (9 VAC 25-780-70 E, - 80 B6, and - 80 C)

			DESIGN CAPACITY:					WATER USE:	Notes or Comments
Water User Name	Waterbody Source Name	Use Category	**Average Daily** Withdrawal (gpd)	**Average Daily** Withdrawal (MGD)	**Maximum Daily** Withdrawals (gpd)	**Maximum Daily** Withdrawals (MGD)	Limitations on Withdrawal Permit(s)	Estimated **Annual Average** (MGD) Year **2XXX**	**(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
	Outside Community Water System (Municipal & Private) Service Areas								
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
Outside Community Water System Service Area Totals (MGD):				0.000		0.000		0.000	
Self-Supplied Nonagricultural Users of Surface Water Totals (MGD):				0.000		0.000		0.000	

Non-Agricultural, Self-Supplied Users of Ground Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural groundwater source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column M, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF GROUND WATER (9 VAC 25-780-70 F, - 80 B6, and - 80 C)

		DESIGN CAPACITY:				INDIVIDUAL WELL DATA:						WATER USE:	Notes or Comments
Water User Name	Use Category	**Average Daily** Withdrawals (gpd)	**Average Daily** Withdrawals (MGD)	**Maximum Daily** Withdrawals (gpd)	**Maximum Daily** Withdrawals (MGD)	Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Limitations on Withdrawal Permit(s)	Estimated **Annual Average** (MGD) YEAR **2XXX**	**(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
Within Community Water System (Municipal & Private) Service Areas													
Not Applicable			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
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			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
Within CWS Service Area Totals (MGD):			**0.000**		**0.000**							**0.000**	

Non-Agricultural, Self-Supplied Users of Ground Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural groundwater source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column M, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF GROUND WATER (9 VAC 25-780-70 F, - 80 B6, and - 80 C)

		DESIGN CAPACITY:				INDIVIDUAL WELL DATA:						WATER USE:	Notes or Comments
Water User Name	Use Category	**Average Daily** Withdrawals (gpd)	**Average Daily** Withdrawals (MGD)	**Maximum Daily** Withdrawals (gpd)	**Maximum Daily** Withdrawals (MGD)	Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) or Water Zones	Well Diameter (inches)	Limitations on Withdrawal Permit(s)	Estimated **Annual Average** (MGD) YEAR **2XXX**	**(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
			Outside Community Water System (Municipal & Private) Service Areas										
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
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			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
Outside CWS Service Area Totals (MGD):			0.000		0.000							0.000	
Self-Supplied Nonagricultural Users of Ground Water Totals (MGD):			0.000		0.000							0.000	
Self-Supplied Nonagricultural Users Totals (surface and groundwater in MGD):			0.000		0.000							0.000	

Agricultural, Self-Supplied Users
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List data for all agricultural users who utilize more than 300,000 gallons per month of ground or surface water. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map. **Note the data reference year in Column F, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, AGRICULTURAL USERS > 300,000 GAL/MONTH OF GROUND OR SURFACE WATER (9 VAC 25-780-70 I, -80B7, and -80D)

User Name	SOURCE TYPE:		USE TYPE:		WATER USE:		Notes or Comments
			Irrigation	Nonirrigation	Estimated **Annual Average** (MGD) Year **2XXX**		
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	(Place an "**X**" in appropriate column cell)		Surface Water (MGD)	Ground Water (MGD)	**(Include service area user falls within and any references to maps, data sources, data gaps, etc.)**
	Within Community Water System (Municipal & Private) Service Areas						
Not Applicable							
Within Community Water System Service Area Water Use Totals (MGD):					**0.000**	**0.000**	

Agricultural, Self-Supplied Users
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List data for all agricultural users who utilize more than 300,000 gallons per month of ground or surface water. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map. **Note the data reference year in Column F, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, AGRICULTURAL USERS > 300,000 GAL/MONTH OF GROUND OR SURFACE WATER (9 VAC 25-780-70 I, -80B7, and -80D)

User Name	SOURCE TYPE:		USE TYPE:		WATER USE:		Notes or Comments
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	Irrigation	Nonirrigation	Estimated **Annual Average** (MGD) Year **2XXX**		
			(Place an "**X**" in appropriate column cell)		Surface Water (MGD)	Ground Water (MGD)	**(Include service area user falls within and any references to maps, data sources, data gaps, etc.)**
Outside Community Water System (Municipal & Private) Service Areas							
Outside Community Water System Service Area Water Use Totals (MGD):					**0.000**	**0.000**	
Estimated Total Agricultural Useage By Source (MGD):					**0.000**	**0.000**	

Self-Supplied, Individual Well Users
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Estimate well use information for small, self-supplied users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. **Note the data reference year in Row 7.**

ESTIMATED NUMBER OF RESIDENCES AND BUSINESSES THAT ARE SELF-SUPPLIED BY INDIVIDUAL WELLS WITHDRAWING LESS THAN 300,000 GALLONS PER MONTH (9 VAC 25-780-70J); ESTIMATED WATER USE BY SELF-SUPPLIED USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

	ESTIMATING SMALL SELF-SUPPLIED USERS						ESTIMATING SMALL SELF-SUPPLIED WATER USE										
	Step 1: Estimate Total Population of Individual Self-Supplied Well Users			Step 2: Estimate Number of Residences and Businesses on Individual Wells			Step 3: Estimate Total Self-Supplied Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4: Estimate Total Self-Supplied Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA					
Locality	Locality Population YEAR 2XXX	Total Population Served by Community Water System(s) YEAR 2XXX	Estimated Population Served by Individual Wells	Locality Specific Population Per Household Factor	Estimated Number of **RESIDENCES** on Wells (Column D ÷ Column E)	Estimated Number of **BUSINESSES** on Wells	Estimated Population Served by Individual Wells	Per Capita Water Use Factor (gal/person/day)	Average Annual Residential Use (gpd) (Column H x Column I)	Average Annual Business Use (gpd) (SSU Business Data)	Estimated Average Annual Use (MGD)	# of Self-Supplied Residences Within Service Area	Locality Specific Population Per Household Factor	Per Capita Water Use Factor (gal/person/day)	Average Annual Residential Use (gpd) (Columns M x N x O)	Average Annual Business Use (gpd) (SSU Business Data)	Estimated Annual Average Use (MGD)
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
Not Applicable			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
Planning Area Totals:	0	0	0		0	0	0		0	0	0.000	0			0	0	0.000

Notes or Comments: (This may include references to maps, data sources, data gaps, etc.)	FCWSA supports two (2) Salem Church and Rt. 774. Small, self-supplied users with less than 300,000 gpm.

Self-Supplied, Individual Well Users: Businesses
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Estimate well use information for small, self-supplied business users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly.
Record the data reference year, from your data sources, in Row 5. **Fill out a separate sheet for each locality in your region.**

ESTIMATED WATER USE BY SELF-SUPPLIED BUSINESS USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

Locality Name
Year: 2XXX

Use this spreadsheet to fill out columns K and Q on the main "70J, 80B8, 80E SSU" spreadsheet

ESTIMATING SMALL SELF-SUPPLIED BUSINESS WATER USE									
Step 3 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA				
Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column B x Column C)	Estimated Average Annual Business Use (MGD)	Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column G x Column H)	Estimated Average Annual Business Use (MGD)
Not Applicable			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
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			0	0.000				0	0.000
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			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000

Self-Supplied, Individual Well Users: Businesses
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Estimate well use information for small, self-supplied business users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly.
Record the data reference year, from your data sources, in Row 5. **Fill out a separate sheet for each locality in your region.**

ESTIMATED WATER USE BY SELF-SUPPLIED BUSINESS USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

Locality Name
Year: 2XXX

Use this spreadsheet to fill out columns K and Q on the main "70J, 80B8, 80E SSU" spreadsheet

ESTIMATING SMALL SELF-SUPPLIED BUSINESS WATER USE									
Step 3 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA				
Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column B x Column C)	Estimated Average Annual Business Use (MGD)	Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column G x Column H)	Estimated Average Annual Business Use (MGD)
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
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			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
Locality Name : Outside Service Area Totals	0		0	0.000	***Locality Name : Within Service Area Totals***	0		0	0.000

Notes or Comments: (This may include references to maps, data sources, data gaps, etc.)	

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Virginia	7,078,515	2.54
Accomack County	38,305	2.45
Albemarle County	79,236	2.44
Alleghany County	12,926	2.46
Amelia County	11,400	2.66
Amherst County	31,894	2.51
Appomattox County	13,705	2.55
Arlington County	189,453	2.15
Augusta County	65,615	2.56
Bath County	5,048	2.34
Bedford County	60,371	2.52
Bland County	6,871	2.43
Botetourt County	30,496	2.56
Brunswick County	18,419	2.47
Buchanan County	26,978	2.46
Buckingham County	15,623	2.52
Campbell County	51,078	2.45
Caroline County	22,121	2.69
Carroll County	29,245	2.36
Charles City County	6,926	2.59
Charlotte County	12,472	2.47
Chesterfield County	259,903	2.73
Clarke County	12,652	2.50
Craig County	5,091	2.45
Culpeper County	34,262	2.68
Cumberland County	9,017	2.55
Dickenson County	16,395	2.42
Dinwiddie County	24,533	2.58
Essex County	9,989	2.46
Fairfax County	969,749	2.74
Fauquier County	55,139	2.75
Floyd County	13,874	2.39
Fluvanna County	20,047	2.59
Franklin County	47,286	2.44
Frederick County	59,209	2.64
Giles County	16,657	2.37
Gloucester County	34,780	2.62
Goochland County	16,863	2.51
Grayson County	17,917	2.31
Greene County	15,244	2.71
Greensville County	11,560	2.51
Halifax County	37,355	2.43
Hanover County	86,320	2.71
Henrico County	262,300	2.39
Henry County	57,930	2.40
Highland County	2,536	2.24

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Isle of Wight County	29,728	2.61
James City County	48,102	2.47
King and Queen County	6,630	2.48
King George County	16,803	2.70
King William County	13,146	2.69
Lancaster County	11,567	2.23
Lee County	23,589	2.41
Loudoun County	169,599	2.82
Louisa County	25,627	2.56
Lunenburg County	13,146	2.39
Madison County	12,520	2.60
Mathews County	9,207	2.32
Mecklenburg County	32,380	2.38
Middlesex County	9,932	2.27
Montgomery County	83,629	2.40
Nelson County	14,445	2.42
New Kent County	13,462	2.65
Northampton County	13,093	2.39
Northumberland County	12,259	2.24
Nottoway County	15,725	2.48
Orange County	25,881	2.50
Page County	23,177	2.46
Patrick County	19,407	2.36
Pittsylvania County	61,745	2.49
Powhatan County	22,377	2.74
Prince Edward County	19,720	2.43
Prince George County	33,047	2.76
Prince William County	280,813	2.94
Pulaski County	35,127	2.32
Rappahannock County	6,983	2.50
Richmond County	8,809	2.40
Roanoke County	85,778	2.41
Rockbridge County	20,808	2.43
Rockingham County	67,725	2.61
Russell County	30,308	2.44
Scott County	23,403	2.35
Shenandoah County	35,075	2.42
Smyth County	33,081	2.37
Southampton County	17,482	2.53
Spotsylvania County	90,395	2.87
Stafford County	92,446	3.01
Surry County	6,829	2.61
Sussex County	12,504	2.41
Tazewell County	44,598	2.40
Warren County	31,584	2.57
Washington County	51,103	2.36

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Westmoreland County	16,718	2.43
Wise County	40,123	2.44
Wythe County	27,599	2.36
York County	56,297	2.78
Alexandria city	128,283	2.04
Bedford city	6,299	2.26
Bristol city	17,367	2.18
Buena Vista city	6,349	2.38
Charlottesville city	45,049	2.27
Chesapeake city	199,184	2.79
Clifton Forge city	4,289	2.22
Colonial Heights city	16,897	2.37
Covington city	6,303	2.22
Danville city	48,411	2.27
Emporia city	5,665	2.43
Fairfax city	21,498	2.61
Falls Church city	10,377	2.31
Franklin city	8,346	2.39
Fredericksburg city	19,279	2.09
Galax city	6,837	2.27
Hampton city	146,437	2.49
Harrisonburg city	40,468	2.53
Hopewell city	22,354	2.43
Lexington city	6,867	2.06
Lynchburg city	65,269	2.30
Manassas city	35,135	2.92
Manassas Park city	10,290	3.16
Martinsville city	15,416	2.27
Newport News city	180,150	2.50
Norfolk city	234,403	2.45
Norton city	3,904	2.23
Petersburg city	33,740	2.38
Poquoson city	11,566	2.75
Portsmouth city	100,565	2.51
Radford city	15,859	2.25
Richmond city	197,790	2.21
Roanoke city	94,911	2.20
Salem city	24,747	2.32
Staunton city	23,853	2.19
Suffolk city	63,677	2.69
Virginia Beach city	425,257	2.70
Waynesboro city	19,520	2.31
Williamsburg city	11,998	2.07
Winchester city	23,585	2.28

DATA SUPPLIED FOR THE VINT HILL ECONOMIC DEVELOPMENT AUTHORITY (VHEDA)

Local and Regional Water Supply Planning
Existing Water Source and Water Use Data Entry Template

Local or Regional Plan:	Local ☑ Regional ☐
Political Locality(s):	Fauquier County
Locality FIPS Code(s):	061
Planning Area Population:	
River Basin(s):	Potomac - Shenandoah
River Sub-basin(s):	Middle Potomac - Anacostia - Occoquan (02070010)
Contact Name:	TBD - Vint Hill EDA
Title:	TBD
Mailing Address:	4263 Aiken Drive
City and Zip Code:	Warrenton, VA 20187
Phone:	540-347-6965
Fax:	TBD
E-mail:	TBD

The following data entry spreadsheets will allow you to enter information regarding the existing water source (9 VAC 25-780-70) and existing water use (9 VAC 25-780-80) water supply planning criteria.

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Community Water Systems: Groundwater Sources
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List all well information for community water systems using groundwater. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark well locations on associated map.

COMMUNITY WATER SYSTEMS (MUNCIPAL & PRIVATE) USING GROUND WATER (9 VAC 25-780-70 B)

PWSID	Water System Name	VDH Permitted System Capacity (gpd)	Calculated VDH Permitted System Capacity (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Withdrawal Design Capacity: **AVERAGE DAILY** (gpd)	Withdrawal Design Capacity: **AVERAGE DAILY** (MGD)	Withdrawal Design Capacity: **MAXIMUM DAILY** (gpd)	Withdrawal Design Capacity: **MAXIMUM DAILY** (MGD)	GROUNDWATER MANAGEMENT AREA WELLS: DEQ Permitted **Monthly Withdrawal** (MGD)	DEQ Permitted **Annual Withdrawal** (MGD)	**Notes or Comments (This may include references to maps, data sources, data gaps, etc.)**
6061595	Vint Hill	294,400.00	0.29												
				Vint Hill #1	415'			8"		0.00		0.00	N/A	N/A	Pump yield = 63 gpm
				Vint Hill #3	450'			8"		0.00		0.00			Pump yield = 175 gpm
				Vint Hill #4	650'			10"		0.00		0.00			Pump yield = 130 gpm
Existing Source Totals - for all CWS's using wells (MGD)			0.29							0.00		0.00	0.00	0.00	

Community Water Systems: Reservoir Sources
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List reservoir information for all community water systems using surface water reservoirs. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark reservoirs and intakes on associated map.

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE) USING SURFACE WATER RESERVOIRS (9 VAC 25-780-70 C)

Is your water system comprised of interconnected reservoirs? ☐ **Yes** ☐ **No**

If YES, designate which reservoirs and which intakes constitute a system. Report the drainage area and amount of storage available for water supply from each reservoir independently. Designed maximum daily withdrawal and the safe yield may be reported for the entire system or subsets of the system.

PWSID #	Water System Name	Reservoir Name	Reservoir watershed **Basin/ Sub-basin**	Reservoir watershed **Drainage Area** (square miles)	On-Stream Storage Available for Water Supply (gallons)	On-Stream Storage Available for Water Supply (MG)	**DESIGN CAPACITY:** **Average Daily** Withdrawal (gpd)	**Average Daily** Withdrawal (MGD)	**Maximum Daily** Withdrawal (gpd)	**Maximum Daily** Withdrawal (MGD)	Associated **Water Treatment Plant** (gpd)	Associated **Water Treatment Plant** (MGD)	Reservoir **Safe Yield** (MGD)	VDH Permitted System Capacity (gpd)	VDH Permitted System Capacity (MGD)	Limitations on Withdrawal Permit	**Notes or Comments** **(This may include references to maps, data sources, data gaps, etc.)**
	NOT APPLICABLE					0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
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						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
						0.00		0.00		0.00		0.00			0.00		
Existing Source Totals - for all CWS's using surface water reservoirs (MG or MGD)						**0.00**		**0.00**		**0.00**		**0.00**			**0.00**		

Community Water Systems: Stream Intake and Spring Sources
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List intake information for all community water systems using stream intakes. Additionally, include a qualitative description of existing in-stream beneficial uses within the planning area or outside the planning area that may be affected by point of stream withdrawal. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark intakes on associated map.

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE) USING STREAM INTAKES* (9 VAC 25-780-70 D, - 80 B10)

*** For municipal or private community water system(s) using springs, list applicable information for your spring sources below.**

PWSID #	Water System Name	Stream, River, or Spring Name	Basin / Sub-basin	Intake Drainage Area (square miles)	DESIGN CAPACITY: Average Daily Withdrawal (gpd)	Average Daily Withdrawal (MGD)	Maximum Daily Withdrawal (gpd)	Maximum Daily Withdrawal (MGD)	Pump Station (gpd)	Pump Station (MGD)	Water Treatment Plant (gpd)	Water Treatment Plant (MGD)	Safe Yield of Stream (MGD)	Lowest Daily Flow of Record (cfs)	VDH Permitted Capacity (gpd)	VDH Permitted Capacity (MGD)	Limitations on Withdrawal Permit	EXISTING INSTREAM BENEFICIAL USES: Within Planning Area	Outside Planning Area	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
	NOT APPLICABLE					0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
						0.00		0.00		0.00		0.00				0.00				
Existing Source Totals - for all CWS's using stream intakes &/or springs (MGD)						**0.00**		**0.00**		**0.00**		**0.00**				**0.00**				

Water Purchases Outside Planning Area
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List information regarding the amount of ground or surface water to be purchased from water supply systems outside the geographic boundaries of the planning area (9 VAC 25-780-70G). Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map.

AMOUNT OF GROUND OR SURFACE WATER TO BE PURCHASED FROM WATER SUPPLY SYSTEMS OUTSIDE THE GEOGRAPHIC BOUNDARIES OF THE PLANNING AREA (9 VAC 25-780-70G)

PWSID#, Community Water System Name	Source:		Amount to be Purchased:				Contract Limitations:				
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	Maximum Daily (gpd)	Maximum Daily (MGD)	Average Annual (gpd)	Average Annual (MGD)	Supplier(s) Name(s) (PWSID #)	Contract or Agreement Terms	Recipient(s) or Area(s) Served	Contract Limits	Other
NOT APPLICABLE				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
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				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
Total Amount of Water To Be Purchased Outside the Planning Area (MGD):				0.00		0.00					

List information for the amount of ground or surface water available to be purchased from outside the geographic boundaries of the planning area from water supply systems with the capacity to draw more than 300,000 gallons per month (9 VAC 25-780-70H). Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map.

AMOUNT OF WATER AVAILABLE TO BE PURCHASED, OUTSIDE THE PLANNING AREA, FROM ANY SOURCE WITH CAPACITY TO WITHDRAW MORE THAN 300,000 GALLONS PER MONTH OF SURFACE OR GROUND WATER (9 VAC 25-780-70H)

PWSID#, Community Water System Name	Source:		Amount Available to be Purchased:				Contract Limitations:				
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	Maximum Daily (gpd)	Maximum Daily (MGD)	Average Annual (gpd)	Average Annual (MGD)	Supplier(s) Name(s) (PWSID #)	Contract or Agreement Terms	Recipient(s) or Area(s) Served	Contract Limits	Other
NOT APPLICABLE				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
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				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
				0.00		0.00					
Total Amount of Water Available for Purchase Outside the Planning Area (MGD):				0.00		0.00					

Source Water Assessments and Wellhead Protection
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Note findings and recommendations from source water assessment plans and/or wellhead protection programs. Reference sources and note any assumptions. If unable to find data or data not applicable, note accordingly. If applicable, mark program/plan areas on associated map.

FINDINGS AND RECOMMENDATIONS FROM APPLICABLE SOURCE WATER ASSESSMENT PLANS OR WELLHEAD PROTECTION PROGRAMS (9 VAC 25-780-70K)

Locality Name	Source Water Assessment Plan(s):		Wellhead Protection Program(s):	
	Date of Plan	Summary of Findings and Recommendations	Date of Program	Summary of Findings and Recommendations
Fauquier County WSA				

Community Water Systems: Withdrawal Information
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 3 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER: ***water withdrawal information*** **(9 VAC 25-780-80 B1-B3)**

YEAR: 2010

PWSID	Water System Name	Source Name	Population Served	Number of Connections	WITHDRAWAL: Average Daily (MGD)	WITHDRAWAL: Maximum Daily (MGD)	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
		Municipal Systems					
6061595	Vint Hill		1,325	358	0.117	0.332	Includes all sources w/in Water System
		Vint Hill #1			0.031	0.13	
		Vint Hill #3			0.054	0.221	
		Vint Hill #4			0.032	0.157	
		Municipal Community Water System Totals:	**1,325**	**358**	**0.12**		

Community Water Systems: Withdrawal Information
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 3 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER: ***water withdrawal information*** **(9 VAC 25-780-80 B1-B3)**

YEAR: 2010

PWSID	Water System Name	Source Name	Population Served	Number of Connections	WITHDRAWAL: Average Daily (MGD)	WITHDRAWAL: Maximum Daily (MGD)	Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
		Private Systems					
	Not Applicable						
		Private Community Water System Totals:	**0**	**0**	**0.00**		
		Municipal and Private Community Water System Totals:	**1,325**	**358**	**0.12**		

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map.
Note the data reference year in Row 6 and fill out a separate spreadsheet for each data year.

Community Water Systems Using Ground and Surface Water: ***annual average and average monthly water use*** **(9 VAC 25-780-80 B4)**

YEAR 2009	PWSID #6061595 Vint Hill			Locality or Region Total Water Use (MG/Mo)	Locality or Region Total Average Monthly by Month (MGD)
	Source: GW				
	Monthly Readings (gallons)	Monthly Readings (MG)	Average Monthly (MGD)		
January	3,357,600.00	3.36	0.108	3.36	0.11
February	3,394,600.00	3.39	0.121	3.39	0.12
March	3,115,000.00	3.12	0.100	3.12	0.10
April	3,760,800.00	3.76	0.125	3.76	0.13
May	3,967,700.00	3.97	0.128	3.97	0.13
June	4,329,500.00	4.33	0.144	4.33	0.14
July	4,603,900.00	4.60	0.149	4.60	0.15
August	4,015,600.00	4.02	0.130	4.02	0.13
September	3,931,500.00	3.93	0.131	3.93	0.13
October	3,499,700.00	3.50	0.113	3.50	0.11
November	2,274,000.00	2.27	0.076	2.27	0.08
December	2,352,700.00	2.35	0.076	2.35	0.08
Total Annual (MG)		42.60		42.60	
Average Monthly (MG/Mo)		3.55		3.55	
Average Daily (MGD)		0.117		0.117	
NOTES or COMMENTS:					

Worksheet Instructions:
1) Enter the data year and your system name.
2) Enter source code (GW = Ground Water; SW = Surface Water).
3) Enter monthly water use data in gallons.
4) Enter notes or comments (this may include references to maps, data sources, data gaps, etc.) in the approriate cells.
5) If you need additional data entry columns, "unhide" columns V through AU.

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Include the following water use information for each community water system within the planning area. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark service areas on associated map. **Note the data reference year in Row 6 and fill out a separate spreadsheet for each data year.**

Community Water Systems Using Ground and Surface Water:
peak day use **(9 VAC 25-780-80 B5)**

YEAR 2009	PWSID #6061595 Vint Hill		PWSID # System Name		PWSID # System Name		PWSID # System Name		PWSID # System Name		PWSID # System Name		PWSID # System Name	
	Source: GW		Source (GW or SW)		Source (GW or SW)		Source (GW or SW)		Source (GW or SW)		Source (GW or SW)		Source (GW or SW)	
	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)	Peak Day Readings (gpd)	Peak Day Readings (MGD)
January	331,600.00	0.332		0.000		0.000		0.000		0.000		0.000		0.000
February	321,900.00	0.322		0.000		0.000		0.000		0.000		0.000		0.000
March	281,100.00	0.281		0.000		0.000		0.000		0.000		0.000		0.000
April	273,500.00	0.274		0.000		0.000		0.000		0.000		0.000		0.000
May	232,800.00	0.233		0.000		0.000		0.000		0.000		0.000		0.000
June	257,100.00	0.257		0.000		0.000		0.000		0.000		0.000		0.000
July	281,200.00	0.281		0.000		0.000		0.000		0.000		0.000		0.000
August	184,800.00	0.185		0.000		0.000		0.000		0.000		0.000		0.000
September	234,100.00	0.234		0.000		0.000		0.000		0.000		0.000		0.000
October	246,400.00	0.246		0.000		0.000		0.000		0.000		0.000		0.000
November	168,800.00	0.169		0.000		0.000		0.000		0.000		0.000		0.000
December	185,000.00	0.185		0.000		0.000		0.000		0.000		0.000		0.000
NOTES or COMMENTS:														

Worksheet Instructions:

1) Enter the data year and your system name.
2) Enter source code (GW = Ground Water; SW = Surface Water).
3) Enter peak day water use for each month in gallons per day (gpd). If you only have peak day data for your peak month (one month), enter that value in the appropriate cell.
4) If you do not have daily data for your system, but know your peak month then estimate your peak day use by using the following equation
and enter this information into the applicable month cell above.
5) Enter notes or comments (this may include references to maps, data sources, data gaps, etc.) in the approriate cells.
6) If you need additional data entry columns, "unhide" columns K through AN.

Community Water Systems: Disaggregated Use
Fauquier County

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

For each community water system included in the water plan, include an estimate of the disaggregated annual average amount of water used in categories of use appropriate for the system. Reference sources and note any assumptions regarding calculations. **If unable to find data or data not applicable, note accordingly in the Notes/Comments Column and highlight applicable cells. Note the data reference year in Row 4 and fill out a separate spreadsheet for each data year.**

COMMUNITY WATER SYSTEMS (MUNICIPAL & PRIVATE): DISAGGREGATED ANNUAL AVERAGE WATER USE AMOUNTS (9 VAC 25-780-80 B9)

YEAR: 2009			USAGE CATEGORIES:														Sales to Other CWS's:			Notes or Comments (This may include references to maps, data sources, data gaps, etc.)
PWSID	Water System Name	System Total (MGD)	Residential (gpd)	Residential (MGD)	Commercial Institutional Light Industrial *CIL* (gpd)	Commercial Institutional Light Industrial *CIL* (MGD)	Heavy Industrial (gpd)	Heavy Industrial (MGD)	Military (gpd)	Military (MGD)	Other (gpd)	Other (MGD)	Production Processes (gpd)	Production Processes (MGD)	Unaccounted for Losses (gpd)	Unaccounted for Losses (MGD)	Amount Sold (gpd)	Amount Sold (MGD)	System Name	
6061595	Vint Hill	0.100	57,298.00	0.057	11,996.00	0.012	0.00	0.000	0.00	0.000	467.00	0.000	0.00	0.000	29,912.00	0.030	0.00	0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		
Total Use By Category in MGD (for All Community Water Systems)		0.100		0.057		0.012		0.000		0.000		0.000		0.000		0.030		0.000		

Use the next six spreadsheets to record existing water source and use information for the self-supplied users in your planning area.

Non-Agricultural, Self-Supplied Users of Surface Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural surface water source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column I, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF SURFACE WATER (9 VAC 25-780-70 E, - 80 B6, and - 80 C)

Water User Name	Waterbody Source Name	Use Category	DESIGN CAPACITY: Average Daily Withdrawal (gpd)	DESIGN CAPACITY: Average Daily Withdrawal (MGD)	DESIGN CAPACITY: Maximum Daily Withdrawals (gpd)	DESIGN CAPACITY: Maximum Daily Withdrawals (MGD)	Limitations on Withdrawal Permit(s)	WATER USE: Estimated Annual Average (MGD) Year 2XXX	Notes or Comments (Include service area user falls within and references to any maps, data sources, data gaps, etc.)
Within Community Water System (Municipal & Private) Service Areas									
Not Applicable				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
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				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
Within Community Water System Service Area Totals (MGD):				0.000		0.000		0.000	

Non-Agricultural, Self-Supplied Users of Surface Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural surface water source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column I, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF SURFACE WATER (9 VAC 25-780-70 E, - 80 B6, and - 80 C)

			DESIGN CAPACITY:					WATER USE:	Notes or Comments
Water User Name	Waterbody Source Name	Use Category	**Average Daily** Withdrawal (gpd)	**Average Daily** Withdrawal (MGD)	**Maximum Daily** Withdrawals (gpd)	**Maximum Daily** Withdrawals (MGD)	Limitations on Withdrawal Permit(s)	Estimated **Annual Average** (MGD) Year **2XXX**	**(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
	Outside Community Water System (Municipal & Private) Service Areas								
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
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				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
				0.000		0.000			
Outside Community Water System Service Area Totals (MGD):				0.000		0.000		0.000	
Self-Supplied Nonagricultural Users of Surface Water Totals (MGD):				0.000		0.000		0.000	

Non-Agricultural, Self-Supplied Users of Ground Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural groundwater source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column M, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF GROUND WATER (9 VAC 25-780-70 F, - 80 B6, and - 80 C)

		DESIGN CAPACITY:				INDIVIDUAL WELL DATA:						WATER USE:	Notes or Comments
Water User Name	Use Category	**Average Daily** Withdrawals (gpd)	**Average Daily** Withdrawals (MGD)	**Maximum Daily** Withdrawals (gpd)	**Maximum Daily** Withdrawals (MGD)	Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Limitations on Withdrawal Permit(s)	Estimated **Annual Average** (MGD) YEAR **2XXX**	**(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
Within Community Water System (Municipal & Private) Service Areas													
Not Applicable			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
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			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
Within CWS Service Area Totals (MGD):			**0.000**		**0.000**							**0.000**	

Non-Agricultural, Self-Supplied Users of Ground Water
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List non-agricultural groundwater source and use information for all self-supplied users of more than 300,000 gallons per month. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark users on associated map. **Note the data reference year in Column M, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, NON-AGRICULTURAL USERS USING MORE THAN 300,000 GAL/MONTH OF GROUND WATER (9 VAC 25-780-70 F, - 80 B6, and - 80 C)

		DESIGN CAPACITY:				INDIVIDUAL WELL DATA:						WATER USE:	Notes or Comments
Water User Name	Use Category	**Average Daily** Withdrawals (gpd)	**Average Daily** Withdrawals (MGD)	**Maximum Daily** Withdrawals (gpd)	**Maximum Daily** Withdrawals (MGD)	Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (Top & Bottom) **or** Water Zones	Well Diameter (inches)	Limitations on Withdrawal Permit(s)	Estimated **Annual Average** (MGD) YEAR **2XXX**	**(Include service area user falls within and references to any maps, data sources, data gaps, etc.)**
			Outside Community Water System (Municipal & Private) Service Areas										
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
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			0.000		0.000								
			0.000		0.000								
			0.000		0.000								
Outside CWS Service Area Totals (MGD):			0.000		0.000							0.000	
Self-Supplied Nonagricultural Users of Ground Water Totals (MGD):			0.000		0.000							0.000	
Self-Supplied Nonagricultural Users Totals (surface and groundwater in MGD):			0.000		0.000							0.000	

Agricultural, Self-Supplied Users
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List data for all agricultural users who utilize more than 300,000 gallons per month of ground or surface water. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map. **Note the data reference year in Column F, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, AGRICULTURAL USERS > 300,000 GAL/MONTH OF GROUND OR SURFACE WATER (9 VAC 25-780-70 I, -80B7, and -80D)

User Name	SOURCE TYPE:		USE TYPE:		WATER USE:		Notes or Comments
			Irrigation	Nonirrigation	Estimated **Annual Average** (MGD) Year **2XXX**		
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	(Place an "**X**" in appropriate column cell)		Surface Water (MGD)	Ground Water (MGD)	**(Include service area user falls within and any references to maps, data sources, data gaps, etc.)**
	Within Community Water System (Municipal & Private) Service Areas						
Not Applicable							
Within Community Water System Service Area Water Use Totals (MGD):					**0.000**	**0.000**	

Agricultural, Self-Supplied Users
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

List data for all agricultural users who utilize more than 300,000 gallons per month of ground or surface water. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. If applicable, mark and label on associated map. **Note the data reference year in Column F, Row 4 and fill out a separate spreadsheet for each data year.**

SELF-SUPPLIED, AGRICULTURAL USERS > 300,000 GAL/MONTH OF GROUND OR SURFACE WATER (9 VAC 25-780-70 I, -80B7, and -80D)

User Name	SOURCE TYPE:		USE TYPE:		WATER USE:		Notes or Comments
	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	Irrigation	Nonirrigation	Estimated **Annual Average** (MGD) Year **2XXX**		
			(Place an "**X**" in appropriate column cell)		Surface Water (MGD)	Ground Water (MGD)	**(Include service area user falls within and any references to maps, data sources, data gaps, etc.)**
Outside Community Water System (Municipal & Private) Service Areas							
Outside Community Water System Service Area Water Use Totals (MGD):					**0.000**	**0.000**	
Estimated Total Agricultural Useage By Source (MGD):					**0.000**	**0.000**	

Self-Supplied, Individual Well Users
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Estimate well use information for small, self-supplied users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly. **Note the data reference year in Row 7.**

ESTIMATED NUMBER OF RESIDENCES AND BUSINESSES THAT ARE SELF-SUPPLIED BY INDIVIDUAL WELLS WITHDRAWING LESS THAN 300,000 GALLONS PER MONTH (9 VAC 25-780-70J); ESTIMATED WATER USE BY SELF-SUPPLIED USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

	ESTIMATING SMALL SELF-SUPPLIED USERS						ESTIMATING SMALL SELF-SUPPLIED WATER USE										
	Step 1: Estimate Total Population of Individual Self-Supplied Well Users			Step 2: Estimate Number of Residences and Businesses on Individual Wells			Step 3: Estimate Total Self-Supplied Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4: Estimate Total Self-Supplied Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA					
Locality	Locality Population YEAR 2XXX	Total Population Served by Community Water System(s) YEAR 2XXX	Estimated Population Served by Individual Wells	Locality Specific Population Per Household Factor	Estimated Number of **RESIDENCES** on Wells (Column D ÷ Column E)	Estimated Number of **BUSINESSES** on Wells	Estimated Population Served by Individual Wells	Per Capita Water Use Factor (gal/person/day)	Average Annual Residential Use (gpd) (Column H x Column I)	Average Annual Business Use (gpd) (SSU Business Data)	Estimated Average Annual Use (MGD)	# of Self-Supplied Residences Within Service Area	Locality Specific Population Per Household Factor	Per Capita Water Use Factor (gal/person/day)	Average Annual Residential Use (gpd) (Columns M x N x O)	Average Annual Business Use (gpd) (SSU Business Data)	Estimated Annual Average Use (MGD)
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
Not Applicable			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
			0		-		0		0		0.000				0		0.000
Planning Area Totals:	0	0	0		0	0	0		0	0	0.000	0			0	0	0.000

Notes or Comments: (This may include references to maps, data sources, data gaps, etc.)	FCWSA supports two (2) Salem Church and Rt. 774. Small, self-supplied users with less than 300,000 gpm.

Self-Supplied, Individual Well Users: Businesses
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Estimate well use information for small, self-supplied business users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly.
Record the data reference year, from your data sources, in Row 5. **Fill out a separate sheet for each locality in your region.**

ESTIMATED WATER USE BY SELF-SUPPLIED BUSINESS USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

Locality Name
Year: 2XXX

Use this spreadsheet to fill out columns K and Q on the main "70J, 80B8, 80E SSU" spreadsheet

ESTIMATING SMALL SELF-SUPPLIED BUSINESS WATER USE									
Step 3 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA				
Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column B x Column C)	Estimated Average Annual Business Use (MGD)	Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column G x Column H)	Estimated Average Annual Business Use (MGD)
Not Applicable			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
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			0	0.000				0	0.000
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			0	0.000				0	0.000
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			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000

Self-Supplied, Individual Well Users: Businesses
Your Locality or Region

Office of Water Supply Planning
629 East Main Street,
P.O. Box 1105, Richmond, VA 23218
URL: http://www.deq.virginia.gov/watersupplyplanning/

Estimate well use information for small, self-supplied business users on individual wells. Reference sources and note any assumptions regarding calculations. If unable to find data or data not applicable, note accordingly.
Record the data reference year, from your data sources, in Row 5. **Fill out a separate sheet for each locality in your region.**

ESTIMATED WATER USE BY SELF-SUPPLIED BUSINESS USERS ON INDIVIDUAL WELLS (9 VAC 25-780-80 B8 and -80 E)

Locality Name
Year: 2XXX

Use this spreadsheet to fill out columns K and Q on the main "70J, 80B8, 80E SSU" spreadsheet

ESTIMATING SMALL SELF-SUPPLIED BUSINESS WATER USE

Step 3 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA					Step 4 (*continued from 70J spreadsheet*): Estimated Self-Supplied Business Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA				
Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column B x Column C)	Estimated Average Annual Business Use (MGD)	Business Name	Estimated Population Served by Each Business	Per Capita Water Use Factor (gal/person/day)	Estimated Average Annual Business Use (gallons/day) (Column G x Column H)	Estimated Average Annual Business Use (MGD)
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
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			0	0.000				0	0.000
			0	0.000				0	0.000
			0	0.000				0	0.000
Locality Name : Outside Service Area Totals	0		0	0.000	***Locality Name : Within Service Area Totals***	0		0	0.000

Notes or Comments: (This may include references to maps, data sources, data gaps, etc.)	

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Virginia	7,078,515	2.54
Accomack County	38,305	2.45
Albemarle County	79,236	2.44
Alleghany County	12,926	2.46
Amelia County	11,400	2.66
Amherst County	31,894	2.51
Appomattox County	13,705	2.55
Arlington County	189,453	2.15
Augusta County	65,615	2.56
Bath County	5,048	2.34
Bedford County	60,371	2.52
Bland County	6,871	2.43
Botetourt County	30,496	2.56
Brunswick County	18,419	2.47
Buchanan County	26,978	2.46
Buckingham County	15,623	2.52
Campbell County	51,078	2.45
Caroline County	22,121	2.69
Carroll County	29,245	2.36
Charles City County	6,926	2.59
Charlotte County	12,472	2.47
Chesterfield County	259,903	2.73
Clarke County	12,652	2.50
Craig County	5,091	2.45
Culpeper County	34,262	2.68
Cumberland County	9,017	2.55
Dickenson County	16,395	2.42
Dinwiddie County	24,533	2.58
Essex County	9,989	2.46
Fairfax County	969,749	2.74
Fauquier County	55,139	2.75
Floyd County	13,874	2.39
Fluvanna County	20,047	2.59
Franklin County	47,286	2.44
Frederick County	59,209	2.64
Giles County	16,657	2.37
Gloucester County	34,780	2.62
Goochland County	16,863	2.51
Grayson County	17,917	2.31
Greene County	15,244	2.71
Greensville County	11,560	2.51
Halifax County	37,355	2.43
Hanover County	86,320	2.71
Henrico County	262,300	2.39
Henry County	57,930	2.40
Highland County	2,536	2.24

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Isle of Wight County	29,728	2.61
James City County	48,102	2.47
King and Queen County	6,630	2.48
King George County	16,803	2.70
King William County	13,146	2.69
Lancaster County	11,567	2.23
Lee County	23,589	2.41
Loudoun County	169,599	2.82
Louisa County	25,627	2.56
Lunenburg County	13,146	2.39
Madison County	12,520	2.60
Mathews County	9,207	2.32
Mecklenburg County	32,380	2.38
Middlesex County	9,932	2.27
Montgomery County	83,629	2.40
Nelson County	14,445	2.42
New Kent County	13,462	2.65
Northampton County	13,093	2.39
Northumberland County	12,259	2.24
Nottoway County	15,725	2.48
Orange County	25,881	2.50
Page County	23,177	2.46
Patrick County	19,407	2.36
Pittsylvania County	61,745	2.49
Powhatan County	22,377	2.74
Prince Edward County	19,720	2.43
Prince George County	33,047	2.76
Prince William County	280,813	2.94
Pulaski County	35,127	2.32
Rappahannock County	6,983	2.50
Richmond County	8,809	2.40
Roanoke County	85,778	2.41
Rockbridge County	20,808	2.43
Rockingham County	67,725	2.61
Russell County	30,308	2.44
Scott County	23,403	2.35
Shenandoah County	35,075	2.42
Smyth County	33,081	2.37
Southampton County	17,482	2.53
Spotsylvania County	90,395	2.87
Stafford County	92,446	3.01
Surry County	6,829	2.61
Sussex County	12,504	2.41
Tazewell County	44,598	2.40
Warren County	31,584	2.57
Washington County	51,103	2.36

Source: U.S. Census Bureau 2000 Census

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-_box_head_nbr=GCT-PH1&-ds_name=DEC_2000_SF1_U&-format=ST-2

http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US51&-ds_name=DEC_2000_SF1_U&-_lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTP7_ST2&-CONTEXT=gct

Geographic area	Population	Population Per Household
Westmoreland County	16,718	2.43
Wise County	40,123	2.44
Wythe County	27,599	2.36
York County	56,297	2.78
Alexandria city	128,283	2.04
Bedford city	6,299	2.26
Bristol city	17,367	2.18
Buena Vista city	6,349	2.38
Charlottesville city	45,049	2.27
Chesapeake city	199,184	2.79
Clifton Forge city	4,289	2.22
Colonial Heights city	16,897	2.37
Covington city	6,303	2.22
Danville city	48,411	2.27
Emporia city	5,665	2.43
Fairfax city	21,498	2.61
Falls Church city	10,377	2.31
Franklin city	8,346	2.39
Fredericksburg city	19,279	2.09
Galax city	6,837	2.27
Hampton city	146,437	2.49
Harrisonburg city	40,468	2.53
Hopewell city	22,354	2.43
Lexington city	6,867	2.06
Lynchburg city	65,269	2.30
Manassas city	35,135	2.92
Manassas Park city	10,290	3.16
Martinsville city	15,416	2.27
Newport News city	180,150	2.50
Norfolk city	234,403	2.45
Norton city	3,904	2.23
Petersburg city	33,740	2.38
Poquoson city	11,566	2.75
Portsmouth city	100,565	2.51
Radford city	15,859	2.25
Richmond city	197,790	2.21
Roanoke city	94,911	2.20
Salem city	24,747	2.32
Staunton city	23,853	2.19
Suffolk city	63,677	2.69
Virginia Beach city	425,257	2.70
Waynesboro city	19,520	2.31
Williamsburg city	11,998	2.07
Winchester city	23,585	2.28

APPENDIX 2

STREAM DATA

USGS Home
Contact USGS
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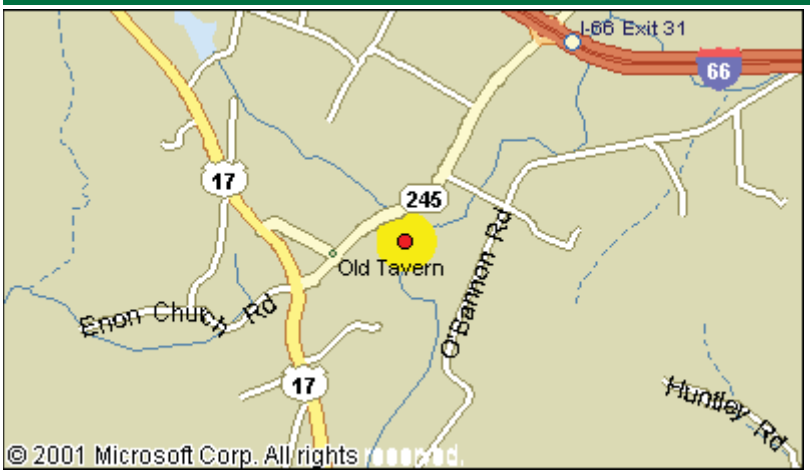
Groundwater WatchLatest News...

See "Latest News" for information about new dual-axis hydrographs and wells serving multiple parameter codes

Site Number: 384957077481701 - 48U 26 SOW 215



Groundwater Watch Help Page

DESCRIPTION:

Latitude 38°49'57.48", Long
Fauquier County, Virginia, H
Well depth: 349.5 feet
Hole depth: 349.5 feet
Land surface altitude: 574fe
Well completed in "Piedmor
aquifers" (N400PDMBRX) na
Well completed in "Catoctin

AVAILABLE DATA FROM NWIS

Real-time
Daily Data
Field groundwater-level

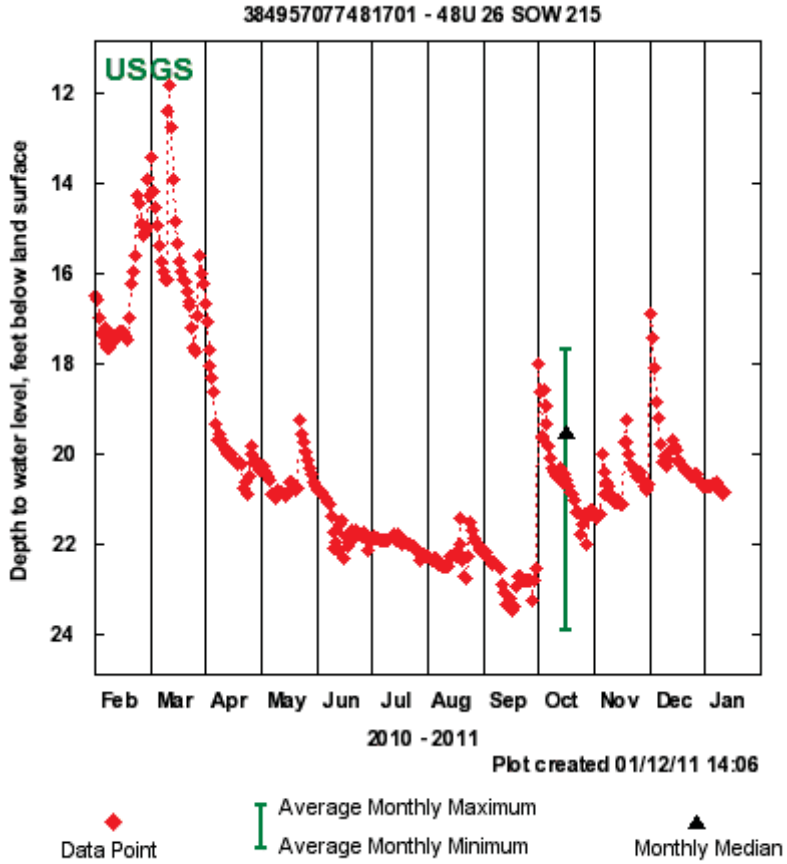
Additional Data

Annual Water-Data Repo
Groundwater Watch **c

OPERATION:

Record for this site is maint
Science Center
Email questions about this s
Water-Data Inquiries

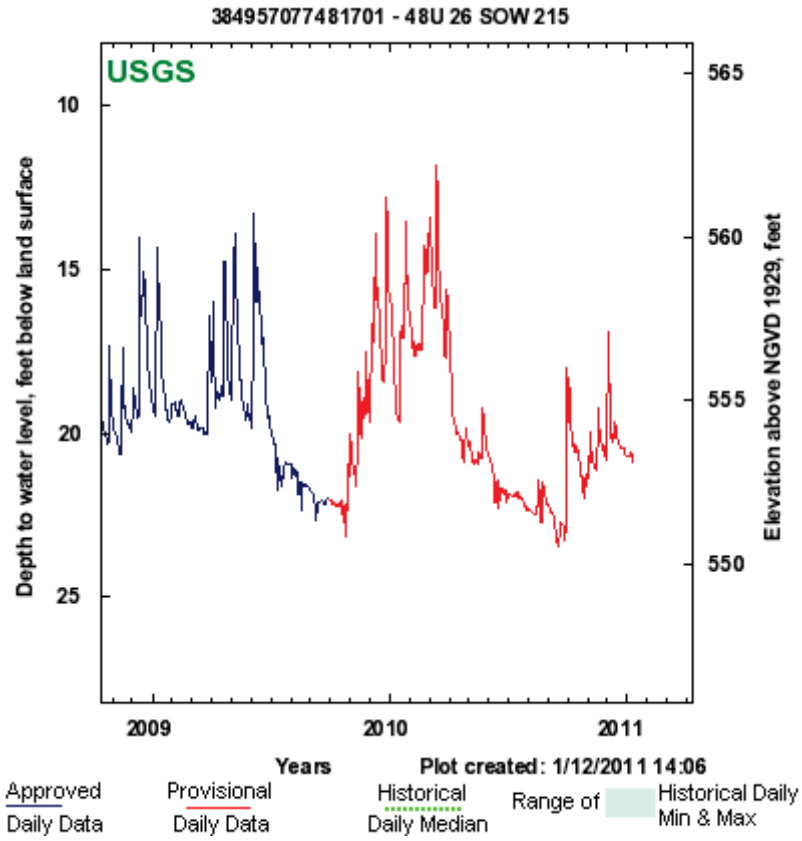
Site Statistics



Most recent data valu
Period of Record Monthly Sta
Depth to water level, f

Month	Average Monthly Minimum	Mo M
Jan		
Feb		
Mar		
Apr		
May		
Jun		
Jul		
Aug		
Sep		
Oct	17.70	
Nov		
Dec		

Daily Groundwater Data



Most recent Provisional daily

Summary for Period

Depth to water level, f

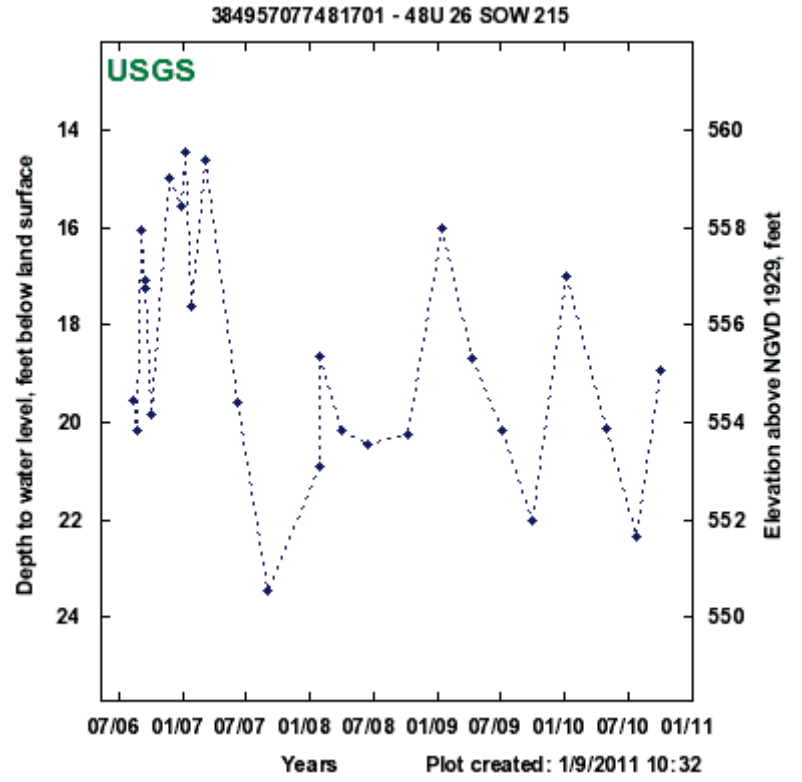
Approved Daily Maximum V

Begin Date	End Date
10/01/06	09/27/09

Daily Data Options

- View latest data from NWISWeb
- View data in calendar format
- Download data in text format
- View daily medians

Periodic Groundwater Data



Summary for Period of Record Pe
Levels

Depth to water level, feet below

Approved Periodic Water Leve

Begin Date	End Date
08/10/06	10/06/10

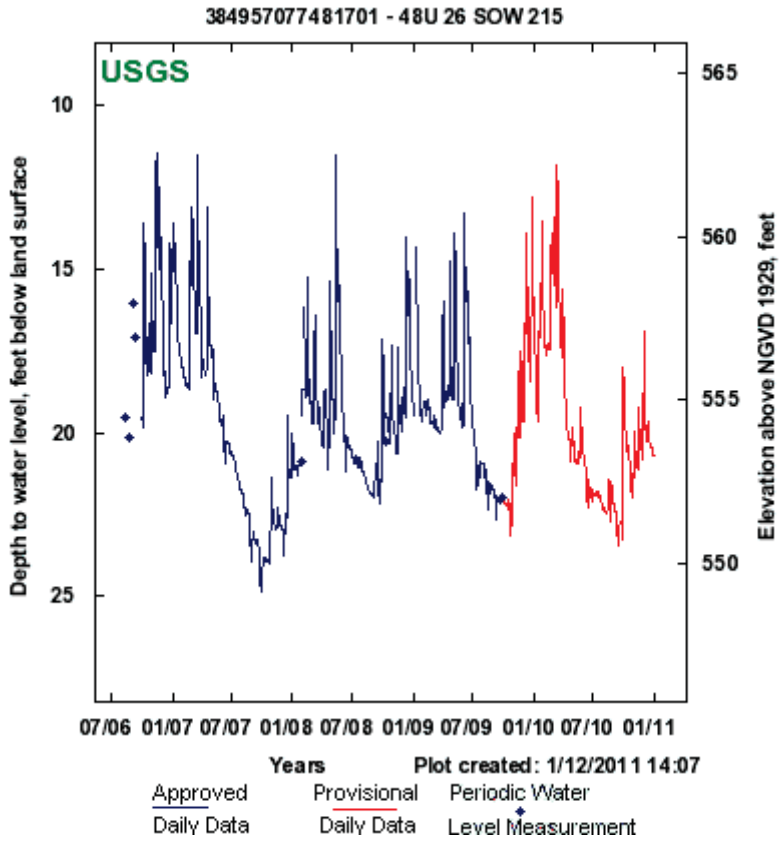
Highest WL	Date of Highest WL	Lowest WL
14.43	01/11/07	23.47

Groundwater Levels Options

- View NWISWeb Groundwater levels
- Download Groundwater levels in tex

◆ Periodic Water Level Measurement

Period of Record - All Data Types



Summary for Period of Record - A Types

Depth to water level, feet below surface

Begin Date	End Date	Num Val
08/10/06	01/12/11	1,5

Highest WL	Date of Highest WL	Lowest WL	Da Low
11.44	11/17/06	24.87	09/

Period of Record Options

View annual monthly statistics for al

Download Groundwater levels in tex

Return to County Page Return to State Page Return to National Page

*References to non-Department of the Interior (DOI) products do not constitute an endorsem
By viewing the Google Maps API on this web site the user agrees to these TERM

News - updated November 2010

Water Quality Samples for the Nation

USGS 01656000 CEDAR RUN NEAR CATLETT, VA

Warning: Javascript must be enabled to use all the features on this page!

Available data for this site | Water-Quality: Field/Lab samples | GO

Fauquier County, Virginia Hydrologic Unit Code 02070010 Latitude 38°38'12", Longitude 77°37'31" NAD27 Drainage area 93.4 square miles Gage datum 199.15 feet above sea level NGVD29	**Output formats** Parameter Group Period of Record table Inventory of available water-quality data for printing Inventory of water-quality data with retrieval Tab-separated data, one result per row Tab-separated data one sample per row with remark codes combined with values Tab-separated data one sample per row with tab-delimiter for remark codes Reselect output format

Parameter Code	Count	Begin Date	End Date	Parameter Code Complete Name
00010	656	1968-03-06	2008-05-19	Temperature, water, degrees Celsius
00028	41	1979-08-29		Agency analyzing sample, code

00060	82	1968-03-06	1969-04-09	Discharge, cubic feet per second
00065	205	2006-10-04	2008-05-19	Gage height, feet
00080	123	1968-03-06	1979-08-29	Color, water, filtered, platinum cobalt units
00095	697	1968-03-06	2008-05-19	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
00191	123	1968-03-06	1979-08-29	Hydrogen ion, water, unfiltered, calculated, milligrams per liter
00300	41	1979-08-29		Dissolved oxygen, water, unfiltered, milligrams per liter
00400	123	1968-03-06	1979-08-29	pH, water, unfiltered, field, standard units
00405	123	1968-03-06	1979-08-29	Carbon dioxide, water, unfiltered, milligrams per liter
00410	123	1968-03-06	1979-08-29	Acid neutralizing capacity, water, unfiltered, fixed endpoint (pH 4.5) titration, field, milligrams per liter as calcium carbonate
00440	123	1968-03-06	1979-08-29	Bicarbonate, water, unfiltered, fixed endpoint (pH 4.5) titration, field, milligrams per liter
00445	123	1968-03-06	1979-08-29	Carbonate, water, unfiltered, fixed endpoint (pH 8.3) titration, field, milligrams per liter
00613	41	1979-08-29		Nitrite, water, filtered, milligrams per liter as nitrogen
00618	123	1968-03-06	1979-08-29	Nitrate, water, filtered, milligrams per liter as nitrogen
00631	41	1979-08-29		Nitrate plus nitrite, water, filtered, milligrams per liter as nitrogen
00650	82	1968-03-06	1969-04-09	Phosphate, water, unfiltered, milligrams per liter
00660	41	1979-08-29		Orthophosphate, water, filtered, milligrams per liter
00671	41	1979-08-29		Orthophosphate, water, filtered, milligrams per liter as phosphorus
00900	123	1968-03-06	1979-08-29	Hardness, water, milligrams per liter as calcium carbonate
00902	123	1968-	1979-	Noncarbonate hardness, water, unfiltered, field, milligrams

		03-06	08-29	per liter as calcium carbonate
00915	123	1968-03-06	1979-08-29	Calcium, water, filtered, milligrams per liter
00925	123	1968-03-06	1979-08-29	Magnesium, water, filtered, milligrams per liter
00930	123	1968-03-06	1979-08-29	Sodium, water, filtered, milligrams per liter
00931	123	1968-03-06	1979-08-29	Sodium adsorption ratio, water, number
00932	123	1968-03-06	1979-08-29	Sodium fraction of cations, water, percent in equivalents of major cations
00933	41	1979-08-29		Sodium plus potassium, water, filtered, milligrams per liter as sodium
00935	123	1968-03-06	1979-08-29	Potassium, water, filtered, milligrams per liter
00940	779	1968-03-06	2008-05-19	Chloride, water, filtered, milligrams per liter
00945	123	1968-03-06	1979-08-29	Sulfate, water, filtered, milligrams per liter
00950	123	1968-03-06	1979-08-29	Fluoride, water, filtered, milligrams per liter
00955	123	1968-03-06	1979-08-29	Silica, water, filtered, milligrams per liter as SiO2
01046	123	1968-03-06	1979-08-29	Iron, water, filtered, micrograms per liter
30207	205	2006-10-04	2008-05-19	Gage height, above datum, meters
30208	82	1968-03-06	1969-04-09	Discharge, cubic meters per second
70300	123	1968-03-06	1979-08-29	Dissolved solids dried at 180 degrees Celsius, water, filtered, milligrams per liter
70301	123	1968-03-06	1979-08-29	Dissolved solids, water, filtered, sum of constituents, milligrams per liter
70302	82	1968-03-06	1969-04-09	Dissolved solids, water, tons per day
70303	123	1968-03-06	1979-08-29	Dissolved solids, water, filtered, tons per acre-foot

71851	123	1968-03-06	1979-08-29	Nitrate, water, filtered, milligrams per liter
71856	41	1979-08-29		Nitrite, water, filtered, milligrams per liter

Title: Water Quality Samples for USA: Sample Data
URL: http://waterdata.usgs.gov/nwis/qwdata?

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National Water Information System: Web Interface

USGS Water Resources

Data Category: Surface Water

Geographic Area: United States

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News - updated November 2010

USGS 01656000 CEDAR RUN NEAR CATLETT, VA

PROVISIONAL DATA SUBJECT TO REVISION

Warning: Javascript must be enabled to use all the features on this page!

Available data for this site Time-series: Daily data GO

Station operated by the Virginia Department of Environmental Quality

Current shift adjusted stage-discharge rating table. These tab delimited tables are updated daily and can change frequently. If you use these ratings, it is important that you update often so that you have the most current version. What is a shift adjusted stage-discharge rating?

Boating safety tips

Available Parameters	Period of Record
All 3 Available Parameters for this site	
00060 Discharge (Mean)	1950-10-01 2011-01-12

Output format: Graph / Graph w/ stats

Begin date: 2010-01-

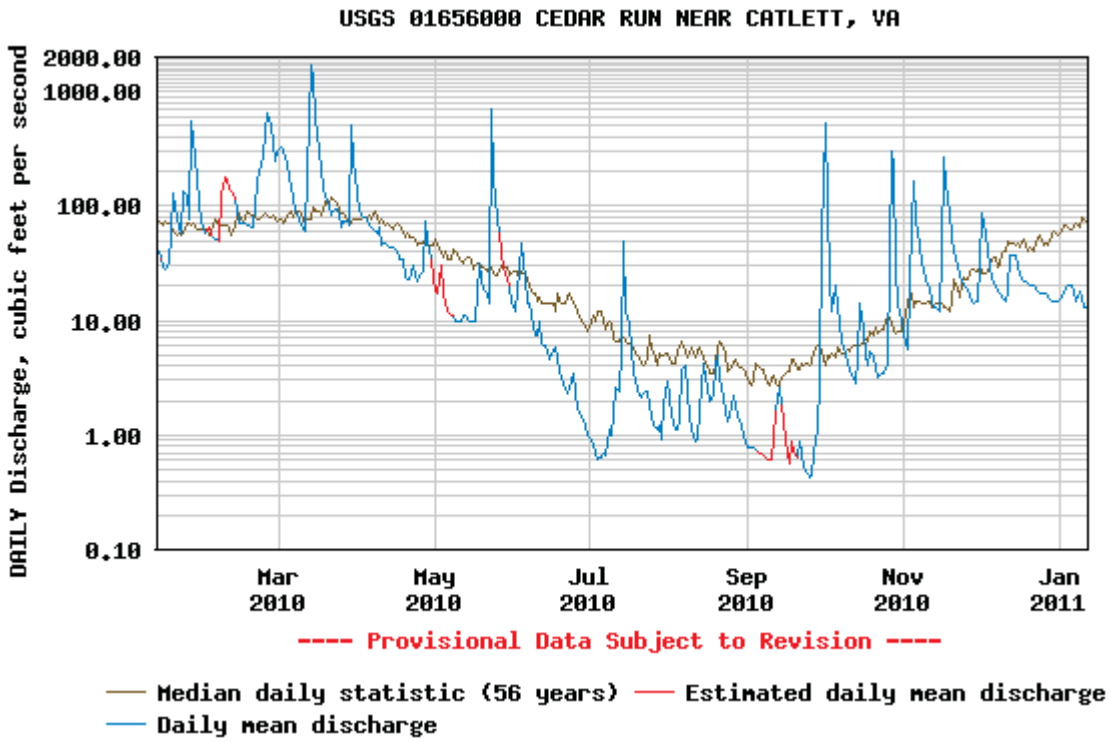
End date: 2011-01-

GO

☑ 00010 Temperature, water (Mean)	2006-10-01	2009-04-12	○ Graph w/ meas	
☑ 00095 Specific cond at 25C (Mean)	2006-10-01	2009-04-12	○ Table	
			○ Tab-separated	

Summary of all available data for this site

Discharge, cubic feet per second



Create presentation-quality graph.

Temperature, water, degrees Celsius

-- Data unavailable for the time period specified --

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius

-- Data unavailable for the time period specified --

U.S. Department of the Interior | U.S. Geological Survey

Title: USGS Surface-Water Daily Data for the Nation
URL: http://waterdata.usgs.gov/nwis/dv?

Page Contact Information: Virginia Water Data Support Team
Page Last Modified: 2011-01-13 10:32:24 EST
3.79 3.75 nadww01

News - updated November 2010

USGS 01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA

PROVISIONAL DATA SUBJECT TO REVISION

Warning: Javascript must be enabled to use all the features on this page!

Available data for this site Time-series: Daily data GO

The Friends of the Rappahannock recommend that river levels greater than **5.0 ft at the Remington gage** are unsafe for recreational use.

The potential for injury exists at any water level. Proper river safety precautions should be observed at all times.

The National Weather Service flood stage for this site is 15.0 ft.

Current shift adjusted stage-discharge rating table. These tab delimited tables are updated daily and can change frequently. If you use these ratings, it is important that you update often so that you have the most current version. What is a shift adjusted stage-discharge rating?

Boating safety tips

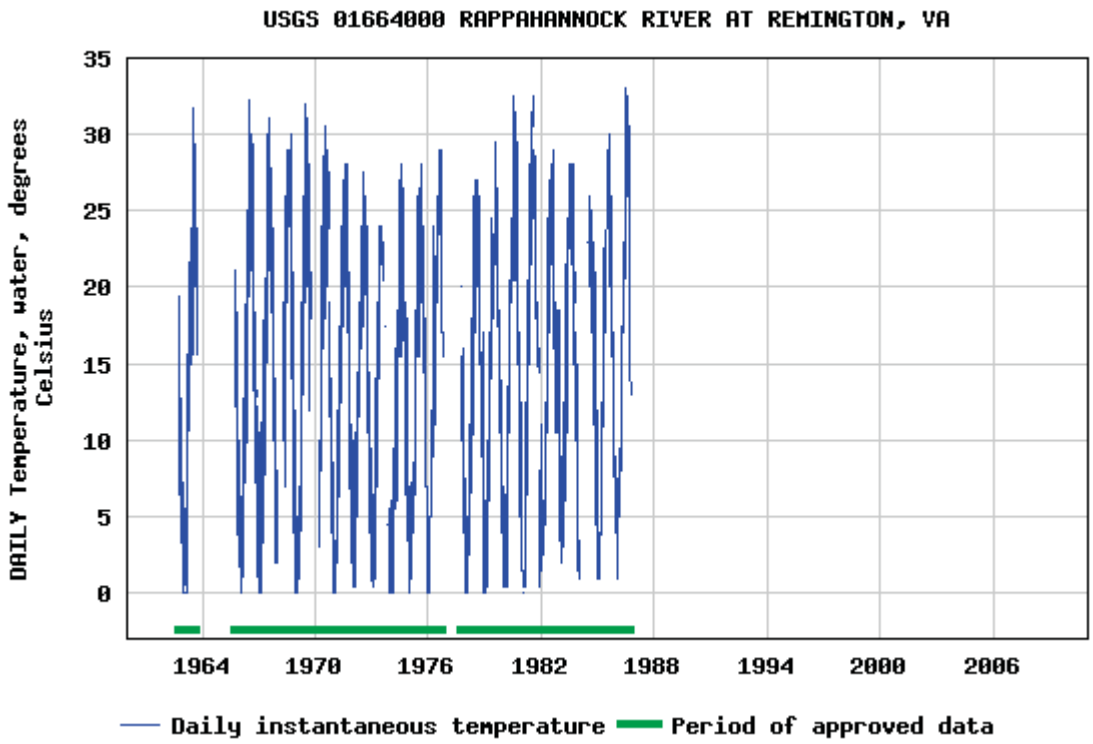
This station managed by the Richmond Water Science Center.

Available Parameters	Period of Record	Output format	Begin date	

☐	All 5 Available Parameters for this site		◉ Graph	1960-01-	GO
☑	00010 Temperature, water (Ins.)	1951-04-27 1986-09-30	○ Graph w/ stats	**End date** 2011-01-	
☑	00060 Discharge (Mean)	1942-10-01 2011-01-12	○ Graph w/ meas		
☑	00095 Specific cond at 25C (Ins.)	1951-10-01 1986-09-30	○ Table		
☑	80154 Suspnd sedmnt conc (Mean)	1951-04-19 1993-09-30	○ Tab-separated		
☑	80155 Suspnd sedmnt disch (Mean)	1951-04-19 1993-09-30			

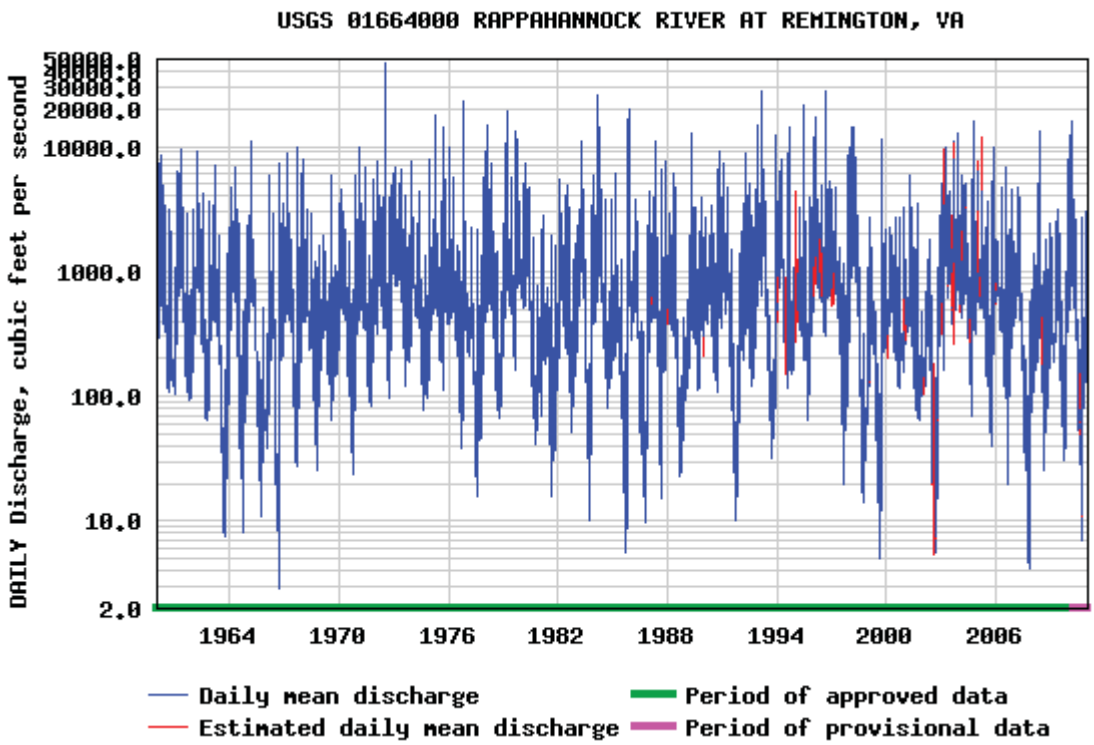
Summary of all available data for this site

Temperature, water, degrees Celsius



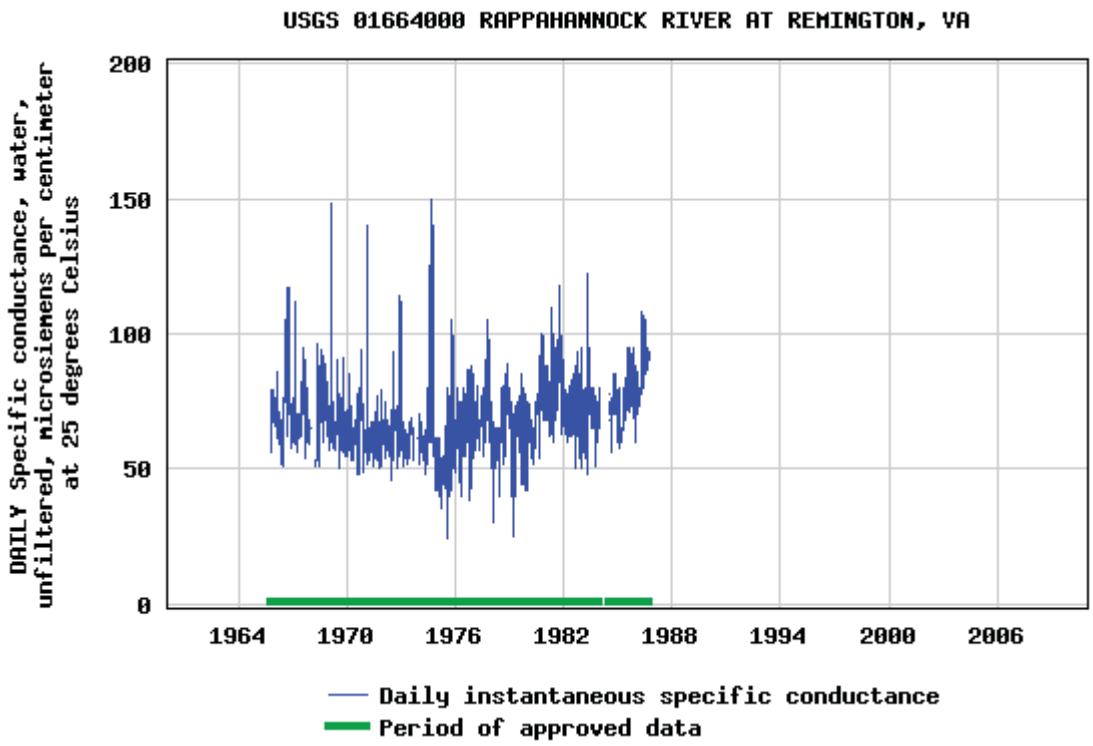
Create presentation-quality graph.

Discharge, cubic feet per second



Create presentation-quality graph.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius



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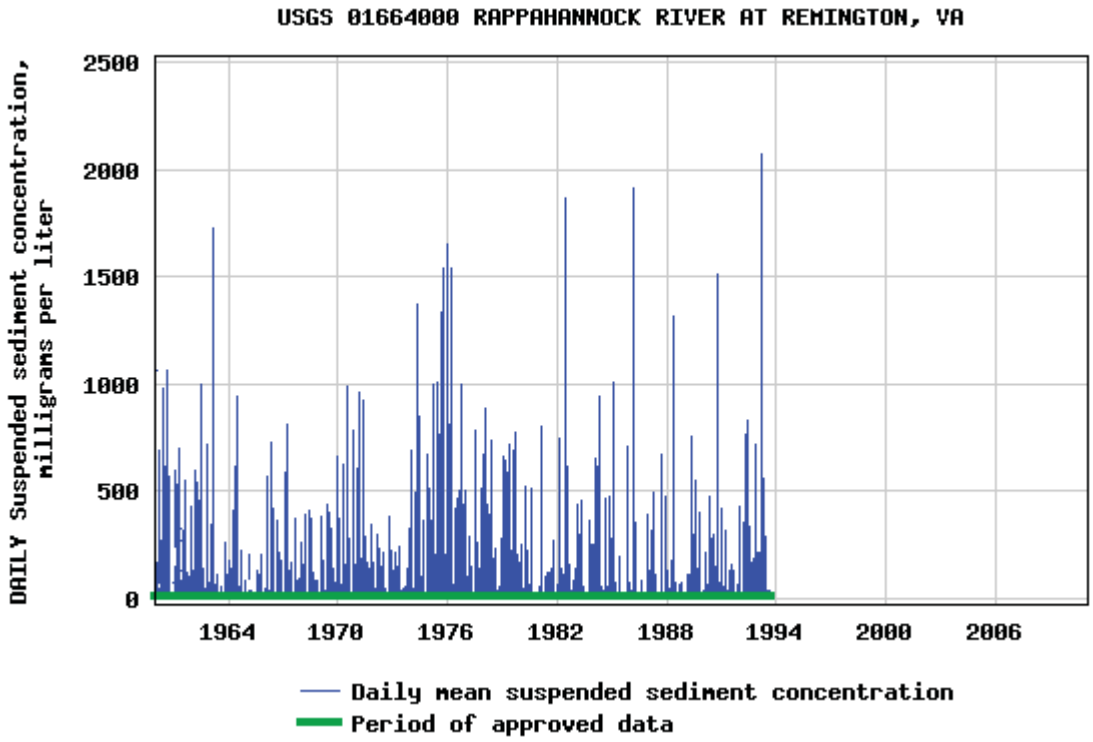
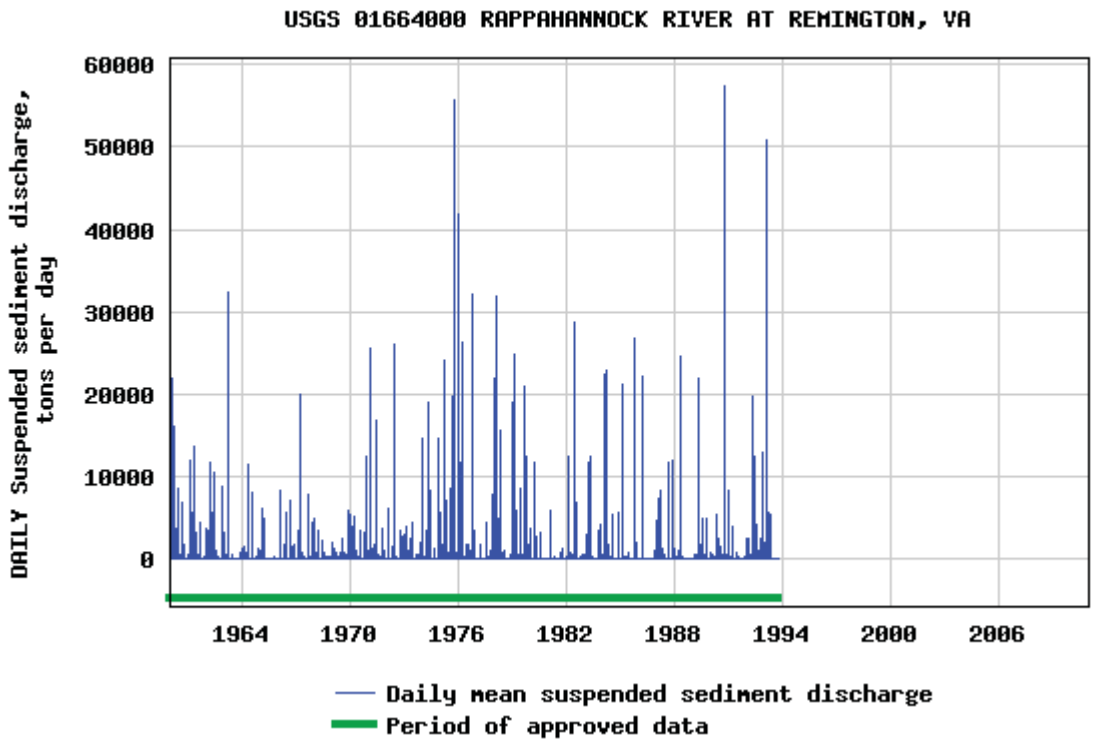
Suspended sediment concentration, milligrams per liter



Create presentation-quality graph.

Suspended sediment discharge, tons per day



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Title: USGS Surface-Water Daily Data for the Nation
URL: http://waterdata.usgs.gov/nwis/dv?

Page Contact Information: Virginia Water Data Support Team
Page Last Modified: 2011-01-13 10:52:49 EST
44.9 44.8 nadww01

National Water Information System: Web Interface

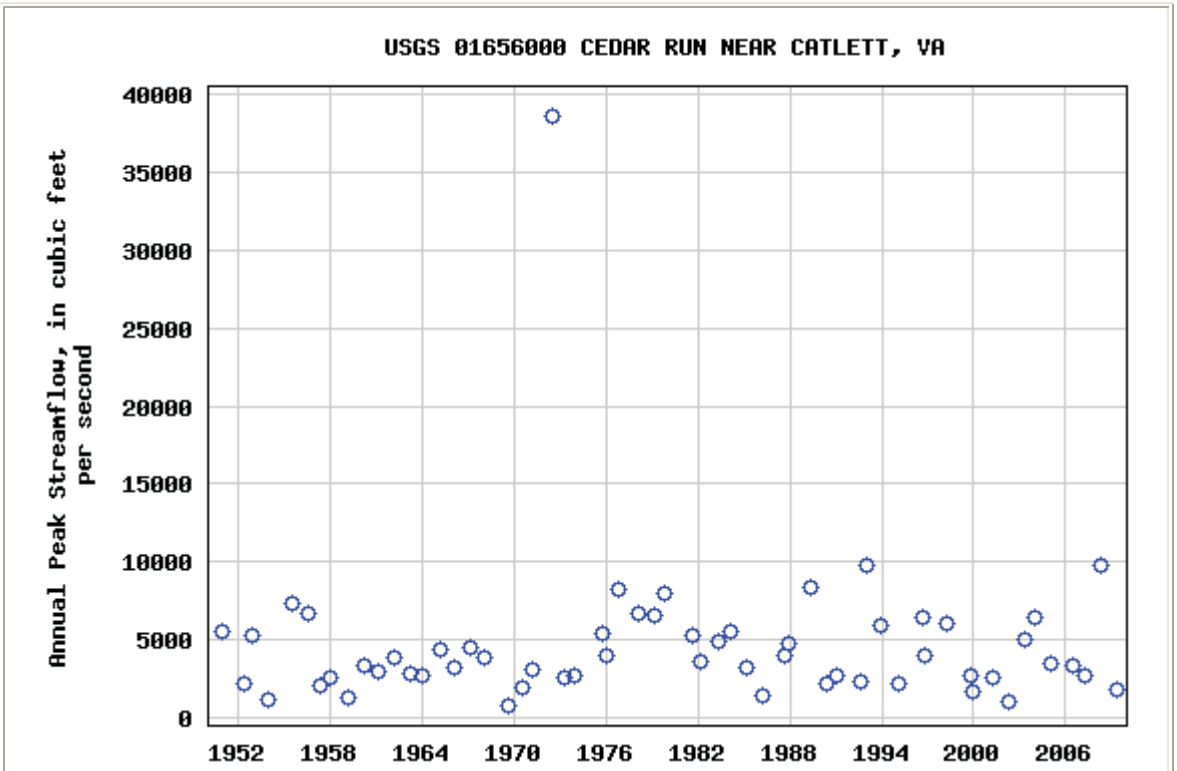
News - updated November 2010

Peak Streamflow for the Nation

USGS 01656000 CEDAR RUN NEAR CATLETT, VA

Warning: Javascript must be enabled to use all the features on this page!

Fauquier County, Virginia
Hydrologic Unit Code 02070010
Latitude 38°38'12", Longitude 77°37'31" NAD27
Drainage area 93.4 square miles
Gage datum 199.15 feet above sea level NGVD29



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U.S. Department of the Interior | U.S. Geological Survey

Title: Surface Water for USA: Peak Streamflow
URL: http://waterdata.usgs.gov/nwis/peak?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2011-01-13 10:28:27 EST
1.96 1.93 nadww01

News - updated November 2010

Peak Streamflow for the Nation

USGS 01656000 CEDAR RUN NEAR CATLETT, VA

Warning: Javascript must be enabled to use all the features on this page!

Available data for this site: Surface-water: Peak streamflow GO

Fauquier County, Virginia
Hydrologic Unit Code 02070010
Latitude 38°38'12",
Longitude 77°37'31" NAD27
Drainage area 93.4 square miles
Gage datum
199.15 feet above sea level NGVD29

Output formats

- Table
- Graph
- Tab-separated file
- peakfq (watstore) format
- Reselect output format

Water Year	Date	Gage Height (feet)	Stream-flow (cfs)	Water Year	Date	Gage Height (feet)	Stream-flow (cfs)
1943	Oct. 15, 1942	22.00		1980	Oct. 01, 1979	16.14	7,960
1951	Dec. 04, 1950	14.60	5,570	1981	Aug. 30, 1981	13.38	5,280
1952	Apr. 27, 1952	9.22	2,170	1982	Feb. 03, 1982	11.29	3,620
1953	Nov. 21, 1952	14.17	5,290	1983	Apr. 15, 1983	12.85	4,840
1954	Dec. 14, 1953	7.13	1,180	1984	Feb. 14, 1984	13.63	5,510
1955	Jun. 08, 1955	17.25	7,300	1985	Feb. 12, 1985	10.64	3,170
1956	Jul. 21, 1956	16.50	6,700	1986	Mar. 15, 1986	7.64	1,420
1957	Apr. 05, 1957	9.32	2,060	1987	Sep. 08, 1987	11.79	3,990
1958	Dec. 20, 1957	10.45	2,570	1988	Nov. 29, 1987	12.78	4,780

1959	Mar. 06, 1959	7.46	1,320	1989	May 05, 1989	16.45	8,380
1960	Feb. 19, 1960	11.35	3,290	1990	May 29, 1990	9.14	2,170
1961	Feb. 19, 1961	10.93	2,990	1991	Jan. 12, 1991	10.00	2,720
1962	Mar. 12, 1962	12.40	3,890	1992	Jul. 27, 1992	9.43	2,340
1963	Mar. 12, 1963	10.73	2,870	1993	Dec. 11, 1992	17.58	9,740
1964	Jan. 09, 1964	10.35	2,690	1994	Nov. 28, 1993	14.03	5,870
1965	Feb. 08, 1965	13.12	4,310	1995	Jan. 15, 1995	9.18	2,150
1966	Feb. 14, 1966	11.25	3,170	1996	Sep. 06, 1996	14.34	6,450
1967	Mar. 07, 1967	13.28	4,430	1997	Oct. 19, 1996	11.78	3,970
1968	Jan. 14, 1968	12.40	3,780	1998	Mar. 21, 1998	13.98	6,060
1969	Aug. 04, 1969	5.84	758	1999	Sep. 30, 1999	10.04	2,680
1970	Jul. 10, 1970	8.93	1,850	2000	Dec. 14, 1999	8.06	1,600
1971	Feb. 14, 1971	11.20	3,020	2001	Mar. 30, 2001	9.75	2,490
1972	Jun. 22, 1972	27.66	38,600	2002	Apr. 29, 2002	6.57	1,010
1973	Apr. 27, 1973	10.30	2,550	2003	May 16, 2003	12.98	5,040
1974	Dec. 21, 1973	10.59	2,700	2004	Dec. 11, 2003	14.28	6,380
1975	Sep. 25, 1975	14.38	5,400	2005	Jan. 14, 2005	11.17	3,490
1976	Jan. 01, 1976	12.73	3,990	2006	Jun. 28, 2006	11.01	3,370
1977	Oct. 09, 1976	17.06	8,270	2007	Apr. 15, 2007	10.06	2,700
1978	Jan. 26, 1978	14.80	6,620	2008	May 12, 2008	16.95	9,750
1979	Feb. 26, 1979	14.72	6,520	2009	May 07, 2009	8.57	1,820

Title: Surface Water for USA: Peak Streamflow
URL: http://waterdata.usgs.gov/nwis/peak?

APPENDIX 3

PRECIPITATION DATA

THE PLAINS 2 NNE, VIRGINIA (448396)

Period of Record Monthly Climate Summary

Period of Record : 4/ 1/1954 to 3/31/2009

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	44.8	44.3	53.7	65.7	72.5	84.0	86.6	86.9	80.5	68.7	57.3	47.6	66.0
Average Min. Temperature (F)	24.9	22.8	30.9	40.8	47.9	60.1	64.5	63.0	55.1	45.2	35.1	27.6	43.2
Average Total Precipitation (in.)	2.91	2.60	3.54	3.40	4.05	3.85	3.96	4.38	3.91	3.35	3.36	2.93	42.24
Average Total SnowFall (in.)	7.3	6.8	4.7	0.4	0.0	0.0	0.0	0.0	0.0	0.2	1.2	3.9	24.5
Average Snow Depth (in.)	1	1	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.
Max. Temp.: 0% Min. Temp.: 0% Precipitation: 98.8% Snowfall: 98.9% Snow Depth: 98.8%
Check Station Metadata or Metadata graphics for more detail about data completeness.

WARRENTON 3 SE, VIRGINIA (448888)

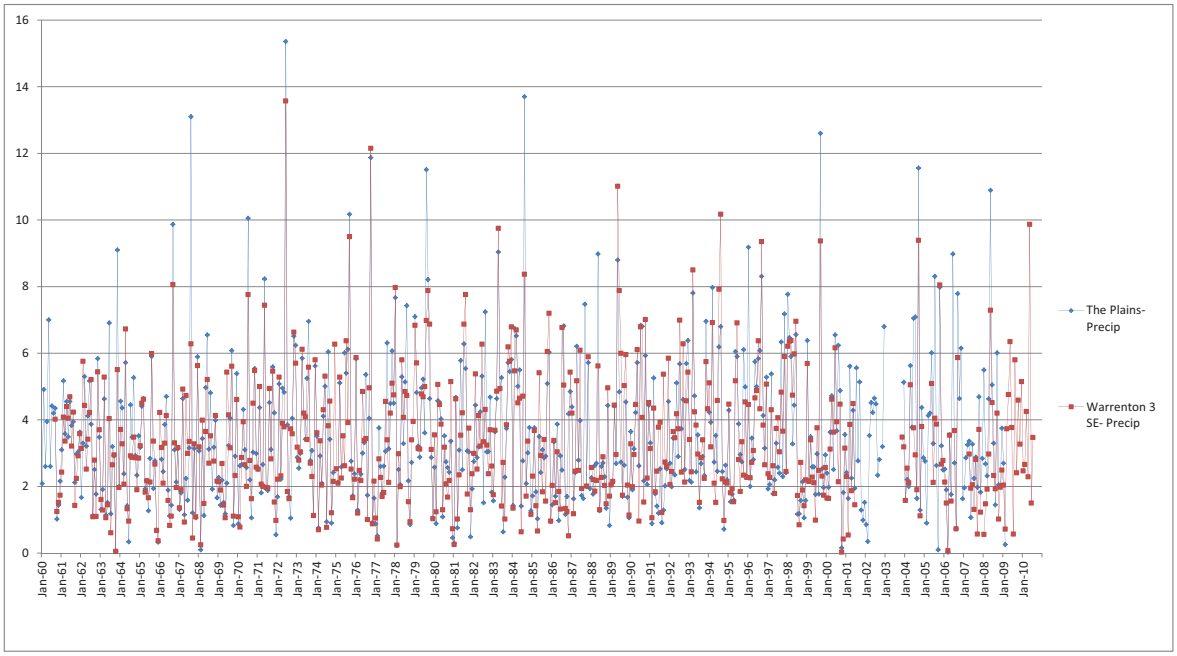
Period of Record Monthly Climate Summary

Period of Record : 3/ 1/1897 to 7/31/2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	42.1	45.1	53.9	65.5	73.9	81.8	86.0	84.8	78.7	67.9	56.4	45.3	65.1
Average Min. Temperature (F)	23.4	25.2	33.0	42.7	51.8	60.6	65.0	63.5	56.7	45.2	36.3	27.1	44.2
Average Total Precipitation (in.)	2.92	2.62	3.44	3.33	3.95	3.73	3.92	3.70	3.68	3.13	3.15	3.14	40.70
Average Total SnowFall (in.)	6.4	6.9	3.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.6	21.5
Average Snow Depth (in.)	1	1	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.

Max. Temp.: 96.9% Min. Temp.: 96.7% Precipitation: 99.1% Snowfall: 98.5% Snow Depth: 98.5%

Check Station Metadata or Metadata graphics for more detail about data completeness.

NOAA PRECIPITATION DATA FOR THE PLAINS AND WARRENTON 1960-2010