Lake Country Water Supply Plan
&
Drought Response Plan

For

County of Brunswick
Town of Alberta
Town of Brodnax
Town of Lawrenceville
County of Mecklenburg
Town of Boydton
Town of Chase City
Town of Clarksville
Town of La Crosse
Town of South Hill

Adopted 2011

Lake Country Water Supply Plan
&
Conservation & Drought Response Plan

Participating Localities

Brunswick County
Alberta
Brodnax
Lawrenceville

Mecklenburg County
Boydton
Chase City
Clarksville
La Crosse
South Hill

Prepared by Southside Planning District Commission

Submission Date: August 2011

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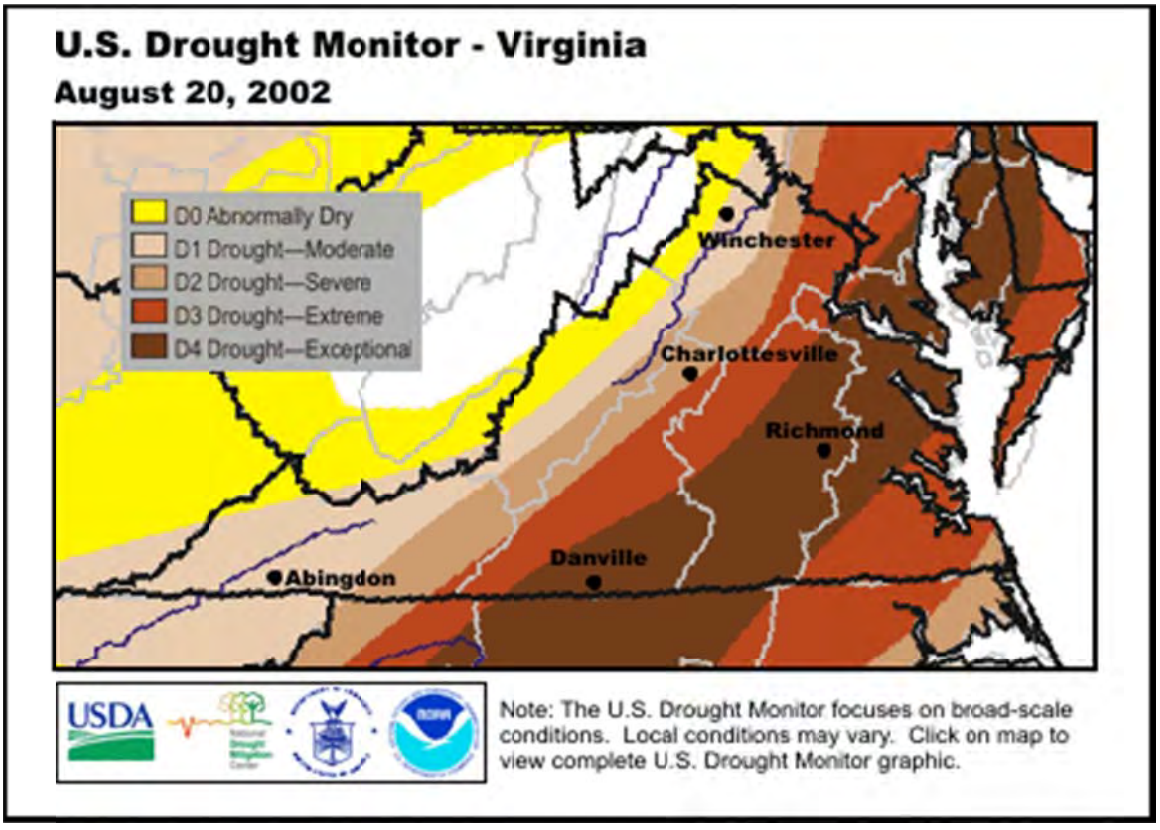
1—PREFACE

Background

In November 2005, the Virginia Regulation for Local and Regional Water Supply Planning (9 VAC 25-780), was amended to require that all localities develop water supply plans and established the criteria which must be followed in plan development:

> *These plans will be reviewed by the Department of Environmental Quality and a determination will be made by the State Water Control Board on whether the plans comply with this regulation. Within five years of a compliance determination by the board the plans will be reviewed to assess adequacy, and significant changes will require the submission of an amended plan and review by the board. All local programs will be reviewed, revised and resubmitted to the Department of Environmental Quality every ten (10) years after the last approval.*

In 1977 the State Water Study Commission was charged with the task of overseeing water supply planning for the state. However, the implementation of the Clean Water Act diverted resources and attention from water supply matters. In part in reaction to the severe drought of 1999-2002, the Virginia Water Supply Task Force was organized. Following their recommendations, in 2003 the Virginia General Assembly authorized the Department of Environmental Quality (DEQ) to develop a statewide water supply plan. The need to determine adequacy of future water supply and formulate plans to react to future drought became apparent in those years of rainfall shortages.



In order to comply with the regulation localities within Brunswick and Mecklenburg counties agreed to collaborate in a regional plan. Participants in the regional plan include Brunswick County and its municipalities—Lawrenceville, Alberta and Brodnax; and, Mecklenburg County and its municipalities—Boydton, Chase City, Clarksville, La Crosse and South Hill. The state regulation stipulated that regional plans must be submitted no later than November 2011; while single governments had deadlines from November 2008 to November 2010 depending upon population size for plan submittal. The Southside Planning District Commission served as project coordinator of the regional Lake Country Water Supply Plan (LCWSP).

The Southside Planning District (SPDC) was awarded a grant in 2006 to begin the plan development and immediately struck out to obtain the necessary data to fulfill its task. At that time the Department of Environmental Quality was just formulating guidance for preparing the local plans as required by the state regulation. Consequently data collected from localities may not be to the same standard or consistency as later local plan submissions. As guidance, spreadsheet templates and checklists were made available, the SPDC took note and was able to adapt some of the formatted spreadsheets. The PDC submitted its draft plan for review and comments to DEQ in 2008. Comments were not received until August 2010. The Lake Country Plan is regional and therefore had a longer submission deadline. This quick start but subsequent delay has resulted in a number of issues that will be dealt with during the five-year update.

Five-Year Update Changes

Also during the planning period a number of significant changes have occurred that affect the water use patterns of the region—directly and indirectly. A few issues and changes that will be addressed during the five-year plan update include:

The Brunswick County Correctional Unit was closed by the Virginia Department of Corrections. This was the Town of Lawrenceville's second largest water user, accounting for approximately 10% of its water use.

A regional jail facility that will serve Brunswick, Mecklenburg, Dinwiddie and Halifax counties is under development near Alberta. Town of Lawrenceville will be the water source. The facility is projected to use .05 MGD.

At the time of the initial water plan draft, a large industrial water user was planning to locate near Chase City with Roanoke River Service Authority (RRSA) as the provider. Osage, an ethanol producer, was slated to use approximately 1.2 MGD but has since postponed those plans indefinitely. However, the construction of a water line to the town of Chase City is still underway. Chase City's groundwater system will be replaced by surface water from RRSA.

Several landowners have placed conservation easements on their property, which were not contained in the DCR database during the original data-gathering period.

The information collection process for this initial plan was a learning experience and the five-year plan update will enable more accurate results. The data requested from localities should be more defined. The data submitted by localities contained inconsistencies in reporting

periods and increments (gallons per month versus million gallons per day). Water use data obtained from the localities and water purveyors was for similar time periods, i.e. more or less the same year but some may have been initiated 3 or 4 months earlier or later than other providers. Furthermore during the update a longer window usage over additional years should be obtained and compared.

Data tables from state departments, DEQ (2004) and VDH (2005), which were the most recent available at the time, were of slightly differing time periods both from each other and from the localities. This information was difficult to get at the time; therefore, the plan typically used the state reporting information for withdrawal amounts and the local data for typical usage and categorical calculations. During the plan update data requested and collected should contain overlapping annual information.

Plan Design

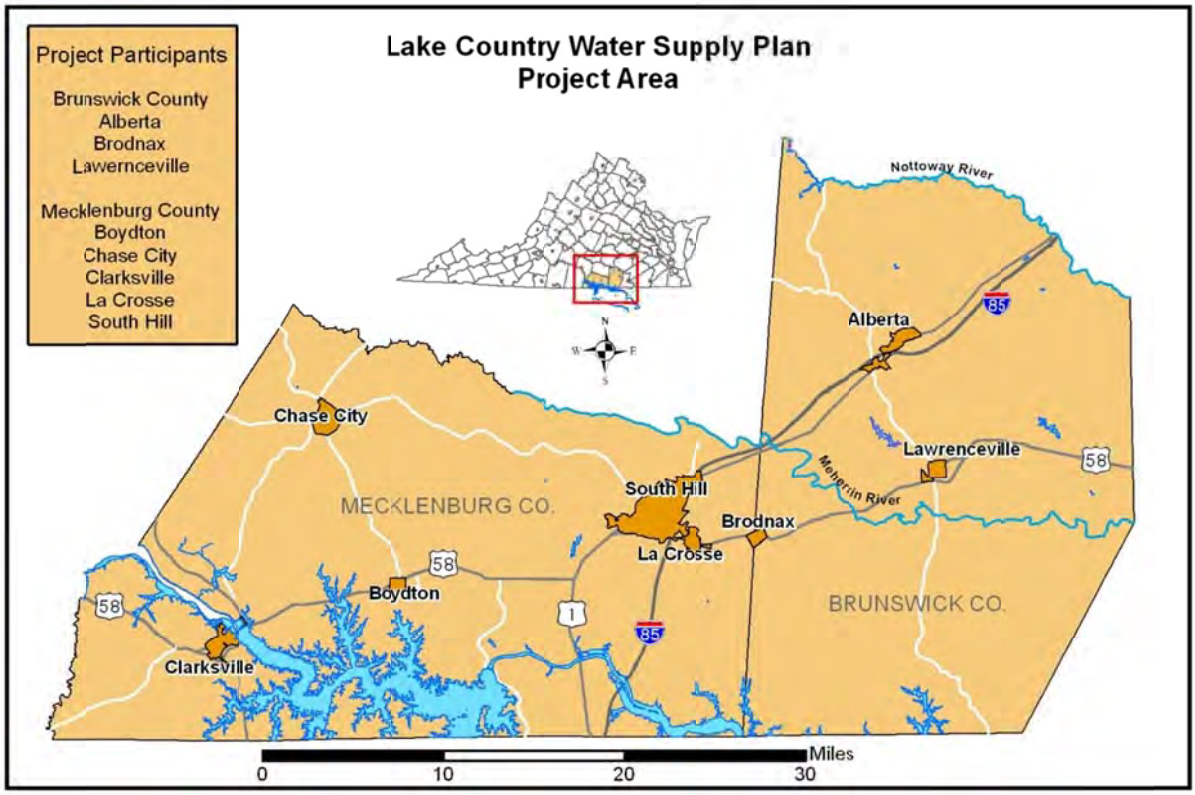
State regulations set forth that the local water supply plan include three components—1) Evaluation of Existing Resources, Water Supply and Water Usage, 2) Assessment of Future Water Demands, Needs, and Alternatives, and 3) Water Demand Management and Drought Response. The following chapters will follow this design in order to document the existing water resources, usage and estimate future needs. The DEQ Local and Regional Water Supply Planning Checklist, which is based on VAC 25-780, is attached as Appendix F and is referenced in section headings.

Data for this planning study were collected from a variety of available public sources, including DEQ's withdrawal permits records (2004), Virginia Department of Health (VDH) Public Water System permits (2005), local water providers, Army Corps of Engineers, U.S.G.S., and miscellaneous resource reports.

2—EXECUTIVE SUMMARY

Project Area

This water supply plan will examine the needs and supply demand for Brunswick and Mecklenburg counties and their eight incorporated towns, encompassing a total area of 1,249 square miles. The counties are located in the Piedmont region of Virginia along the North Carolina border, and are within the Southside Planning District. The planning region has long been known for agriculture and growing tobacco. A good portion of Lake Gaston and John H. Kerr Reservoir are located within these two counties, which are often called "Lake Country."



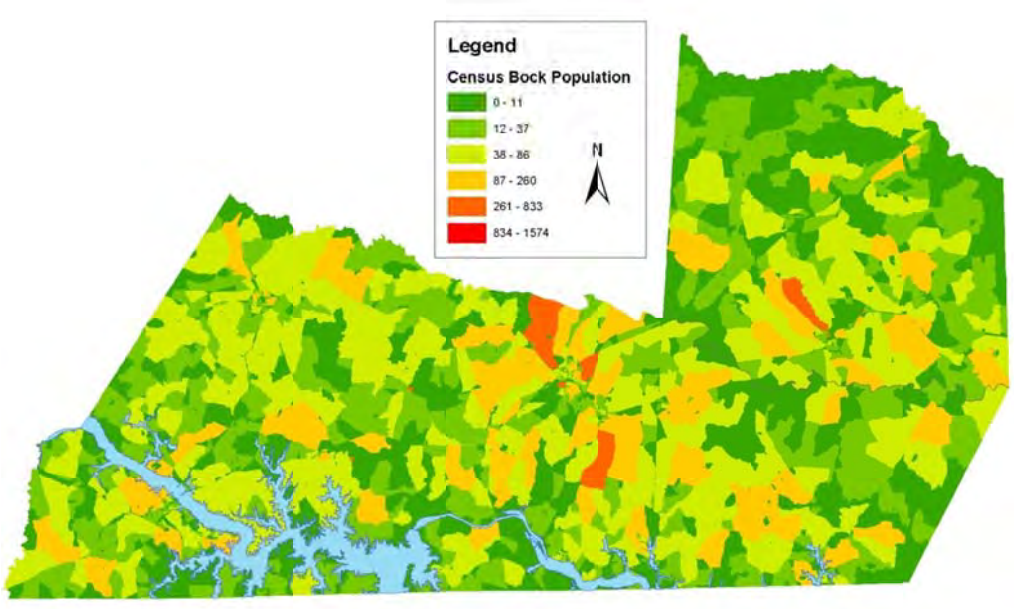
Population

In 2000 approximately 50,800 persons were residing in Brunswick and Mecklenburg counties, which was an increase of 12 percent since the 1990 Census. The population centers are the eight townships. Additionally there is a concentration of housing developments around the lakes. The 2000 Census of Population indicated that 22% of the region's residents lived within the incorporated limits of a town. The overall population density is 42.7 persons per mile: Brunswick County—32.5 ppmi^2 and Mecklenburg County—51.9 ppmi^2.

Estimates show this growth in population has leveled off and projections now indicate little or no growth is anticipated through the next several decades. The state demographer, Virginia Employment Commission, projects growth of less than 1% is anticipated based on current conditions. The economic downturn is one factor used in preparing the projections. Local officials are constantly endeavoring to reverse this trend.

Lake Country Population Summary

	2000 Census		Area in Square Miles			Density per sq. mi. of land area	
Locality	Population	Housing Units	Total Area	Water Area	Land Area	Population	Housing Unit
Brunswick County	*18,419*	*7,541*	*569.37*	*3.23*	*566.14*	*32.5*	*13.3*
Town of Alberta	306	158	1.1	0	1.1	278.2	143.6
Town of Brodnax	317	139	0.71	0.01	0.7	452.9	198.6
Town of Lawrenceville	1,275	459	0.92	0	0.92	1385.9	498.9
Mecklenburg County	*32,380*	*17,403*	*679.29*	*55.36*	*623.93*	*51.9*	*27.9*
Town of Boydton	454	165	0.82	0	0.82	553.7	201.2
Town of Chase City	2,457	1,249	2.19	0	2.19	1121.9	570.3
Town of Clarksville	1,329	753	2.01	0.03	1.98	671.2	380.3
Town of La Crosse	618	314	1.16	0	1.16	532.8	270.7
Town of South Hill	4,403	1,988	6.35	0.03	6.32	696.7	314.6
Lake Country Planning Area	***50,799***	***24,944***	***1,249***	***59.0***	***1,190***	***42.7***	***21.0***



Local Economy

While the Planning Area counties are rural they are in excellent proximity to large regional markets and have an outstanding transportation system, which includes an interstate and several U.S. highways, two municipal and one regional airport. Two international airports are located within a 100-mile radius. The region has an abundance of resources including educational facilities, industrial and residential sites, medical services, outdoor recreational facilities and the two lakes comprising over 1,100 miles of shoreline. These resources enhance the area's competitive advantage as an attractor of people and business.

However, this region has been experiencing an economic decline in the last few decades as farming became less and less viable for the small farmer. For decades, even centuries, the economic structure of the region has revolved around agriculture with tobacco being the principal crop. As a result of the Tobacco Buyout Bill, which eliminates tobacco market quotas and price supports, most tobacco farming is expected to shift to the large corporate operations. Some farmers will seek to alternative crops or agri-businesses. Many will leave farming entirely.

During the fifties, sixties and seventies many textile manufacturers built businesses in Southside Virginia, benefiting from readily available labor exiting the farms. As the textile sector grew the area's economy developed a dependence upon this industry. With the passing of the North American Free Trade Agreement (NAFTA), the region began experiencing another severe economic blow. Industries have been attracted by the cheap labor in Mexico and overseas, and thousands of jobs have been lost. Since 2000, approximately 4,000 jobs have been lost in Planning District 13; of these 43% or 1,600 were in the textile/apparel sector. One of the textile industries that closed was Burlington Industries, a major water user in the town of Clarksville.

From 2001 to 2005 the District experienced an average unemployment rate of 8.2 percent. In comparison, the state average unemployment rate over the same time period was 3.7 percent.

As traditional manufacturing and agricultural jobs disappear, local economic development offices strive to develop new strategies and programs to improve the economy. These programs include workforce training, infrastructure improvements including water and wastewater treatment facilities, provisions for high-speed communications, development of business and industrial parks, downtown redevelopment, and development of the tourism industry as a further attractor of business and people to the area.

Two primary components of this strategy as mentioned are the provision of water and at the same time protection of the region's natural resources—the lakes and river in particular—as tourism is developed as an industry. This water supply planning process will help local official ensure that both resources are available as the counties and its communities grow.

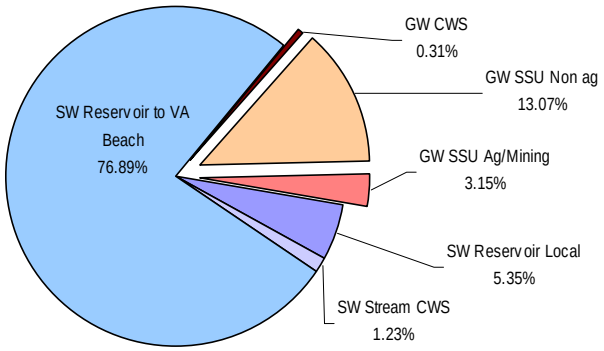
Data Summary

Sources

Brunswick and Mecklenburg counties are located within the Chowan River and Roanoke River Drainage Basins. Surface water provides for most municipal water supplies. The primary surface water source is the Roanoke River through its impoundments—John H. Kerr Lake and Gaston Lake. Great Creek is the water source for the towns of Lawrenceville and Alberta. The town of Chase City and most of the residential subdivisions surrounding Lake Gaston utilize community wells. Approximately 65% of the region's population is served by individual, un-metered dug or drilled wells.

Regional water sources are plentiful and desired by outside urban centers. Lake Gaston and Kerr Reservoir offer a Safe Yield of 352 MGD. Detailed water source tabular data may be found in Appendix A.

Lake Country Withdrawals by Source (MGD)



Water Use

During the study period (2004-2006) community water systems withdrew 2.2 MGD (million gallons per day) of surface water and 0.4 MGD of groundwater. Most of the Lake Country reporting self-supplied users (SSU) are primarily non-consumptive. Agricultural self-supplied users reported use of approximately .06 MGD. Consumptive users from outside the region have withdrawal permits for 80 MGD. Users of individual wells are estimated to withdraw 2.6 MGD. Detailed water use tabular data may be found in Appendix B.

Resource Conditions

Lake Country is primarily rural. Impervious surfaces make up less than 5% of the Lake Country total land area. The lakes and expansive forested lands have provided extensive recreational property and uses and account for more than 75% of the land cover according to the Virginia Non-Point Source (NPS) Assessment. Detailed data regarding area existing resources potentially relevant to water quality may be found in Appendix C.

Water Demand

Current population projections indicate little growth is anticipated over the next decades. Local projections indicate the total Lake Country population of 50,799 in 2000 will grow to only 51,998 by 2040. Industry closures starting in 2000 have contributed to this slow growth. To counter the economic downturn, state and local economic development officials actively market the Southside and Lake Country areas. The ample water resources are an important enticement. While these economic development efforts could result in additional industrial water need and usage; resources are more than adequate to meet this future need.

The overall demand projections for Lake Country Planning Area users indicate a current use of approximately 10 MGD that is anticipated increase to 11.2 MGD by 2040. Additionally users from outside the area have permits to withdraw 80 MGD from the Roanoke River system. Detailed water demand tabulations may be found in Appendix D.

An assessment of Community Water Systems shows that the Lake Country Region's resources—safe yield and permitted capacities—are more than adequate to meet its projected water demand needs. See Appendix D for Population and Demand Projections and Assessment (Table I) and are summarized below.

	Water Supply Adequacy Assessment surplus (+) or deficit (-), MGD				
	2005	**2010**	**2020**	**2030**	**2040**
Lawrenceville					
Average Annual Demand	1.230	1.231	1.225	1.219	1.213
Peak Day Demand	0.845	0.847	0.838	0.829	0.819
Chase City					
Average Annual Demand	0.711	0.711	0.709	0.708	0.706
Peak Day Demand	0.617	0.616	0.614	0.612	0.609
Clarksville					
Average Annual Demand	0.750	0.749	0.747	0.745	0.743
Peak Day Demand	0.459	0.458	0.454	0.450	0.450
RRSA					
Average Annual Demand	2.961	2.959	2.950	2.940	2.930
Peak Day Demand	2.352	2.349	2.334	2.319	2.305
Private CWS					
Average Annual Demand	1.700	1.700	1.698	1.696	1.695
Peak Day Demand	1.600	1.600	1.597	1.595	1.592

Projected Annual Average, Peak Demand, & Capacity						
System	**Year**	**Estimated Annual Average Water Demand (MGD)**	**Estimated Peak Water Demand (MGD)**	**VDH Permitted System Capacity (MGD)**	**Stream Safe Yield (MGD)**	**Source**
Lawrenceville	2040	0.787	1.181	2	3.85	Great Creek
Chase City	2040	0.194	0.291	0.9	NA	GW
Clarksville	2040	0.257	0.555	1	352	SW: Kerr Res.
RRSA	2040	1.250	1.875	4.18	352	SW: Gaston
Non-Municipal CWS	2040	0.205	0.308	1.9	NA	GW
Total Lake Country	2040	2.693	4.210	9.980	Sufficient	

Existing use, contract obligations and other limits, and projected peak demand for the Lake Country systems is summarized below by water source.

Lake Country Water Systems Use & Capacity Summary

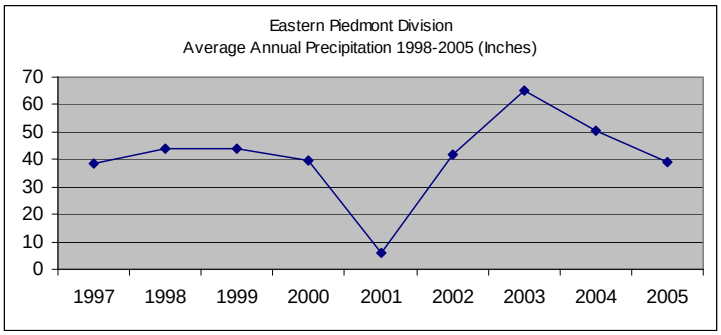
Water System: Name or Type	**Current Use** Ave. annual withdrawals (MGD) Source DEQ 2004	VDH Permit: Water Treatment Plant Capacity (MGD)	Contract Withdrawals or Storage Limits	Projected Peak Demand 2040 MGD
Roanoke River Basin				
Roanoke River Service Authority	1.22	4.18	7.0 MGD	1.88
Future Industrial User (Osage)				1.20 [1]
Town of Clarksville	.25	1.0	Design limit only: 1 MGD or 4 GPM/s.f.	.55
SSUs:. Cogen	2.41	Non-consumptive	2.3 MGD	2.4
Prison	Unused	N.A.	.06	0
Reservoir Withdrawal w/in LC	**3.9 ***	**5.2**	**10.4**	**6.0**
Users from outside LC				
City of VA Beach	60	N.A.	60	60
KLRWP	6.5	10 [2]	20 [2]	20 [2]
Reservoir Withdrawal For water supply	**70.4 ***		**90.4**	**86.0**
Chowan River Basin				
Town of Lawrenceville (includes Alberta)	.73	2.0	2.0	1.2
Stream Withdrawal	**.73**	**2.0**	**2.0**	**1.2**
Groundwater—Lake Country				
Town of Chase City	.185	N.A.	.883	.29
Total Other CWS (24)	.19	N.A.	1.06	.31
SSUs	2.06	N.A. Non-consumptive		2.06
Individual Wells	2.62	N.A.	None	2.7
Groundwater Withdrawal	**5.1**		**1.9**	**5.4**

No user in Lake Country purchases or utilizes water from outside the Planning Area.
Detailed information regarding the existing water sources for the Lake Country Planning Area may be found in **Appendix A**.
N.A. Not Applicable
[1]Includes Osage 1.2 MGD
[2]Source: KLRWP; 20 MGD applied for
* John H. Kerr Hydroelectric power plant not included in total—separate allocation in reservoir & non-consumptive. [5,621.7 MGD]

3—EVALUATION OF EXISTING RESOURCES, WATER SUPPLY, & WATER USE

A. Existing Water Sources *9 VAC 25-780-70*

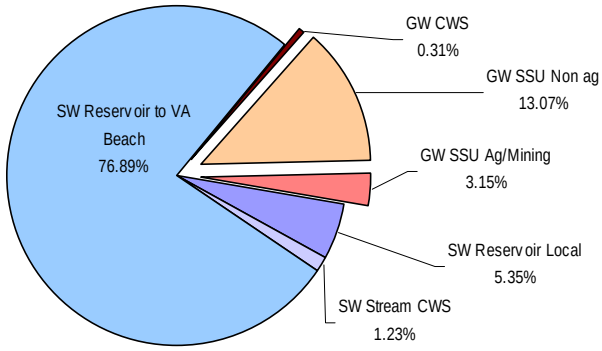
In order to evaluate the local water resources and adequately predict future demand to assess needs if any, an inventory of existing water supply and usage must be prepared. The following sections will identify current water supply sources, systems capacities, local users and usage. The supporting information was collected from a variety of available public sources, including DEQ's withdrawal permits records (2004), Virginia Department of Health (VDH) Public Water System permits (2005), local water providers, Corps of Engineers and miscellaneous resource reports. Additionally most local information was provided for 2005. These two years are considered fairly typical rainfall years and should offer a fair assessment of the existing water supply conditions.



Lake Country Water Sources Summary

Water sources in Lake Country are varied. In Lake Country, the counties do not own or operate any water systems. Most community water supplies are owned by the municipalities, public service authority or are privately owned by homeowners associations and well companies serving subdivisions. Currently only the town of Chase City and most of the residential subdivisions surrounding Lake Gaston utilize groundwater through community wells. In Brunswick County, Lawrenceville owns the municipal system and provides treated water to the town of Alberta. In Mecklenburg, Clarksville and Chase City own and operate their systems. The remaining county towns are served by Roanoke River Service Authority (RRSA), which provides water to the towns of Boydton, South Hill, La Crosse, Brodnax, and several subdivisions in the Bracey community on Lake Gaston. All the towns own their own transmission systems. Surface water provides for most municipal water supplies. Clarksville and the Roanoke River Service Authority withdraw from reservoirs—John H. Kerr Lake and Gaston Lake respectively, which are impoundments of the Roanoke River. Lawrenceville withdraws from Great Creek and the Meherrin River. In addition to the local municipalities, the City of Virginia Beach has a permit to withdraw up to 60 MGD from Lake Gaston and has 10,200 acre-feet of water supply storage space in Kerr Reservoir. Non-

Lake Country Withdrawals by Source (MGD)

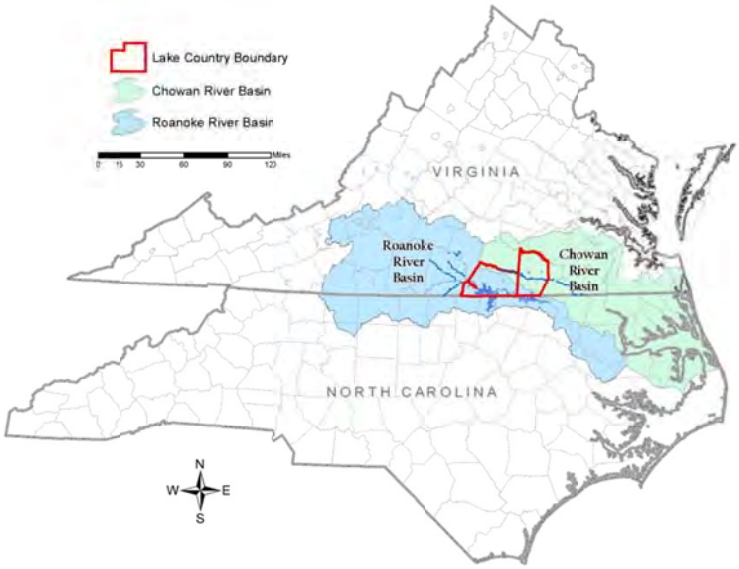


consumptive users include the Kerr Hydroelectric Power Plant and the Mecklenburg Cogeneration Facility.

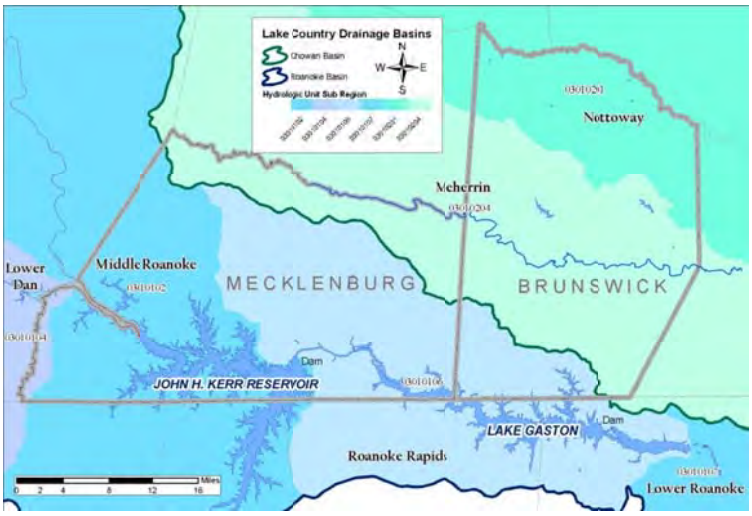
Predominately, as the towns are the principal business and commercial centers for the area, industrial and commercial water users are located within public water system service areas. Groundwater is the water source outside public service authority areas and the municipalities (with the exception of Chase City). This withdrawal is primarily for domestic use, as typically the businesses located outside of community service areas are small water users, such as gas stations, convenience stores and occasionally small offices. Other groundwater users include a limited amount of farm operations and Vulcan Materials. The following sections provide a more detailed discussion of ground and surface water source information. A map showing all permitted community wells and intake structures is found in Appendix E.

DRAINAGE AREAS

Lake Country lies in two drainage basins—Roanoke River and Chowan River. Mecklenburg primarily drains to the Roanoke River, while most of Brunswick drains to the Meherrin, which flows into the Chowan River. Both systems flow into the Albemarle Sound in North Carolina.



The entire Roanoke River watershed is approximately 9,666 square miles in size, 6,066 of which are in Virginia. As can be seen in the figure below, the drainage basins are divided into subareas or units. Mecklenburg lies primarily in the Roanoke River Basin covered by Subarea 3 or Hydrologic Units 03010102 (Middle Roanoke) and 03010106 (Roanoke Rapids). The intakes for the Clarksville and Kerr Lake Regional Water System are located in the Middle Roanoke sub-basin. The intake for the RRSA that serves most of the municipalities in Mecklenburg is located in the Roanoke Rapids sub-basin.



In Brunswick County the Lawrenceville intake is located in the Meherrin sub-basin of the Chowan River Drainage Area. The Chowan River Basin is approximately 130 miles long and drains about 4,900 square miles of land in Virginia and North Carolina. The drainage areas statistics for the reservoirs and streams serving Lake Country are provided in Appendix A, Tables 70C and 70D.

COMMUNITY WATER SYSTEMS-- GROUNDWATER SOURCES

The Virginia Department of Health (VDH) Public Water System permits for 2005 were studied to gather information for the Lake Country Region. Detailed groundwater community water systems data is provided in Appendix A, Table 70B. Some of the groundwater data requested for this study was unavailable and is noted on the attached spreadsheets. There was no information on the screen depth and little for the casing depth. Currently, neither Brunswick County nor Mecklenburg County fall within the Virginia Ground Water Management Area.

Within Lake Country there were VDH permits for 24 systems utilizing wells with a total permitted capacity of 1.59 MGD (million gallons per day). The town of Chase City is the only municipality in the region utilizing wells. Their system has 11 permitted wells, however, three are out of service and therefore only eight of the wells are used. VDH permits indicate a total permitted capacity of .884 MGD for the Chase City system. An ethanol plant that is seeking to locate on the outskirts of Chase City needs 1.2 MGD, which the existing groundwater system could not supply. Should the plant decide to locate they will be served by RRSA via a water line extension from Boydton. The town would then be in a good position to switch sources if desired. *[1/2011 Note: The ethanol plant has postponed its plans to locate in Chase City however, the town has elected to connect to the RRSA.]*

The remaining 23 systems include 20 subdivisions, two trailer parks and one apartment complex. One subdivision, Lake Gaston Americamps, as the name indicates includes a campground in addition to a residential housing section. Additionally no location or knowledge of two systems on the VDH list—Pine Creek Apartments and Sunnybrook Subdivision—could be found.

Figure 1a

Groundwater Systems-2006	# Wells	# Well Systems	Estimated Population	VDH System Permitted Capacity	Average Daily Withdrawal MGD
Community Water Systems—Total	47	24	4,413	1.59 GPD	0.22 MGD [1]

[1] Based on DEQ (2004), VDH (2005) records and Local sources

The surface water sources in Lake Country are John H. Kerr Reservoir and Gaston Lake; and the Meherrin River and Great Creek. Kerr and Gaston Lakes are both impoundments of the Roanoke River. The tables below and in Appendix A, Table 70-C, offer a summary of the capacities and limitations of the streams and reservoirs serving Lake Country. As of 2005 DEQ reports show there were community water system withdrawal permits for a total of 21 million gallons per day (MGD) from Kerr Reservoir and 67 MGD from Lake Gaston. The combined safe yield for the Roanoke River impoundments was 352 MGD based on the drought of record 1980-81.[4] Data for the Great Creek Reservoir is shown below, however, currently the Town of Lawrenceville withdraws from the creek below the dam with the reservoir serving as storage. The Meherrin River serves as an alternate source for the town. None of the community water systems operate a series of interconnected reservoirs.

Figure 1b

Lake Country Surface Water Sources—see also Appendix A, Table 70C

CWS	Treatment Capacity (MGD)	Withdr. Permit Limit (MGD)	Reservoir	Intake Sub-basin	Drainage Area (Sq. Miles)	Surface Area (acres)	On Stream Storage	Safe Yield MGD
Clarksville	1.0	1.0	John H. Kerr	Middle Roanoke	7,780	48,900[1]	Volume= 2,770,000 Ac-ft at elevation 320' msl See table, page 20	352 MGD[4]
KLRWS*	10	20.0						
RRSA	4.18	7.0	Lake Gaston	Roanoke Rapids	7,320	20,300	450,000 Ac-ft 20,000 Ac-ft usable storage	352 MGD[4]
VA Beach*	Not Applicable	60.0						
Lawrenceville	2.0	2.0	Great Creek (Future Supply)	Chowan/ Meherrin	46	590[2]	10,509 Ac-ft[3] 950 Ac-ft water supply storage	Storage See below.
Stream			**Stream**	**Sub-basin**	**Drainage Area (Sq. Miles)**	**Median Daily Flow (7/7/06)**	**Lowest Daily Flow of Record—USGS (cubic feet per second)**	**Safe Yield Million gallons per day**
Lawrenceville (Primary Source)	2.0	2.0	Great Creek	Chowan/ Meherrin	46	Ungaged —Info NA	Ungaged—Info not available	3.85 MGD
(Alternate)			Meherrin R.	Chowan/ Meherrin	552	144 cfs.	2.2 cfs (2002)	2.4 MGD

*Outside Lake Country Planning Area

[1] At full power pool—excludes flood storage volume; elevation 300'.

[2] At crest of emergency spillway

[3] At crest of emergency spillway—excludes 916 AF of sediment and 950 AF water supply storage allocated to the permanent pool.

[4] Based on drought of record 1980-81; Source: 1982 Phase I Study Roanoke River Basin Water Resource Development Plan, VA Beach

A map of groundwater and surface water Community Water Systems is found in Appendix E, Map 1.

Reservoirs

John H. Kerr Reservoir

John H. Kerr Dam is located about 179 river miles above the mouth of the Roanoke River in Mecklenburg County, Virginia and about 20 miles downstream of Clarksville, Virginia. Kerr Reservoir at elevation 300 feet, mean sea level (msl), covers an area of 48,900 acres and has a shoreline length of 800 miles. Kerr Reservoir extends into Mecklenburg, Charlotte and Halifax counties in Virginia and Granville, Vance and Warren counties in North Carolina. In Virginia, Kerr Reservoir is more commonly known as Buggs Island Lake. This name came from an island located just below the dam structure.

John H. Kerr Reservoir is a federal project authorized for recreation, flood control, hydroelectric power generation, fish and wildlife, and water supply. Kerr Reservoir was constructed in 1950 with flood control as its primary function as it was developed in response to a devastating flood in 1940. For this reason its flood storage capacity (1,278,000 acre-ft.) is greater than Lake Gaston or Roanoke Rapids Lake, which are located downstream.

Figure 1c

Kerr Reservoir Storage Allocations—*Source USACE, John H. Kerr Project website*

Objective	Elevation (feet, msl)	Storage capacity (acre-feet)	Storage capacity (MG)
Total Volume	326 ft, msl	3,364,500 (8.09 inches)	1,096,325.7
Uncontrolled Flood Storage	326 to 320 ft, msl	594,500 ac.-ft. (1.43 inches)	193,718.4
Controlled Flood Storage	300 to 320 ft, msl	1,281,400 ac.-ft. (3.08 inches)	417,545.5
Power Drawdown (conservation pool)	300 to 268 ft, msl	1,027,000 ac.-ft. (2.47 inches)	334,649.0
Water Supply	300 to 268 ft, msl	Available in conservation pool—(2006) 50,000 ac-ft designated for water supply storage & 28,885 available; 21,117 allocated by agreement	16,292.6 3,526.7

The project is managed by the U.S. Army Corps of Engineers (ACOE), Wilmington District. As a federal project, any changes to the original purposes and water storage allocations for this multipurpose reservoir would have to be authorized by Congress. The ACOE provides storage of the water supply, while the states control the water supply and water rights. According to the ACOE in May of 2008 of the 50,000 acre-feet of water storage space in Kerr Reservoir, 28,885 acre-feet have not been allocated. The ACOE manages the water storage on a first come, first serve basis. Kerr Reservoir storage contracts and withdrawal permits are listed in Figure 1d on the following page. The John H. Kerr Reservoir Reconnaissance Report, March 2001, states "the Army Corps of Engineers Division Commander may grant requests for water supply storage re-allocation of 499 acre-feet or less. For water supply requests not greater than 50,000 acre-feet, the ACOE Headquarters Commander has the authority to grant the request. Requests that exceed 50,0000 acre-feet would require the approval of the Secretary of the Army and/or Congress. There currently is and will likely continue to be heated competition for John H. Kerr Dam and Reservoir's water supply storage."

Figure 1d
Water Storage Contracts & Withdrawal Permits—John H. Kerr Reservoir/Lake Gaston (Roanoke River)

CWS/SSU	Date of Agreement	Storage Space	Storage	Withdrawal Limits
Clarksville, VA	Pre-project	Allowed to withdraw without storage allocations.	Not applicable Grandfathered	No restriction (2001)
Burlington Industries	Pre-project	Allowed to withdraw without storage allocations; Industry closed in 2002	Not applicable Grandfathered	Industry closed.
Kerr Lake Regional Water System (KLRWS)	2/12/1974	2001 withdrawal: 5.9 MGD		20 MGD
City of Henderson, NC	3/17/2006		10,292 ac.-ft.	
City of Virginia Beach, VA	1/13/1984	1.066 % of the usable storage space between 268 & 300 ft., msl	10,200 ac.-ft. 3,323.7 MG	60 MGD
VA Dept. of Corrections	4/7/1989	.0024 % of conservation (power) storage between 268 to 300 ft., msl	23 ac.-ft 7.49 MG	.06 MGD
Mecklenburg Cogeneration Limited Partnership (MCLP)	6/20/1991	.063 % of conservation storage	600 ac.-ft. 195.5 MG	Daily restriction not found; 2.3 MGD used 2001
RRSA	No agreement			7 MGD

There are five local entities that have agreements for water supply and water storage rights in John Reservoir as long as storage space is available in the conservation pool between elevation 268 and 300 feet, msl. Of these, three are within the Lake Country Planning Area—the town of Clarksville, the Mecklenburg Cogeneration plant, and the Virginia Department of Corrections. In 2005, the town of Clarksville had 784 connections and withdrawals that averaged .23 MGD. According to Corps of Engineer records there are no limits to the town withdrawal as per agreements prior to Kerr Dam construction. The town's treatment plant capacity is one million gallons per day (1.0 MGD). Mecklenburg Cogeneration Limited Partnership (MCLP), a 120 megawatt coal-fired cogeneration facility, which utilizes Kerr Reservoir as process water, cooling water and steam supply, is allocated .063% of the lake's conservation storage or approximately 2.3 MGD. In 1989, a water storage contract was executed between the Corps and the Virginia Department of Corrections. The withdrawal is not to exceed .060 MGD. This pipeline has not been constructed, as the Roanoke River Service Authority, which withdraws from Lake Gaston, now serves the two Mecklenburg prisons.

Other users of Lake Country water resources, located outside the planning area, are the Kerr Lake Regional Water System (KLRWS) and the City of Virginia Beach. KLRWS is the public water service provider for portions of North Carolina counties of Vance, Granville, and Warren. Its three bulk customers are the City of Henderson, City of Oxford and Warren County. These governments in turn supply the towns of Kittrell, Norlina, Warrenton and Middleburg and part of Franklin County. On April 22, 1998, a grandfathered capacity of 10 MGD was approved by the North Carolina Division of Water Resources (DWR) for the KLRWS to transfer from the Roanoke to the Tar and Neuse River Basins. In June 2003, KLRWS submitted an Environmental Assessment

(EA) to the North Carolina Department of Environment and Natural Resources (NCDENR) for the Kerr Lake Water System Expansion to increase their existing water treatment plant capacity from 10 mgd to 20 mgd. This EA was granted a Finding of No Significant Impact (FONSI) on June 19, 2003.[1] The intake structure for KLRWS is located in North Carolina on Nutbush Creek of Kerr Reservoir. In 2001 the regional system withdrew an average of 5.9 MGD from the lake.

[1] Kerr Lake Regional Water System Interbasin Transfer Request & Draft Environmental Assessment Scope

Since 2002 there have been murmurings of a request from Raleigh, Durham and Granville County for a 50 MGD allocation. This chatter has increased since the 2007 drought and the near depletion of Falls Lake and Jordan Lake, which are primary water sources for the Triangle in North Carolina.

The City of Virginia Beach withdraws water from Lake Gaston with the intake located in Brunswick County; however, the storage contract is with the Army Corps of Engineers and Kerr Reservoir due to the interconnectivity of the reservoirs and water level agreements. The Virginia Beach withdrawal is discussed in the Lake Gaston section that follows.

The Phase I Study—Roanoke River Basin Water Resource Development Plan prepared by C.E. Maguire, Inc. for the City of Virginia Beach in 1982 states that "the yield of the three reservoir system (Kerr-Gaston-Roanoke Rapids) is estimated to be at least 352 MGD …" This yield was calculated based on the drought of record at that time--1980-81, when the low flow for non-required purposes such as water supply was 545 cfs (352 MGD). However, the Roanoke Basin Water Supply Plan prepared by the Virginia State Water Control Board in March 1988 using 1984 data estimated the Kerr Reservoir safe yield to be 934 MGD. This plan will use the lower amount.

Lake Gaston

Lake Gaston was constructed between 1960 and 1962. Owned and operated by Dominion (Virginia/North Carolina) Power its function is energy production. The lake's water level fluctuation is generally within one foot when the reservoir is being operated for energy production. Lake Gaston has an additional three feet of storage for flood control, which translates to an additional storage of 63,000 acre-feet.

The Roanoke River Service Authority (RRSA) withdraws water from Lake Gaston, and provides treated water to the towns of Boydton, South Hill, La Crosse, Brodnax and several subdivisions in the Bracey community. Formerly these towns operated separate systems, with South Hill withdrawing from the Meherrin River and the rest utilizing wells. To address deficiencies in capacity available from the Meherrin and low yielding wells, local governments formed the Roanoke River Public Service Authority to operate and maintain a regional water system. Construction on this multi-year project began in 1996 with the installation of 17.5 miles of water main from South Hill southwest along U.S. Highway 58, with branches to the Baskerville and Mecklenburg Correctional Units in Mecklenburg County. The plant began operation in September 2002 with the completion of its 4.0 MGD treatment plant. A 16" water main connects Brodnax and La Crosse to South Hill's existing system, and water transmission lines connect the WTP to Bracey/River Ridge, a populated but unincorporated area of Mecklenburg with particularly low yielding and poor water quality wells. RRSA sells the treated water to the municipalities who still own and maintain their transmission systems. RRSA has several individual customers, located along the transmission lines but outside of the towns' service areas. The raw water intake structure is located near U.S. Route 1, approximately 5.5 miles downstream from Kerr Dam. RRSA withdrawals in 2005 averaged 1.22 MGD. An ethanol plant that is interested in locating in Mecklenburg County will require an additional 1.2 MGD. The potential site is south of Chase City; outside of the town's service area and capacity. Therefore to meet the plant's needs RRSA will provide the water via a water line extended from Boydton. While the water line is two miles outside of the town limits, the construction would place the town in a good position to connect to the RRSA in the future. *[1/2011 Note: The ethanol plant has postponed its Mecklenburg County location plans; however, the town of Chase City has implemented its connection to the RRSA.]*

After years of court battles and arguments against inter-basin transfers, in 1995 the City of Virginia Beach began construction of 76 miles of 60-inch pipeline. The pipeline withdraws water from Lake Gaston, which is in the Roanoke River Basin, into existing reservoirs in southeast Virginia, which are in the Chowan River Basin, to serve the City's needs. Operation of the pipeline began in January 1998. The intake structure and pump station is located on a tributary of Pea Hill Creek in Brunswick County. Virginia Beach is permitted to withdraw 60 million gallons per day from Gaston. The City of Chesapeake is a partner with Virginia Beach and can receive up to 10 MGD of the 60 MGD permitted. The following table provides a history of Virginia Beach water withdrawals since 1998, the first full year of withdrawals. Note highest annual withdrawals were during the height of two droughts—2000-01 and 2007.

Figure 1e--City of Virginia Beach Withdrawals from Lake Gaston

	Total (MG)	Average (MGD)	Min (MGD)	Minimum monthly withdrawal (MG)	Max (MGD)	Maximum monthly withdrawal	Contract limits
1998	10,442	28.5	0.0	352	49.4	1,388	60 MGD
1999	6,200	16.9	0.0	18	49.4	1,320	
2000	6,777	18.5	0.0	144	59.9	1,429	
2001	14,498	39.8	7.0	573	52.2	1,498	
2002	10,095	27.7	4.5	694	44.0	1,055	
2003	2,989	8.2	7.2	218	30.5	350	
2004	5,642	15.4	5.0	218	50.0	1,369	
2005	8,825	24.2	7.0	206	50.4	1,410	
2006	8,640	23.7	0.0	204	50.3	1,449	
2007	13,469	36.8	3.4	199	60.05	1,831	

Tidewater Divisional Precipitation Trend

NOAA—Climatological Data Annual Summaries

	Precipitation	Departure
1998	49.90	6.25
1999	53.69	10.04
2000	47.51	3.86
2001	34.38	-9.27
2002	46.07	2.42
2003	63.61	19.96
2004	54.62	10.97
2005	44.61	-1.02

Dry Year

Figure 1g—Lower Roanoke River Basin Reservoir Physical Attributes

Source: Roanoke Basin Water Supply Plan, March 1988 & ACOE J.H. Kerr Project website: http://epec.saw.usace.army.mil/kerr05.htm

Reservoir	Reservoir Length (miles)	Length of Shoreline (miles)	Elevation at full power pool (ft.)	Surface area at full power pool (acres)	Volume at full power pool[1] (acre-ft.)	Hydro-power drawdown (ft.)	Flood storage volume (acre-ft.)	Retention Time (days)[2]
Kerr	56	800	300	48,900	1,472,000	7	1,278,000	93
Gaston	34	350	200	20,300	450,000	1	63,000	29
Roanoke Rapids[3]	8	47	132	4,600	77,140	3-5	0	5

[1] Excludes flood storage volume.

[2] Based on full power pool volume and annual mean flow of 7,951 cfs as measured at Roanoke Rapids gage for water years 1964-1993.

[3] Located 8 miles below Gaston Dam in NC; created by Roanoke Rapids Power Station (Dominion Power) dam.

The town of Lawrenceville obtains its water from Great Creek, with an auxiliary supply from the Meherrin River. In 1993 an impoundment of Great Creek was completed just west of Lawrenceville to provide flood control. The 212-acre Great Creek reservoir was a project of the Soil Conservation Service, USDA, and is owned and operated by Brunswick County. The reservoir is a future water resource for the town, currently serving as raw water storage (see Future Water Source section below). The primary intake for Lawrenceville is on Great Creek, approximately one mile below (east of) the lake dam. The creek, which has a 46 square mile drainage area, is ungaged therefore long-term data is unavailable. However, the town reported that during the 2002 drought the water level at the intake did not fall more than one foot and the town did not experience an emergency situation at that time. Lawrenceville's Meherrin River auxiliary intake and pump is sized for 1.0 MGD capacity. There is good volume and flow in the Meherrin River and its tributary, Great Creek, during periods of normal rainfall. According to USGS records, the Meherrin River stream-gage at Lawrenceville recorded a minimum daily flow of 2.2 cfs in September of 2002. The previous minimum daily flow rate of 4.2 cfs was set in 1954. USGS also indicated the median daily discharge as 144 cfs (July 7, 2006).

The Lawrenceville water treatment plant has a maximum design capacity of two million gallons per day (2 MGD). The town's five elevated water tanks, two ground storage tanks, and plant clear well provide a total treated storage capacity of 1.89 million gallons. Under contractual agreement, Lawrenceville supplies up to 0.2 MGD of finished water to the town of Alberta. Currently Alberta uses 0.05 MGD on average. Alberta has two elevated storage tanks for a total storage capacity of 275,000 gallons (0.275 MGD). The table below and Appendix A Table 70D provide the system design capacities, safe yield and withdrawal permit limitations.

Figure 1h

Water System Name	Stream or River Name	Drainage Area sq. mi.)	Avg. Daily Withdrawals (MGD)	Maximum Daily Withdrawals (MGD)	Safe Yield of Stream ** (MGD)	Lowest Daily Flow of Record	WTP Capacity / Pump Station Capacity
Lawrenceville	Great Creek	46	.716	.827	3.23 at intake**	Ungaged stream; Data not Available	2.0 MGD / 2.0 MGD
Lawrenceville (auxiliary source)	Meherrin River	552	0	0	1.95 at intake**	2.2 cfs	2.0 MGD / 1.0 MGD
Alberta	Great Creek*	See L'ville					

* *Alberta purchases water from Lawrenceville*

** *Source: Comprehensive Water & Sewer Study for Brunswick County, VA, B&B Consultants, 1997*

Future Source— Great Creek Reservoir & Dam

Lawrenceville plans to construct lines directly to the Great Creek Reservoir so as to have access to better quality raw water. The town would like to have this construction in place by 2012 but the timing is largely dependent on funding availability. "County Park at Great Creek," located on the shores adjacent to the reservoir dam, provides recreation for area residents. Virginia Game and Inland Fisheries constructed a boat ramp and courtesy pier at the park; however, use of gasoline

engines and swimming are prohibited on the lake. For greater use, the capacity of the pump, intake, and lines to the intake should be increased to accommodate that of the water treatment plant. If the Lawrenceville water treatment plant were upgraded, the two water sources—Meherrin River and Great Creek Watershed Lake—would be combined.

Great Creek Reservoir & Dam—Future Source								
Element of Structure	**Determining Factor**	**Elevation**	**Surface Area (Ac.)**	**Storage**		**Inflow**		**Peak Outflow CFS**
				Acre-Ft	**In***	**Vol. In***	**Max. Rate CFS**	
Crest of Riser	100 Year Sediment & 950 AF Water Supply	214.0	205.0	1,809	0.83	-	-	-
Creast of Emergency Spillway	100 Year Frequesncy Moisture Con. II	238.6	590.0	10,509[1]	4.84	-	-	765
Design High Water	TR-60, 52 & Sec. 14	243.0	695.0	13,397[1]	6.17	7.79	16,032	4,201
Top of Dam	TR-60 & 52	256.8	1180.0	25,988[1]	11.96	25.14	51,849	33,899

SELF-SUPPLIED USERS (SSU) ***9 VAC 25-780-70C-1E, 1F & 1I***

The Regulations define "self-supplied user" as any person making a withdrawal of surface or ground water from an original source (e.g., a river, lake, reservoir, etc.) for their own use. Self-supplied users do not receive water from a community water system. In the Lake Country Planning area available records from DEQ and VDH indicate that as of 2004 there are four (4) such users that withdrew at least 300,000 gallons per month.

SSU—Surface Water: Mecklenburg Cogeneration and John H. Kerr Hydroelectric Power Plant are self-supplied users of surface water, and were discussed in the previous "John H. Kerr Reservoir" section. Both facilities are non-consumptive uses. The John H. Kerr Power Plant uses the greatest volume of water; however most is returned to the source stream. The Cogeneration Plant maximum daily withdrawal is limited to 3.55 MGD and is limited to 600 acre-feet of the reservoir conservation storage pool. See Appendix A Table 70E for non-agricultural self supplied surface water user information.

SSU —Groundwater: The Department of Environmental Quality, Division of Water Resources Management, maintains records of entities withdrawing more than 300,000 gallons a month of ground water for beneficial use—domestic, including public water supply, commercial, industrial, or agricultural. According to the DEQ web site, the Virginia Water Withdrawal Reporting Requirements (9 VAC 25-200-10, et seq.) require reporting for any withdrawal whose daily average withdrawal exceeds 10,000 gallons per day, with the exception of crop irrigation. Reporting of crop irrigation applies to withdrawals exceeding one million gallons in any single month (except for ponds that collect from diffuse surface water unless they are dug ponds that intercept the groundwater table).

The DEQ report showed that only one **non-agricultural self supplied water user** reported using more than 300,000 gallons per month of ground water—Lawrenceville Vulcan Materials plant. This mining operation uses a pit sump to remove groundwater, which is pumped into Robinson Creek, a Meherrin River tributary, located about 6 miles east (downstream) of the Lawrenceville

Water Treatment plant. The report shows withdrawals of 2 MGD in 2004. Appendix A Table 70F for non-agricultural self supplied groundwater user information.

Agricultural Self-supplied Water User—Only one farm operation reported to DEQ as withdrawing more than 300,000 gallons per month in 2004. SJB Farms, Inc. is a hog farm, which uses a well and ponds. There are no meters on the farm wells so the estimates are based on a multiplier of two gallons per hog and DEQ's records for the number of hogs permitted. Discussions with DEQ field staff indicated several other farms had permits but their operations were decreasing. A calculation using animal population indicated the potential for slightly more withdrawal. Even though these farms were reducing stock and water use, the higher estimate of .06 MGD was used to allow for increases. Both estimates are shown in Appendix A, Table 70-I.

Self-Supplied Users-- See Appendix A, Tables 70-E, 70F, 70I, 70-2I.

Water System (User) Name	Source/ Type	Description	2004 Average Daily Withdrawals
Mecklenburg Cogeneration*	Kerr Reservoir	PF Power Plant/Fossil fuel (Coal)	2.40 MGD
John H. Kerr Hydropower Plant*	Kerr Reservoir	Power Plant—Hydro power	5,621.70 MGD
Vulcan, Lawrenceville Quarry*	Groundwater	Stone Quarry—Pit Sump	2.00 MGD
SJB Farms, Inc.	Groundwater & Ponds	Hog Farm	0.06 MGD

**Non-consumptive*

WATER PURCHASES OUTSIDE THE PLANNING AREA 9 VAC 25-780-70C-1G & H

There are no contracts or proposals by Community Water Systems within the planning area to purchase water from water supply systems outside the Lake Country planning area. There is no data available regarding water available to be purchased outside the planning area.

As noted in the earlier discussion under "Reservoirs" of Kerr Reservoir and Lake Gaston, the City of Virginia Beach has an intake in Brunswick County and a contract with Virginia Power to withdraw and maximum of 60 MGD from Lake Gaston. Additionally the Kerr Lake Regional Water System, which is located outside the Lake Country Planning Area, has a contract to withdraw a maximum of 20 MGD from Kerr Reservoir. See Appendix A, Tables 70C and 70H-2.

An estimated 30,791 persons and 31 businesses are served by approximately 12,786 individual wells in the planning area, and with few exceptions, these are located outside of the community systems service areas. These numbers were estimated based on the 2000 Census of Population. Household size was determined by dividing the population by the number of housing units. Population using individual wells was estimated by subtracting the population on a community water system from the total county population. The population outside a community water system was divided by the household size factor to quantify the number of residential wells. The approximation of individual wells for businesses is derived from the Virginia Department of Health Waterworks/Owners listing of users of greater than 300 gallons per month. This list indicates only 31 wells for non-residential users that withdraw more than 300,000 gallons per month. While this is a very basic estimate, the commercial uses not captured in this method would largely consist of very low water users such as convenience stores or gas stations.

Estimate of Individual Wells-- *See Appendix A, Table 70J*

Location	Lake Country Total Population 2005 Estimate	Population on CWS	Household size factor[1]	Estimated population on Individual Wells[2]	Estimated # of Residential Wells[3]	Estimated Businesses on wells[4]
Brunswick Co.	18,400	6,288	2.47	11,934	4,832	12
Mecklenburg Co.	32,400	13,357	2.38	18,857	7,923	19
Lake Country Total	**50,800**	**19,645**		**30,791**	**12,755**	**31**

[1] 2000 Census Population per Household
[2] Census Population Estimate – Population in CWS
[3] Population on wells / Household size factor
[4] Number of non-community systems on VDH Waterworks Owners and Operators list 2005

No recent source water assessment plans for the study region were found. The Phase I Study—Roanoke River Basin Water Resource Development Plan for the City of Virginia Beach in 1982, provides a good discussion of the appropriateness, condition, and available water supply in Kerr/Gaston/Roanoke Rapids Lakes and has been referenced in the text. Additionally no wellhead protection programs were found to be in place or developed.

The Virginia State Water Control Board prepared the Roanoke Basin Water Supply Plan in March 1988 (Planning Bulletin 339). This study is dated as it was done prior to the Virginia Beach withdrawal was approved and constructed as well as the development of the Roanoke River Service Authority. The study that the "Available Supply (Outflow + consumptive use)" was 2,381 MGD and gave the Lower Roanoke safe yield as 112 MGD. Additionally, no source or system deficits were identified in the LR Subarea. "Surface water sources, which will continue to supply the majority of water in the Subarea, appear to be capable of supplying an adequate amount of water during the planning period. Also, groundwater supplies, which will continue to be used by some of the smaller systems, appear to be sufficient to supply groundwater demands in the Subarea during the planning period," [which extended to 2030].

B. Existing Water Use *9 VAC 25-780-80*

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

Data for community water systems was obtained from the localities and service providers. Information for many of the private well systems was not readily obtainable; and therefore data from DEQ's permits records (2004) and the Virginia Department of Health (VDH) Public Water System permits (2005 data, obtained April 2006) were used. Records for water usage for individual wells are non-existent; therefore several alternatives were explored to approximate usage:

1. The first employs a standard "Equivalent Residential Connection" (ERC), of 400 gallons per day per residential connection: 400 GPD X 12,755 residential connections = 5.1 MGD by individual well users.
2. Alternatively per capita use found in the USGS National Water Information System (NWIS) may be used: 75 GPD X 30,791 (estimated population not served by community water = 2.3 MGD by individual well users.
3. Due to the disparity of these two methods another approximation was performed using the total average daily use and population within all groundwater community service areas. The groundwater systems include the town of Chase City and 23 private systems. Appendix B, Table 80-B1-B5 indicates the groundwater systems population was 4,413 and used .4 MGD. Thus a per capita daily use of **85 GPD** was established. This was selected as the most appropriate usage for the region, which indicated usage of 2.6 MGD through individual wells.

COMMUNITY WATER SYSTEMS (CWS): ***9 VAC 25-780—80B***

There are 33 community water systems (CWS) within the planning area, which includes eight towns, the Roanoke River Service Authority, and 24 housing developments. Of the housing subdivisions, only three have estimated usage of more than 300,000 per month. With the exception of River Ridge in the Bracey community of Mecklenburg, all the subdivisions outside of the municipal systems utilize groundwater. Appendix B, Table 80B1-B5 provides the population, number of connections, average and maximum daily withdrawal, as well as annual and monthly average use for each community water system in Lake Country. Of the 33 community water systems, 23 are private systems utilizing groundwater. These non-municipal systems have 1,220 total connections with a population of 2,171 that according to local and DEQ records, withdraw .2 MGD (million gallons per day). Many (14) of these private systems are in close proximity to the lakes and consequently many of the residences are occupied seasonally.

The public community water systems have a total population of 17,474, with 8,253 connections, and use 2.4 MGD. Adding private systems usage brings total CWS use to 2.6 MGD. A planned extension for an industrial user needing 1.2 MGD could raise this total to approximately 3.8 MGD.

Self Supplied Users:

Among self-supplied non-agricultural users of more than 300,000 gallons per month of surface water is the Mecklenburg Power Station (a.k.a. Mecklenburg Cogen). The plant has a contract for 2.3 MGD, although DEQ records indicated a withdrawal in 2004 of 2.4 MGD. The Cogen, which is physically located within the Clarksville Water Service area, uses raw water to create steam to generate power. A portion of the water may return to the stream but for the purpose of this study the full amount has been included with the community water systems use summary table on page 28. The Department of Corrections (DOC) has a contract that would allow withdrawal of .06 MGD from Kerr Reservoir; however, this has not been activated. The two prisons in Mecklenburg County are now supplied by water through the RRSA Treatment Plant and therefore there is no planned use by the DOC. Additionally non-consumptive use of the Kerr Reservoir includes 5,624 MGD for power generation. Water use data for facilities using more than 300,000 gallons per month of surface water are found in Appendix A, Table 70E.

No self-supplied agricultural users of greater than 300,000 gallons per month were found to be located in a CWS.

Records do not indicate individual residential well use within a CWS. According to DEQ 2004 records, two self-supplied non-agricultural users of groundwater were found to be located within the Clarksville Community Water Service Area although each used less than 300,000 gallons per month. Kinderton Country Club has a well for the clubhouse. According to DEQ records the Club used .12 million gallons (MG) annually or .01 MG monthly. Also the Mecklenburg Cogen has a well for the employees use in the facility, and uses .339 million gallons annually (DEQ 2004). See Appendix A, Table 70J.

Disaggregated Use

Most of the municipal systems do not keep metering records by water use category; therefore these values are very approximate. All the towns provided some estimates of the disaggregated information except Chase City, as the town keeps no record of the type of connection. To find an approximate usage by category, the VEC list of employers was used to determine a number of businesses. This listing includes the NAICS code that explains the type of business, enabling the extraction of industrial from commercial uses. Appendix B Table 80B9 provides disaggregated average monthly uses for each Community Water System. A summation of the entire planning area shows the following percentages of disaggregated water use:

Water Use By CWS	% of Use	MGD
Residential	29%	.80
Commercial/ Lt. Industrial	24%	.60
Industrial	7%	.20
Schools/Institutional	2%	.05
Prisons	17%	.40
Processing or Unaccounted for Losses	19%	.50
Water Sold by LC CWS to other areas	2%	.05

In Stream Beneficial Uses

Lawrenceville is the only system utilizing a stream for its intake. The primary in-stream beneficial use of Great Creek is water supply. Secondly the creek serves recreation through its scenic value. The creek is not deep enough for navigation or to fish. The intake does not negatively affect the scenic value.

SELF SUPPLIED USERS OUTSIDE CWS 9 VAC 25-780—80C & D

The Vulcan Materials uses a pit sump to remove 2.04 MGD of groundwater from the Lawrenceville Quarry, which is outside a CWS. As stated earlier this is also non-consumptive use. SSU non-agricultural water use data for facilities using more than 300,000 gallons per month of ground water are found in Appendix A, Table 70F.

Among self-supplied agricultural users of groundwater outside a CWS, one operation withdrew .014 MGD of groundwater in 2004 according to DEQ records. Interviews with DEQ field staff indicated that three other farms had permits to withdraw water but had fallen below the reporting requirement. Furthermore these operations were reducing stock making it likely the withdrawals would decrease even more. Table 70I in Appendix A shows water withdrawal estimates for the agricultural uses both based on usage per animal as well as reported to DEQ in 2004. Use by animal is a maximum likely scenario, and which could equal .06 MGD.

INDIVIDUAL WELLS USE 9 VAC 25-780—80E

As stated in the Water Sources section on page 21, the methodology used to estimate the number of wells and population served by individual wells is as follows:

The 2000 Census was used to determine household size in each county. Population using individual wells was estimated by subtracting the population on a community water system from the total county 2005 Census population estimates. The population outside a community water system was divided by the household size factor to quantify the number of residential wells. The approximation of individual wells for businesses is derived from the Virginia Department of Health Waterworks/Owners listing of users of greater than 300 gallons per month. This list indicates only 32 wells for non-residential users that withdraw more than 300,000 gallons per month. While this is a very basic estimate, the commercial uses not captured in this method would largely consist of very low water users such as convenience stores or gas stations.

As stated earlier, a per capita daily use of 85 GPD was established using the total average daily use and population within all groundwater community service areas. Thus using the above methodology and worksheet found in Appendix A, Table 70J it is estimated that there are 12,755 residences and 31 businesses served by individual wells in the planning area. A population of approximately 30,791 is served by individual wells. Using the daily per capita use factor of 85 gallons per day, 2.6 MGD are being used outside of a community water system service area.

As can be seen in the summary table below the planning area uses a total average of 9.8 million gallons per day.

Lake Country Usage Estimates

Community Water System Area	# Systems/ SS User	Estimated Population	Connections	Average Daily Use [1] **MGD**	Other Average Daily Use **MGD**	Daily Per Capita Use **Gallons**
Community Water Systems	33	19,645	9,473	2.6 [1]	0	132
Self-supplied Users w/in CWS—Ag> 300K/month	0	0	0	0	0	NA
Self-supplied Users w/in CWS—Non-Ag > 300K/month	1	NA	1	2.41 [2]	0	NA
Self-supplied Users w/in CWS—< 300K/month	2	NA	2	0.12	0	NA
Outside Community Water System Area						
Self-supplied Users—Non-Agricultural > 300K/month:						
Vulcan-L,ville Quarry	1	NA	NA	2.04 [2]	0	NA
Kerr Hydropower Plant	1	NA	NA	0	5,621	NA
Self-supplied Users—Agricultural > 300K/month *(SJB Farms, Inc.)*	1	NA	NA	0.06 [5]	0	NA
Individual wells: Brunswick	NA	11,934	4,832 Wells	1.01 [3]	0	85
Individual wells: Mecklenburg	NA	18,857	7,923 Wells	1.60 [3]	0	85
TOTAL		**50,436**		**9.84**	**5,621 ***	**106**

[1] Based on DEQ, VDH records and Local sources

[2] Non-consumptive

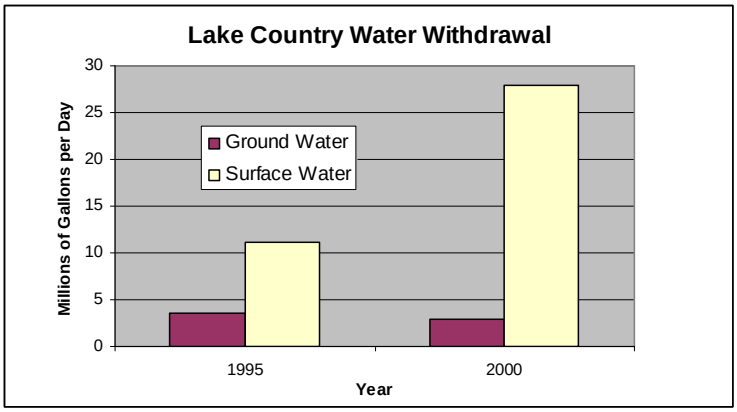
[3] Estimates based on: Population on wells (Census 2005 Estimates – Population in CWS) X 85 gallons per capita

[4] Estimates based on: Estimated # Wells X 400 Gallons per connection

[5] Estimates based on livestock population

* Never leaves stream; Non-consumptive

N.A: Not applicable

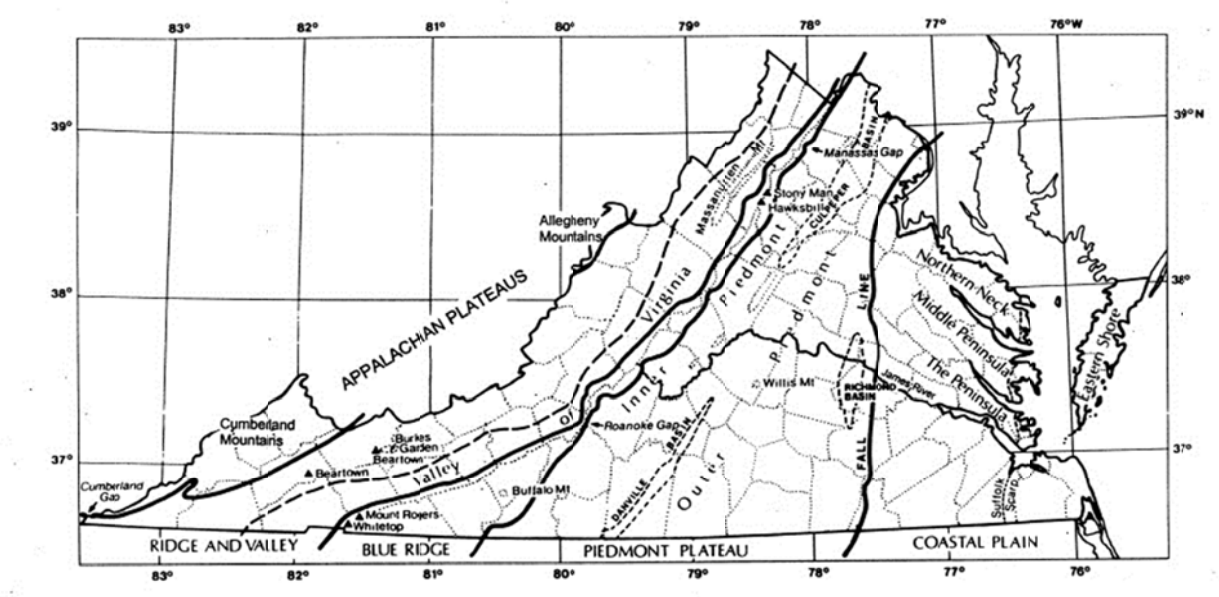


C. Existing Resources *9 VAC 25-780-90*

GEOGRAPHY, GEOLOGY, AND SOILS— ***9 VAC 25-780—90 (3 a)***

The Lake Country Planning Area is located in the southern portion of the Piedmont Region of Virginia. The Piedmont's geology is diverse, which leads to a wide range of water availability and quality levels. The Piedmont's geology is diverse, which leads to a wide range of water availability and quality levels. The Piedmont of Virginia extends eastward from the Blue Ridge to the Fall Line, where unconsolidated sediments of the Atlantic Coastal Plain cover Paleozoic-age and older igneous and metamorphic rocks. The Piedmont is characterized by deeply weathered, poorly exposed bedrock and a high degree of geological complexity. [DMME website [http://www.dmme.virginia.gov/Dmr/DOCS/Geol/pied.html]. The terrain is characterized by gently rolling hills with elevations varying from 150 feet to 700 feet above sea level. The availability of both groundwater and surface water resources are present throughout the District. The most common use of groundwater for the area is for rural and domestic supplies. Soil associations and underlying rock formations produce water of generally good quality, dependent upon well construction and location.

Geomorphic, or *physiographic*, regions are broad-scale subdivisions based on terrain texture, rock type, and geologic structure and history. Lake Country lies in the Piedmont Plateau physiographic region and in the Outer Piedmont Sub-province. The Outer Piedmont sub-province is broad upland with low to moderate slopes. The surface of this region rises in elevation from approximately 150 feet above sea level at the eastern boundary of Brunswick (which is approximately 10 miles west of the Fall Line and the beginning of the Coastal Plain) to about 700 feet in western Mecklenburg County. The underlying bedrock is igneous metamorphic.

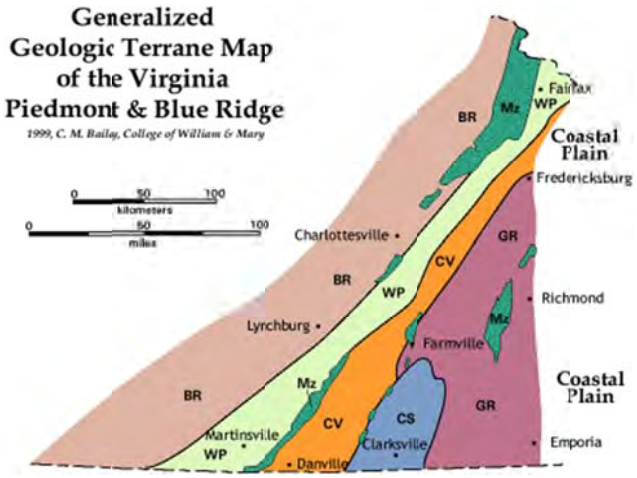


The terrain is distinguished by gently rolling hills, deeply weathered bedrock, and very little solid rock at the surface. Most rocks at the surface become weathered in the humid climate and buried under a blanket of “rotten rock”, called saprolite several meters thick. Outcrops of solid rock may

be found in stream valleys where the saprolite has been removed by erosion. Most of the rocks range in age from the late Pre-Cambrian to Paleozoic.

Source: http://www.wm.edu/geology/virginia/phys_regions.html#piedmont

Piedmont Geologic Terrane



Many of the rocks in the Piedmont have a complex geologic history, and some may have formed in areas outside of North America. Geologic terranes are groups of rock with very different pasts and are separated from one another by faults. Lake Country lies within the Goochland Raleigh Belt and the Carolina Slate Belt**.**

The Goochland Raleigh Belt consists of Proterozoic rocks that may have formed in and on the margin of ancient North America. Granite rocks of the Paleozoic age are common. The *Carolina Slate Belt* consists of Neoproterozoic meta- volcanic, plutonic, and sedimentary rocks that formed outboard of North America.

Brunswick County Geology & Groundwater Resources

Bedrock throughout Brunswick County is comprised of igneous and metamorphic, covered in most places by a layer of soil and weathered rocks approximately 10 to 60 feet thick. These rocks are generally considered poor aquifers and successful wells usually obtain groundwater from either the adjacent soil cover or from fractures occurring in the bedrock.

Shallow large-diameter bored wells generally furnish adequate water supplies for domestic and agricultural use throughout the county. The most successful wells of this type are located in relatively low or flat areas where bedrock is generally covered by 25 feet or more of soil and weathered rock. Contamination by surface sources and decreased yields due to inadequate rainfall are major problems associated with these wells.

Drilled wells are constructed to exclude near surface waters by casing off all unconsolidated materials above firm bedrock. Wells of this nature are usually six inches in diameter and range in depth from 32 to 1,575 feet. Reported yields from these wells range from 0 to 115 gallons per minute. Approximately three-fourths of all reported wells are less than 200 feet deep and yield less than 15 gallons per minute. It is important to note that well yield is not proportional to well depth. Well location is a more important factor. Although drilling seems to have been most successful in the western portion of the county and least successful in the central portion, moderate quantities of groundwater are thought to be available in all areas at selected drilling sites. Wells in granite and gneiss rocks must be located to intersect fracture zones beneath the water table, and wells underlain by schistose and phyllitic rocks should be located at lower elevations and in close proximity to surface water sources.

The chemical quality of groundwater is fair to good in most of the county. Water is sometimes acidic in the eastern and central locations of the county and may also be high in iron content in the south and southeast. Ground water from rocks in the western portion of the county is reported to be of the best chemical quality, seldom irony or acidic, and usually soft and low in dissolved mineral content.

Mecklenburg County Geology & Groundwater Resources

Mecklenburg County is underlain by igneous and metamorphic bedrock covered by 30 to 50 feet of soil and weathered rock in most areas. Greenstone and slate are interlayered and steeply inclined in the western two-thirds of the county and steeply dipping gneisses and schists underlie the eastern third. A zone of granite about five miles wide occurring near Baskerville and North View and extending northward across the county separates these two areas.

Many of the wells occurring in the rural areas are either bored or dug in the zone of soil and weathered rock, generally at depths of 30 to 50 feet. These large diameter wells usually obtain sufficient quantities of water for agricultural and domestic needs. These shallow wells may be susceptible to decreased yields during periods of inadequate rainfall and also contamination from nearby sources of surface pollution. Drilled wells are constructed to eliminate near surface water by casing off the zone of soil and weathered rock, obtaining water from bedrock fractures, which usually occur at depths of less than 300 feet. Nearly two-thirds of reported wells are 100 to 300 feet deep and almost one-fourth are 300 to 500 feet deep. Approximately 60 percent of these wells produce between 1 and 25 gallons per minute, and 35 percent range from 25 to 90 gallons per minute in yield. The chemical quality of groundwater obtained from granite rock is usually good, but other bedrock in the county may produce moderately hard water and contain small amounts of iron.

RIVER BASINS

Lake Country lies in two drainage basins—Roanoke River and Chowan River. Mecklenburg primarily drains to the Roanoke River, while Brunswick drains to the Meherrin, which flows into the Chowan River. Both systems flow into the Albemarle Sound in North Carolina.

Roanoke River Basin

The Roanoke River originates in the Blue Ridge Mountains of Virginia and flows east/southeast through the Piedmont and Coastal Plain to the Albemarle Sound in North Carolina. The entire watershed is approximately 9,666 square miles in size, 6,066 of which are in Virginia.

The Roanoke River Basin includes all or portions of the Virginia counties of Botetourt, Bedford, Appomattox, Campbell, Roanoke, Prince Edward, Montgomery, Salem, Charlotte, Franklin, Pittsylvania, Floyd, Halifax, Brunswick, Carroll, Mecklenburg, Patrick, Henry; and, the cities of Lynchburg, Bedford, Roanoke, Martinsville, and Danville. Five (5) impoundments are located in the Roanoke River—Smith Mountain Lake, Philpott Reservoir, John H. Kerr Reservoir, Lake Gaston and Roanoke Rapids Lake. Smith Mountain and Philpott Reservoir, located above, and Roanoke Rapids Lake, located below Lake Country, are outside the planning area.

Chowan River Basin

The Meherrin River has its headwaters in the Piedmont of Lunenburg County and flows southeast into the coastal plain of North Carolina, joining the Chowan River in North Carolina, approximately 12 miles south of the state line. The Meherrin River forms the boundary line between Mecklenburg and Lunenburg counties and flows for a distance of 37 miles through the center of Brunswick. The Brunswick County portion of the Meherrin was designated a Virginia Scenic River by the Virginia General Assembly in 2006, which has no impact on its status as an auxiliary water source for the Town of Lawrenceville. Additional drainage basin information is presented in the Existing Water Sources Section on page 10.

The **Chowan River Basin** is approximately 130 miles long and drains about 4,900 square miles of land in Virginia and North Carolina. Approximately 76 percent of the watershed is located in Virginia. Thirteen Virginia counties or portions thereof are in the Chowan River Basin: Brunswick, Mecklenburg, Charlotte, Lunenburg, Greensville, Southampton, Nottoway, Dinwiddie, Sussex, Prince George, Prince Edward, Surry and Isle of Wight. Also located in this basin are the cities of Virginia Beach, Chesapeake, Franklin, Emporia, Suffolk, and Petersburg. The Chowan River is located entirely in North Carolina, formed by the confluence of Virginia's Blackwater and Nottoway rivers at the state line. Like the Roanoke River, the Chowan is a major contributor of fresh water to the Albemarle Sound in North Carolina.

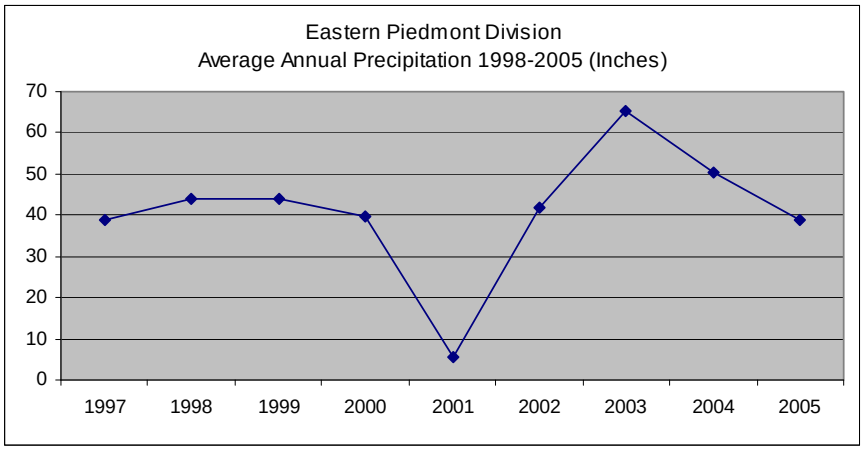
CLIMATE AND RAINFALL

This area of Southside Virginia has a fairly moderate climate. The average annual temperature is 57 degrees Fahrenheit, with summer and winter temperature averages of 76.5 degrees Fahrenheit and 42 degrees Fahrenheit, respectively. The average annual precipitation ranges from 45 to 55 inches in the Southern Piedmont. Prevailing winds are south to southwest. The growing season lasts about 205 to 235 days.

The following table provides a summary of precipitation data from the National Climatic Data Center. See also Appendix C, Table 90A for the precipitation data from the weather monitoring stations that are located in the Lake Country Planning Area.

Annual	Precipitation	Precipitation	Precipitation	Precipitation	Precipitation	Precipitation	*Departure*
	Camp Pickett	Lawrenceville	Chase City	Clarksville	Kerr Dam	Eastern Piedmont Division	
1995	43.62	40.48			39.51	44.78	*1.5*
1996	60.7	55.91	49.62	45.76	46.97	54.09	*10.82*
1997	37.74	45.97	42.6	34.55	38.47	38.74	*-4.53*
1998	50.52	49.68	44.06	38.55	45.23	44.02	*0.75*
1999	48.59	62.0	52.08	38.99	46.68	43.89	*0.62*
2000	44.1	39.4	34.16	41.15	37.89	39.56	*-3.71*
2001	9.2	8.45	6.63	44.32	7.39	5.73	*2.1*
2002	42.16	44.97	57.43	4.3	41.27	42.01	*-1.26*
2003	73.1		61.7		61.49	65.2	*21.93*
2004	54.55		45.65		44.55	50.55	*7.28*
2005						39.04	*-5.96*

Drought Years



PROTECTED SPECIES & HABITATS OF CONCERN— 9 VAC 25-780—90 (3 b-i)

A listing of species in need of protection within the Southern Piedmont is included in Appendix C, Table 90-B1. The conservation need is tiered. Several species that are listed as Tier I, the greatest need, are found within the Lake Country Planning Area. These include the Roanoke logperch (Fish), Bachman's sparrow (Bird), Loggerhead shrike (Bird) and the James spinymussel (Aquatic Mollusks). The loggerhead shrike habitat includes open fields with scattered shrubs, small trees and/or hedges; the Bachman's sparrow primarily uses open-canopy pine woods/savannah and may also be found in oak scrub and recent clearcuts. Neither of these species is generally associated with streams or wetlands.

The Roanoke logperch is a Federal and State endangered species found only in the Roanoke and Nottoway river systems of Virginia. It feeds on immature benthic invertebrates and exhibits a feeding behavior of flipping rocks to expose prey items. The Roanoke logperch spawns in spring and early summer. In the Roanoke River, this species occupies warm, moderate to large streams and small rivers, however at some lifestages the fish prefers runs, pools and backwaters. Historically found in the James River, a population of the James spinymussel was recently discovered in the Dan River, which is a tributary of the Roanoke but outside the planning area. This mollusk prefers unpolluted, well-oxygenated streams. Threats to these aquatic species include channelization, siltation, chemical spills, and impoundment. (Source: Virginia's Comprehensive Wildlife Conservation Strategy, Chapter 5, DGIF)

ANADROMOUS FISH, TROUT, AND OTHER SIGNIFICANT FISHERIES— 9 VAC 25-780—90 (3 b-ii)

Anadromous fish are those that live in the sea primarily but breed in fresh water. Anadromous fish that are found in the waters of the Roanoke River Basin include the Black Bass and the Striped Bass. See Appendix C, Table 90-B2. The flow from Kerr Reservoir and the downstream lakes is carefully managed so that the fisheries in the river are not negatively impacted. According to the DGIF Trout Fishing Guide website [http://www.dgif.virginia.gov/fishing/trout/], no trout waters occur within the planning area. However, the Meherrin River, Nottoway River, Brunswick Lake, Great Creek Watershed Lake, Lake Gaston, Lake Gordon, and Kerr Reservoir provide significant fisheries and a variety of recreational opportunities for citizens and visitors to the Lake Country region [http://www.dgif.virginia.gov/fishing/waterbodies/?type=1].

RIVER SEGMENTS OF RECREATIONAL SIGNIFICANCE INCLUDING STATE SCENIC RIVER STATUS—(3 b-iii)

On June 25, 2006, Governor Tim M. Kaine signed legislation that added the 37-mile section of the Meherrin River flowing through Brunswick County to the Virginia Scenic River System. This designation official recognizes the Meherrin River's natural, scenic, historic, and recreational value. Additionally the Staunton River through Halifax and Charlotte counties is a designated Virginia Scenic River. The Staunton River is outside the water supply planning area but is located upstream and flows into the John H. Kerr Reservoir, as it is part of the Roanoke River. See Appendix C, Table 90-B3

SITES OF ARCHAEOLOGICAL AND HISTORICAL SIGNIFICANCE— 9 VAC 25-780—90 (3 b-iv)

Archaeological and historical sites are numerous in Mecklenburg and Brunswick Counties. There

are 11 sites in Brunswick County listed on the Virginia Landmarks Register (VLR) and the National Register of Historic Places (NRHP). In Mecklenburg 32 sites are listed on the VLR and 22 listed on the NRHP, plus 10 nominations pending National Register listing. Those that are listed on the National Register of Historic Places and the Virginia Landmarks Register are found in Appendix C, Table 90-B4. A few are located in the vicinity of the Meherrin River (Fort Christanna) and Kerr Lake (Archaeological Sites at Kerr Reservoir Area, Prestwould, Clarksville,). They do not affect the in stream flow or use.

UNIQUE GEOLOGY & NATURAL COMMUNITIES— 9 VAC 25-780—90 (3 b-v)

A unique geological feature exits in Brunswick County near the banks of Lake Gaston in Gasburg but is not within the lake flood elevation. The approximate 20-acre Gasburg Granite Flatrocks Preserve is owned and managed by the Nature Conservancy [http://www.nature.org/wherewework/northamerica/states/virginia/preserves/art15031.html]. This community of Southern Piedmont Granite Flatrock consists of smooth, exfoliated outcrops of massive granite, which is unusual in Virginia. Soil accumulates in the outcrop depressions and provides habitat for three globally rare plant species. Two other natural communities are designated as needing protection by the Department of Conservation and Recreation—Piedmont Hardpan Forests and Piedmont savanna—Loblolly pine. There is no indication that these exist in areas affected by the water sources. See Appendix C, Table 90B5.

WETLANDS— 9 VAC 25-780—90 (3 b-vi)

The U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency define wetlands as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Typically criteria used to delineate jurisdictional wetlands include evidence of hydric soils, hydrophytic vegetation and hydrology. Protection of wetlands is important for maintaining water quality as these soils help filter impurities and allow for recharge of groundwater. Section 404 of the Clean Water Act is the primary vehicle for Federal regulation of some of the activities that occur in wetlands. The following table indicates the acreage of non-tidal wetlands, deep-water acreage, linear wetlands, and linear deep-water habitat for Mecklenburg and Brunswick Counties. A map of the Non-Tidal Wetlands Inventory for Brunswick and Mecklenburg Counties is provided in Appendix E, Map 2.

	Brunswick		**Mecklenburg**	
Land Acres	362,353		399,590	
Wetland Acres*	13,452	(3.6%)	16,390	(3.6%)
Deep Water Habitat (acres)	2,047	(.5%)	35,402	(7.7%)
Total Acres	**364,400**		**434,992**	
Linear Wetlands (miles)	48	miles	69	miles
Linear Deep Water Habitat	40	miles	103	miles

*Included in Land Acres

*Source: *The Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, Virginia Non-Tidal Wetland Inventory, 1990.*

Riparian forest buffers provide critical wildlife habitat and improve water quality. Studies have shown that riparian forests as narrow as 50 feet in width can completely remove excess nitrogen as it moves from farm fields through the forests to the adjacent stream. These forested areas also filter sediments and phosphorus, thereby acting as buffers to nutrient inputs to streams. Nutrient retention by a 100-foot forest adjacent to agricultural land is estimated at 80% for phosphorus and 89% for nitrogen. The retention varies depending on width of forest, slope, and other factors.
Tree roots help stabilize streambanks by holding soil in place. Riparian forests also lower flow velocities, causing sediment to settle out. Based on the Virginia Department of Forestry's 2003 assessment, many of the streams in Brunswick and Mecklenburg have 50 and 100 foot forested buffers on both sides of the stream. Preservation of the buffer zones is encouraged through state regulation of land disturbance and the enforcement of the Clean Water Act.

The U.S. Army Corps of Engineers owns and controls most of the property surrounding Kerr Reservoir. The ACOE retains ownership approximately 100 feet from the mean water line as flowage easement; the Kerr reservoir easements total approximately 8,000 acres, which includes the Upper Butcher Creek Public Access Area (see Conservation Areas Map in Appendix D). As a result the land bordering the water source has experienced little development. Conversely Lake Gaston, owned by Dominion Power and operated for hydroelectric power and recreation, has experienced significant residential and associated commercial growth. Most of the subdivisions in the planning region are utilizing deep wells, but with individual septic systems.

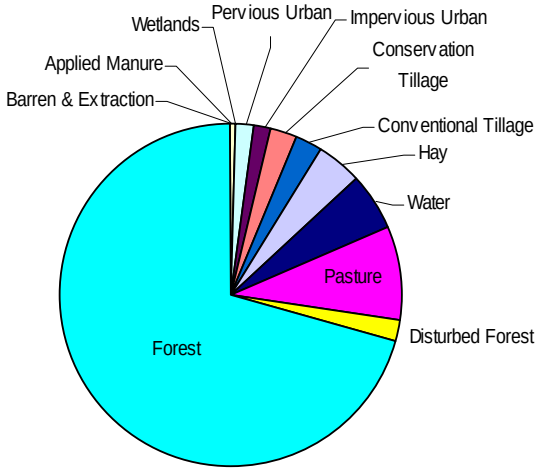
Conservation lands in Brunswick County include Great Creek Watershed Lake, Lake Brunswick, a public fishing lake owned by VDGIF, and the Gasburg Granite Flatrocks Preserve owned by The Nature Conservancy. Currently, there are no conservation easements on private property within Brunswick County. According to the DCR Land Conservation Data Explorer (http://www.vaconservedlands.org/gis.aspx), there are four conservation easements totaling approximately 1,490 acres within Mecklenburg County. In addition to the ACOE property surrounding Kerr Reservoir, additional conservation lands in Mecklenburg include: Occoneechee State Park, Lake Gordon (a public a public fishing lake owned by VDGIF), and on Lake Gaston there are four VDGIF sites and boat ramps and the Dick Cross Wildlife Management Area.
Riparian buffers are important for overall stream health, filtering nutrients, sediments, and other pollutants before they can enter a waterway and water supplies. Conservation areas are also important to water quality.

A map of Conservation Areas and Riparian Buffers for Mecklenburg and Brunswick Counties is provided in Appendix E, Map 3.

LAND USE— ***9 VAC 25-780—90 (3 b-viii)***

Lake Country, as are most areas of Southside Virginia, is predominantly rural. Agriculture and forestry dominate land use. The towns are urban focal points within the District and serve as major shopping and employment centers. Brunswick and Mecklenburg counties encompass a total land area of 1,249 square miles or 799,360 acres. According to the 2002 Census of Agriculture there were 247,195 acres of land in farms—reflecting a reduction of 1.3 percent since 1997. The incorporated towns account for less than two (2) percent or 9,722 acres (15 sq. miles) of the land area. The industrial and commercial land uses are primarily located in or around these "urbanized" areas. Due to the rural nature of the Lake Country planning area, impervious surfaces are limited to parking lots, shopping centers, and roadways and account for less than 5% of the Lake Country total land area. The lakes and expansive forested lands have provided extensive recreational property and uses and account for more than 75% of the land cover according to the Virginia Non Point Source (NPS) Assessment.

Land Use maps for Mecklenburg and Brunswick Counties are provided in Appendix E, Maps 4 and 5.



IMPAIRED STREAMS, POINT SOURCE DISCHARGES, AND OTHER THREATS TO WATER SOURCES—(3 b-ix, x, xi)

A number of factors can threaten the water supply. As can be expected, periods of droughts can result in increased numbers of failed or dry wells. Dug or shallow wells are particularly susceptible. Groundwater contamination from leaking underground tanks and/or failing septic systems are typical threats. A list of impaired waters within Brunswick and Mecklenburg is found in Appendix A, Table 90-B9 and shown on Appendix E, Map 6. Impairments include Fecal Coliform, Escherichia coli (E coli), Dissolved Oxygen, pH, PCB in fish tissue. Sources noted include livestock, domestic waste, sediments; and, therefore could be caused by farming operations, chemicals from field runoff, sewer plant discharge and /or failing septic systems. There are 27 Point Source Discharges in the planning area. These are listed in Appendix A, Table 90-B10 and are located on Appendix E Map 6.

In terms of quantity of water, fast growing metropolitan areas are competing for Lake Country's local water resources. Jurisdictions outside of the local drainage basin including neighboring North Carolina and Tidewater Virginia are interested in the ample supply in the Roanoke River Basin. Raleigh's main water sources (Fall's Lake & Jordan Lake) were almost depleted in the most recent drought (2007-08).

4—ASSESSING FUTURE WATER DEMANDS, NEEDS, & ALTERNATIVES

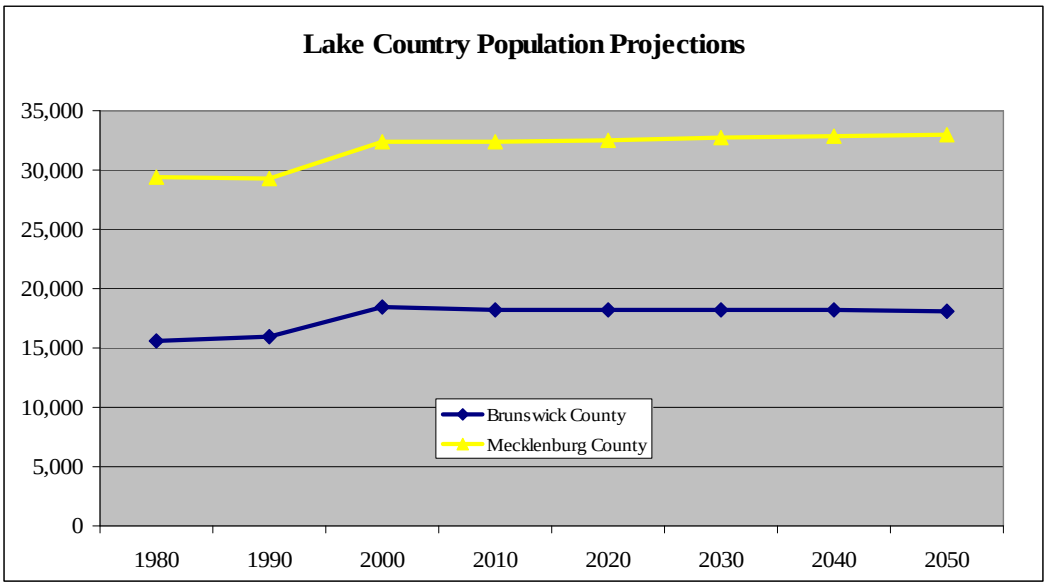
A. Projected Water Demand *9 VAC 25-780-100*

PROJECTIONS METHODOLOGY *9 VAC 25-780—100 (4 a)*

To estimate Lake Country's future demand on its water supply a per capita model was used. This simple method, which is recognized by the AWWA, was deemed appropriate since there are no immediate water needs and minimal population growth is anticipated. In this model the current per capita water use is multiplied by the projected population to estimate future need. The 2000 Census of Population and Virginia Employment Commission (VEC) population projections were utilized. The VEC population projections estimate the growth to 2030. The existing population projections and Census were used to generate a trend graph to extrapolate projections to 2040. A negative .03 percent annual average population change was calculated for Brunswick County; while a (somewhat) positive .04 annual change was applied to Mecklenburg County. This equates to "no anticipated growth" in the Planning Area based on the current economic climate; therefore projections were only extended to 2040. Detailed population projections for Brunswick and Mecklenburg and their towns is provided in Appendix D, Table 100 A

***POPULATION PROJECTIONS*—VIRGINIA EMPLOYMENT COMMISSION**

		Census		VEC Projections			Trend Line projections
	Annual Ave. % Change 2000-40	2000	2005 Estimate	2010	2020	2030	2040
Brunswick Co.	**-0.03%**	18,419	18,222	18,263	18,258	18,258	18,200
Mecklenburg Co.	**0.04%**	32,380	32,214	32,369	32,511	32,755	32,821
Lake Country		**50,799**	**50,436**	**50,632**	**50,769**	**51,013**	**50,998**



DECADAL ESTIMATE WATER DEMAND FOR LAKE COUNTRY REGION 9 VAC 25-780—90 (4b,c)

Lake Country population changes, projections, and projected water demand are provided in Appendix D, Tables 100-D1—D5, and water demand projections are summarized in the table below. While little to no population growth is anticipated, some industrial growth has been added in 2020, based on the postponed development of Osage, which will need 1.2 MGD. The overall demand projections for Lake Country Planning Area users indicate a current use of approximately 9.8 MGD that is anticipated increase to 11.2 MGD by 2040. Users from outside the area have permits for 80 MGD as well; since this is considered a maximum withdrawal this amount is projected as constant across the decades.

	REGIONAL WATER DEMAND (MGD)				
	Existing	Projected			
	2005	2010	2020	2030	2040
Community Water Systems					
Lawrenceville Service Area	0.768	0.769	0.775	0.781	0.787
Chase City Service Area	0.189	0.189	0.191	0.192	0.194
Clarksville Water Service Area	0.251	0.251	0.253	0.255	0.257
Roanoke River Service Area	1.219	1.221	1.230	1.240	1.250
Future Industrial User			1.200	1.200	1.200
Private CWS	0.200	0.200	0.202	0.204	0.205
Self-Supplied Users					
Non-Agricultural in CWS	0.12	0.12	0.12	0.12	0.12
Agricultural (1 farm using GW) outside CWS	0.06	0.06	0.06	0.06	0.06
Individual Wells					
Brunswick County Residences & Businesses	1.014	1.015	1.023	1.031	1.040
Mecklenburg County Residences & Businesses	1.603	1.605	1.618	1.631	1.644
SUBTOTAL REGIONAL DEMAND	**5.424**	**5.430**	**6.672**	**6.714**	**6.757**
Self-Supplied Users--(non-Consumptive)					
Non-Agricultural (2)	4.45	4.45	4.45	4.45	4.45
TOTAL REGIONAL DEMAND	**9.874**	**9.880**	**11.122**	**11.164**	**11.207**
CWS Outside the Planning Area (Permitted Capacity)	80	80	80	80	80
TOTAL RESOURCE DEMAND	**89.874**	**89.880**	**91.122**	**91.164**	**91.207**

WATER USE PROJECTIONS FOR COMMUNITY WATER SYSTEMS 9 VAC 25-780—90 (4 d)

Population projections, annual average and peak monthly demand projections by community water systems are listed in Appendix D, Tables 100 D1-D5. A map of the service areas of each community water system may be found in Appendix E, Map 1.

For the purpose of demand projections, the per capita use for each Community Water System (CWS) was determined and multiplied by the projected population for each decade. To calculate the per capita use factor, the amount of water used in gallon per day was divided by the population of each community water service area, which generally has a greater population than its principal town(s). A total population of 19,645 (2005) are served by 27 community water systems. In 2005 the annual average total usage by CWS was 2.6 MGD and is only expected to increase to 2.7 MGD by 2040 based on an annual average growth factor of .01%.

To determine monthly peak use demand a peaking factor was multiplied by the projected water use. For most community systems meter readings are done monthly, making inclusion of meaningful peak day usage difficult. The systems using surface water (and operating a treatment facility) have provided peak day readings. A peaking factor was determined by dividing the peak day withdrawal by the average day withdrawal. The resulting factor was multiplied by "Estimated Annual Average Water Demand." If peak day use was less that the industry standard of 1.5 or was unavailable, the peak day use was estimated as being 1.5 times the annual average use. If the system "peaking factor" was greater than the industry average, larger number was used to err on the side of caution. The peak day demand estimates for all Lake Country Community Water Systems was 4.1 MGD in 2005 and was projected to increase to 4.2 MGD by 2040.

Lake Country Disaggregated Water Use Demand Projections for CWS						
System/Land Use	**Year**	**2005***	**2010**	**2020**	**2030**	**2040**
CWS--Residential		0.855	0.855	0.861	0.868	0.875
CWS—Commercial/ Lt. Industrial		0.584	0.584	0.589	0.594	0.598
CWS--Industrial		0.178	0.178	0.179	0.181	0.182
CWS—Schools/ Institutional		0.051	0.051	0.051	0.052	0.052
CWS--Prisons		0.435	0.435	0.439	0.443	0.446
CWS--Sales to other Systems		0.051	0.051	0.051	0.052	0.052
CWS--Unaccounted		0.484	0.485	0.488	0.493	0.496
Total CWS Projected Water Demand (MGD)		**2.637**	**2.639**	**2.658**	**2.683**	**2.701**

*Current Use

WATER USE DEMAND BY CATEGORIES OF USE FOR COMMUNITY WATER SYSTEMS (4 d—iv, v)

To apply demand by disaggregated water use in the region's community service areas, the amounts by category of use as provided by the local suppliers were converted to percentages of use and applied to the projected water demand. As summarized in the table above water demand for Lake Country Community Water Systems is projected to be 2.64 MGD in 2010; 2.66 MGD in 2020; and, 2.68 MGD in 2030 and 2.7 in 2040. See also Appendix D, Table 100D—iv and v. Water demand projections by disaggregated use for each community water system are shown in Appendix D, Tables D1—D5. All "Non-Municipal" Community Water Systems were residential and are not listed individually. The demand projections for these private systems are shown in Appendix D, Table 100 D5.

WATER USE PROJECTIONS FOR SELF-SUPPLIED NON-AGRICULTURAL USERS 100 (4 e)

Per DEQ's water withdrawal reporting database, there were three Self-Supplied Non-Agricultural users located in Lake Country that withdraw greater than 300,000 gallons of water per month. All three were non-consumptive users. One "user" is a hydropower plant (John H. Kerr Hydroelectric Power Plant) and since this water (5,622 MGD) does not leave the stream its use has not been included in demand calculations. Although the other two non agricultural facilities—Mecklenburg Cogen and Vulcan Quarry—are also non-consumptive, this water use was included in the demand table but is assumed to remain constant. Most (typically 90 to 95%) of the water used for power production and the quarry residual groundwater is returned to the source. For current and permitted withdrawal amounts see Appendix A, Table 70E.

WATER USE PROJECTIONS FOR SELF-SUPPLIED AGRICULTURAL USERS 100 (4 f)

There was only one Agricultural Self Supplied User located outside the service areas of the community water systems in Lake Country reporting withdrawal of more than 300,000 gallons per month in 2005. A check of withdrawals amounts in 2009 indicates this hog farm operation has added a well resulting in increased withdrawal; therefore the projection reflects this amount of .06 MGD. Consumptive use by self-supplied users for agriculture is expected to remain constant and all agricultural use is not anticipated to increase more than 1% by 2050. See Appendix D, Table 100A-B.

WATER USE PROJECTIONS FOR SELF-SUPPLIED SMALL USERS (< 300K GALLONS/MO) 100 (4 g)

Small users are determined by a threshold of less than 300,000 gallons per month. Typically this includes those utilizing individual wells. To calculate demand, a per capita usage of 85 gallons per person per day was multiplied by the projected population of those not living in a water service area. The population served by a Community Water System was subtracted from the Census estimates for 2005 to establish the population utilizing individual wells. The per capita use for individual well users in Brunswick and Mecklenburg was based on withdrawals by other groundwater residential well systems in the counties. Thus assuming 85 gallons per person per day, usage by small users was estimated to be 2.6 MGD in 2005 and projected to increase to 2.7 by 2040. See Appendix D, Table 100A-B.

As summarized in the following table, water demand across all water use sectors in the Lake Country Planning Area is projected to be 9.9 MGD in 2010; 11.1 MGD in 2020; and, 11.2 MGD in 2030 and 2040. Adding the Outside Permitted Users the demand increases to 89.9 in 2010; 91.1 in 2020; and, 91.2 in 2030 and 2040.

Lake Country Demand Projections (MGD)					
Year	**2005***	**2010**	**2020**	**2030**	**2040**
All CWS (MGD)	**2.6**	**2.6**	**3.9**	**3.9**	**3.9**
Non-Ag SSU demand	4.6	4.6	4.6	4.6	4.6
Ag SSU demand	0.1	0.1	0.1	0.1	0.1
Small, SSU demand	**2.6**	**2.6**	**2.6**	**2.7**	**2.7**
TOTAL REGIONAL DEMAND	**9.9**	**9.9**	**11.1**	**11.2**	**11.2**
CWS Outside the Planning Area (Permitted Capacity)	80	80	80	80	80
TOTAL RESOURCE DEMAND	**89.9**	**89.9**	**91.1**	**91.2**	**91.2**

*Current Use

CUMULATIVE DEMAND, USE CONFLICT, IN-STREAM FLOW INFORMATION ***100 (4 h)***

The State Water Resources Plan is not complete and therefore cumulative demand, use conflict, or in-stream flow information for the Lake Country planning area is not available at this time.

FUTURE NEEDS ***100 (4 i)***

To address positive changes that may occur in an otherwise dire economic and consequently low growth environment, the projections have assumed some demand increases. A future industrial user mentioned in the Water Resources section (page 16) that was to use 1.2 MGD and be a part of the RRSA, has postponed location plans; however this usage was included in decades 2020-2040. To build in the potential for increased domestic use by individual well users, a higher groundwater use estimate of 85 gallons per day per person was used rather than the national average of 75 gallons. This figure was derived from groundwater systems in the planning area. These projections assumed the region's conservation practices that are currently in practice would continue and not change substantially until the next plan update. Other community systems outside the planning area are permitted to withdraw up to 80 MGD from the Roanoke River system. This maximum withdrawal has been noted as constant across the planning period.

An assessment of Community Water Systems shows that the region's resources—safe yield and permitted capacities—are more than adequate to meet its projected water demand needs.

Lake Country Demands by CWS	**2040 Projected Peak Demand (MGD)**	**Safe Yield (MGD)**
Lawrenceville: Great Creek/Meherrin	1.2	3.85
Chase City—Groundwater	0.3	Unknown
Clarksville Water System	0.5	352 [1]
Roanoke River Service Authority	1.9	352 [1]
Non-Municipal CWS—Groundwater	0.3	Unknown
Total	**4.2**	

[1]Safe yield from 1982 study and low flow of 1980-81

DEMAND, SAFE YIELD CAPACITY DISCUSSION BY SYSTEM

Chase City & Other Groundwater Systems

Chase City's groundwater system total permitted capacity is .884 MGD according to VDH records. Demand projections indicate .4 MGD may be needed by 2050. While this permitted capacity seems sufficient, it is generally felt that the wells were not intended to pump concurrently which would be required to achieve the maximum capacity. Therefore the water supply for Chase City appears to be adequate for the projected growth however, if any (other) large water users were to locate the town may wish to connect to the RRSA. The RRSA will be constructing a water line to near the south side of the town limits to serve an industry that required 1.2 MGD, which the town's system did not have the capacity to provide. The Roanoke River Service Authority system has the capacity to meet its projected supply demand plus add on the town of Chase City (.3 MGD) if it were needed.

Roanoke River Basin/Kerr Reservoir Systems

As can be seen from the table on the following page, peak demand for the Kerr reservoir system in 2040 is projected to be 6.0 MGD. If Chase City were added to the RRSA as in the above scenario, the demand would be almost 7 MGD. Adding the contracted withdrawal and storage amounts brings the demand total to 96 MGD, which is well below the Safe Yield of 352 MGD for the Kerr Reservoir system. This yield was calculated based on the lowest flow during the 1980-81 drought.

The Phase I Study—Roanoke River Basin Water Resource Development Plan prepared by C.E. Maguire, Inc., for the City of Virginia Beach in 1982 states that "the yield of the three reservoir system (Kerr-Gaston-Roanoke Rapids) is estimated to be at least 352 MGD is more than adequate to meet the projected public water supply demands of Virginia Beach (48 MGD annual average) as well as the lower Roanoke River Basin (48.2 MGD annual average) fifty year planning period." This study is dated now; however it gives an idea of the projected demand to 2030 for the lower Roanoke River and for Virginia Beach. Furthermore the Maguire Group document cited a 1977 study entitled, Water Resources Evaluation and Planning (South Shore), which contained yield calculations of 500 MGD for the Roanoke River Basin. Therefore while it is difficult to anticipate the demand for entities outside of the planning area that may wish to tap on to the Roanoke River supply, based on the yield estimates and projected local demand of less than 3.0 MGD (including Chase City) and there appears to be sufficient flow and volume to meet the public water supply needs of the Lake Country Region.

Lawrenceville System

Demand on the Lawrenceville system and the Great Creek/Meherrin River in Brunswick are projected to reach 1.2 MGD by 2040. The safe yield of the Creek is an ample 3.85 MGD. The Meherrin River adds 2.4 MGD and the Great Creek Reservoir adds storage capacity. Therefore the existing water supply for the Lawrenceville system is adequate and has room to grow due to its auxiliary resources.

A summary of existing use, contract obligations and other limits, and projected peak demand for the Lake Country systems may be found below.

Lake Country Water Systems Use & Capacity Summary

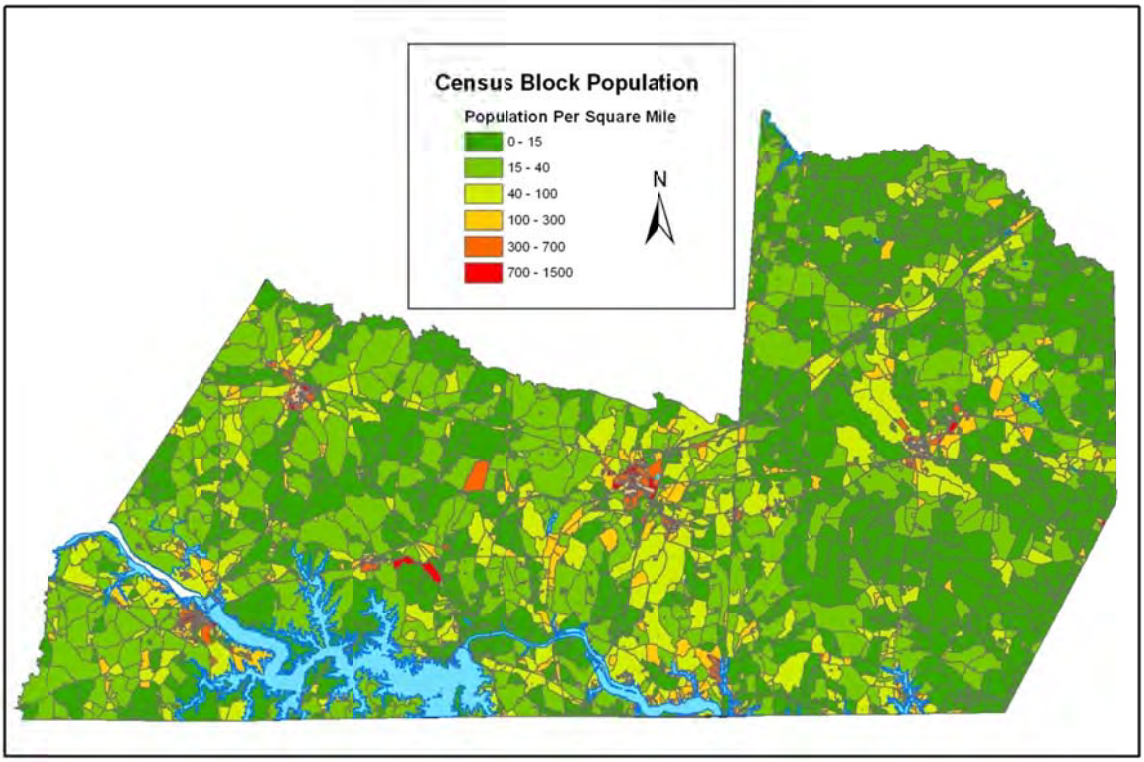
Water System: Name or Type	**Current Use** Ave. annual withdrawals (MGD) Source DEQ 2004	VDH Permit: Water Treatment Plant Capacity (MGD)	Contract Withdrawals or Storage Limits	Projected Peak Demand 2040 MGD
Roanoke River Basin				
Roanoke River Service Authority	1.22	4.18	7.0 MGD	1.88
Future Industrial User (Osage)				1.20 [1]
Town of Clarksville	.25	1.0	Design limit only: 1 MGD or 4 GPM/s.f.	.55
SSUs:. Cogen	2.41	Non-consumptive	2.3 MGD	2.4
Prison	Unused	N.A.	.06	0
Reservoir Withdrawal w/in LC	**3.9 ***	**5.2**	**10.4**	**6.0**
Users from outside LC				
City of VA Beach	60	N.A.	60	60
KLRWP	6.5	10 [2]	20 [2]	20 [2]
Reservoir Withdrawal For water supply	**70.4 ***		**90.4**	**86.0**
Chowan River Basin				
Town of Lawrenceville (includes Alberta)	.73	2.0	2.0	1.2
Stream Withdrawal	**.73**	**2.0**	**2.0**	**1.2**
Groundwater—Lake Country				
Town of Chase City	.185	N.A.	.883	.29
Total Other CWS (24)	.19	N.A.	1.06	.31
SSUs	2.06	N.A. Non-consumptive		2.06
Individual Wells	2.62	N.A.	None	2.7
Groundwater Withdrawal	**5.1**		**1.9**	**5.4**

No user in Lake Country purchases or utilizes water from outside the Planning Area.
Detailed information regarding the existing water sources for the Lake Country Planning Area may be found in **Appendix A**.
N.A. Not Applicable
[1]Includes Osage 1.2 MGD
[2]Source: KLRWP; 20 MGD applied for
* John H. Kerr Hydroelectric power plant not included in total—separate allocation in reservoir & non-consumptive. [5,621.7 MGD]

Based on these current population projections and the existing contractual arrangements described in the projected water demand and existing water source sections, the current water supply is ample to provide for the Lake Country water needs for the next 40 years. Since the existing sources are adequate to meet the projected water demands during this planning period, an alternatives analysis is not required (per 9 VAC 25-780-130.B) and therefore not included in this iteration of the plan.

8/1/2011 NOTE: The 2010 Census indicates the 2010 projections for Mecklenburg and Brunswick counties were on target as shown by the table and map below. The map provides the 2010 population distribution.

County	2010 VEC Population Projection	2010 Census of Population (available 3/2011)
Brunswick	*18,263*	*17,434*
Mecklenburg	*32,369*	*32,727*



Source 2010 US Census Bureau (2010)

6—WATER DEMAND MANAGEMENT & DROUGHT RESPONSE

A. Water Demand Management & Water Conservation Practices *9 VAC 25-780-110*

Water Conservation Practices (AWWA) include:

- *Methods to promote reasonable and efficient use and reuse of available supplies*
- *Those practices, techniques, and technologies that will reduce the consumption of water, reduce loss or waste of water, improve the efficiency of the use of water or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.*

AWWA supported water conservation principles and practices:

1. Efficient utilization of sources of supply;
2. Appropriate facility rehabilitation or replacement;
3. Leak detection and repair;
4. Accurate monitoring of consumption and billing based on metered usage;
5. Full cost pricing;
6. Establishment of water-use-efficiency standards for new plumbing fixtures and appliances and the encouragement of conversion of existing high-water-use plumbing fixtures to more efficient designs;
7. Encouragement of the use of efficient irrigation systems and landscape materials;
8. Development and use of educational materials on water conservation;
9. Public information programs promoting efficient practices and water conservation by all customers;
10. Integrated resource planning;
11. Water reuse for appropriate uses; and
12. Continued research on efficient water use practices.

EXISTING LOCAL WATER CONSERVATION EFFORTS ***110 a-i***

A review of the public water systems within the Lake Country Region found the following programs and practices in place.

All the localities within the planning area have adopted the Uniform Statewide Building Code.

Roanoke River Service Authority (RRSA) is considering installation of more accurate water meters at main entry points to customers (towns) to better account for actual amount of water use. However if the purchase is not approved, the meters can be recalibrated to find percent of efficiency and then that percentage could be calculated into the meter reading. They would know that 10 gallons left plant and meter at entry point read only 8 gallons then meter readings would be

adjusted up 20%. More accurate meter reading and resulting higher water bills might encourage more efficient (conservative) water use.

River Ridge is a campground and subdivision on Lake Gaston in Bracey. The facility includes a nine-hole golf course. The RRSA provides the water to the subdivision while River Ridge owns its own water lines and operates a small package plant for the wastewater. The golf course is integrated into the wastewater system. The treated wastewater makes up the ponds or water features and is used to irrigate the course.

Chase City has active leak detection and maintenance program. The Town routinely inspects for leaks on their lines. The Town has an ordinance provision to encourage residents to report leaks and not waste water—leaks must be corrected.

Brodnax has an active leak detection program. Meters equipped with leak detector, which will turn if leak is on resident or customer's side. Town encourages residents to check more frequently.

South Hill has an ordinance provision requiring water conservation in the case of emergency. The town uses AMR meters with wands to read.

La Crosse indicated that most of the town's meters have leak detectors; although some need replacing. The town does not have an Ordinance requirement for water restrictions during water emergencies.

Clarksville has replaced all meters with new AMR (Automatic Meter Reading) wand meters. The system has leak detection—if water use is greater than previous reading, program sends up a red flag and the town goes and checks the meter so make sure it is a true leak or a sensor problem. The system has reduced re-reads from 100 re-reads to about 20. Meters have backflow prevention. The town does not have an Ordinance requirement for water restrictions for water emergencies. Rather the Town asked residents for voluntary conservation during the last drought.

Lawrenceville has AMR meters and mobile leak detection equipment, which can be used to listen to lines to detect for leakage and can be used on either side—town's or customer's to determine where the leak is.
The town's ordinance authorizes charges in the event of line break on the customer's side. [Ord. No. 01-02, art. III, S 7, 7-10-2001].
Additionally Lawrenceville's ordinance contains a provision authorizing the mayor or town manager to restriction certain water uses in the event of a declared water emergency. [Ord. No. 01-02, art. VII, S 1, 7-10-2001]

Alberta has leak detectors on meters. The town does not have anything regarding conservation or water demand in its ordinance. Utilizing a grant from VDH, Timmons Group designed a wastewater reuse system for the town. They found they could retreat their wastewater to use to sanitize the tanks, saving 5,000 to 8,000 gallons of drinking water. Formerly 6,000 to 10,000 gallons of potable water, which was purchased from Lawrenceville, was used to disinfect the wastewater tanks.

Boydton does not have anything regarding conservation or water demand in its ordinance but generally sends out letters about conserving water during dry periods. The mayor felt that water rates encourage conservation. The town meters have leak detectors. Also there are back-flow preventers on the yoke of each meter. Although there are leak detectors on the meters, a leak at a vacant former laundromat was detected after RRSA noticed a spike in town use. The leak was on the customer side, which is usually not found with that type of meter particularly in unoccupied facilities.

LOCAL EXISTING WATER DEMAND MANAGEMENT EFFORTS

	System	**Conservation efforts**
RRSA	RRSA	Improve water metering
River Ridge	RRSA	Wastewater reuse for golf course irrigation and ponds
Brodnax	RRSA	Leak detection
South Hill	RRSA	Ordinance requires conservation during emergencies; Use wands for meter readings
La Crosse	RRSA	Most meters have leak detection; some need replacement
Boydton	RRSA	Meters equipped with leak detectors Town sends letters regarding conservation during dry periods.
Clarksville	Clarksville	Meters replaced; use wand Leak detection Voluntary conservation during emergency
Chase City	Chase City	Leak detection: Ordinance provision to prevent residents from wasting water—leaks must be corrected. Leak detection & maintenance program—routinely inspect for leaks.
Lawrenceville	Lawrenceville	Leak detection: mobile leak detection equipment. Ordinance provision for line breaks Ordinance for water supply emergencies
Alberta	Lawrenceville	Meters equipped with leak detectors Wastewater reuse to sanitize wastewater tanks

B. Water Conservation Plan Recommendations

Water conservation means measures intended to improve the efficiency of water use and reduce waste. The intent of this definition is to focus on technical methods of reducing water demands through efficiency and reuse of available supply. This definition is not to be equated with a similar level of sacrifice by end users to comply with temporary emergency measures that are implemented during drought conditions or a water supply emergency. Efficient use of water not only benefits the natural environment but also offers economic perks to citizens, business owners, and even local governments—lower use equals lower bills.

The following are techniques that have been found to increase water savings in many localities and, if not currently, may be employed in Lake Country systems to produce added water conservation.

1. **Public Information & Education:**
    - Educate citizens of local public water supply issues and problems.
    - Raise public awareness of the region's water supply and the need to use water efficiently
    - Inform citizens of the benefits of water conservation that include:
        - Optimized use and efficiency of public water supplies.
        - Cost savings through conservation
        - Reduced risk of public water supply shortages
        - Protection of economic viability of the area
    - Educate citizens on water-conserving measures such as water efficient landscaping and low flow fixtures.

    Target groups for education:
    - Homeowners associations
    - Industrial and commercial establishments
    - Students and teachers—SOLs
    - Community service organizations (Lion's club, Rotarian)
    - Professionals and tradesmen, landscape contractors, irrigation contractors, nursery owners, builders and developers)
    - High water use industries and business (golf course, laundries, motels, hotels, car washes, and restaurants)

2. Water Conserving Plumbing Code

The Federal Energy Policy Act of 1992 requires that essentially all toilets, urinals, and faucets manufactured after January 1994 achieve maximum-use standards. Since March 1993, the Commonwealth of Virginia requires low-water-use plumbing fixtures in new construction. Brunswick and Mecklenburg counties and the Town of South Hill have adopted the Uniform Statewide Building Code as the local code. The remaining towns are governed by the County Building Code and enforcement.

The chart below provides current state code requirements for plumbing fixtures.

Current Plumbing Fixture-Flow Standards for Water Use Efficiency

Plumbing Fixture or Fixture Fitting	**Maximum Flow Rate or Quantity**
Water closet (toilet)	1.6 gallons per flushing cycle
Urinal	1.0 gallon per flushing cycle
Showerhead	2.5 gallons per minute at 80 psi
Lavatory (nonpublic)	2.2 gallons per minute at 60 psi
Lavatory (public)	0.5 gallon per minute at 80 psi
Lavatory (public metering self-closing)	0.25 gallons per metering cycle
Sink faucet	2.2 gallons per minute at 60 psi

Source: Virginia Uniform Statewide Building Code, 1990 Edition-Third Amendment, Effective March 1, 1993.

Owners of older home or businesses should be encouraged to replace any existing high water use fixtures with water-conserving fixtures.

3. Metering and Meter Repair and Replacement

Although individual water meters have often been considered impractical in homes with private wells or in multifamily buildings, the U.S. Environmental Protection Agency estimates that metering alone can reduce consumption by 20 to 40 percent[EPA]. In addition to raising consumer awareness of their water use, metering is also an important way to identify and localize water leaks.

All Lake Country Public Water Suppliers meter all customer accounts. Studies show that metering results in lower water use since customers become "sensitized" to the amount of water used through the effect it has on the water bill. Metering is also an aid to detecting leaks on both sides of the meter.

Maintenance programs for water meters are essential to ensure that an accurate measure of system integrity is obtained. Under-registration by meters may result in a significant percentage of unaccounted for water and loss of revenue. Some localities have meter replacement programs that require the replacement of residential meters every so many years. Fifteen (15) years is the average service life of residential meters. Improved meters

and routine calibration can help track water use (and loss) and lead to water and money savings.

4. **Water Conserving Landscaping**

Landscape irrigation use is largely dependent on weather conditions so large variations in peak demand occur between wet, normal, and dry years. Drought conditions typically increase total water use and peak water demands.

When landscaping employ water-wise landscape design and management techniques. Water-wise landscape design and management focuses on working with nature and environmental factors such as rainfall, to create an attractive, livable landscape, while using less water from the local supply.

- Plan and design to maximize water efficiency.
- Replace turf with landscaped beds, mulched areas, ground covers, or hard structures.
- Improve soil to ensure water holding capacity, absorption properties, and nutrients for plant growth.
- Use indigenous/native and other adapted low-water-use plants. A list of native species is available from the Virginia Cooperative Extension
- Efficient irrigation. Drip irrigation is considered to be the most efficient.

5. **Water Conserving Agricultural Practices**

For crop irrigation, optimal water efficiency means minimizing losses due to evaporation or runoff. An evaporation pan can be used to determine how much water is required to irrigate the land. Overhead irrigation, using center-pivot or lateral-moving sprinklers, gives a much more equal and controlled distribution pattern, but in extremely dry conditions much of the water may evaporate before it reaches the ground. Drip irrigation is the most expensive and least-used type, but offers the best results in delivering water to plant roots with minimal losses.

As changing irrigation systems can be a costly undertaking, conservation efforts often concentrate on maximizing the efficiency of the existing system. This may include chiseling compacted soils, creating furrow dikes to prevent runoff, and using soil moisture and rainfall sensors to optimize irrigation schedules. [Wikipedia & US EPA, "Clean Water Through Conservation", Practices for Agricultural Users]

6. **Leak Detection and Water Audits**

Good construction standards for public water systems and a water main replacement program for areas where leaks recur will result in fewer leaks. The Lake Country water providers currently carry on active leak detection programs. The systems are encouraged to continue aggressive leak detection and repair programs.

Water audits offer a way to identify and eliminate excessive use of public water. Public water purveyors routinely compare the metered amount of water they produce with the metered consumption of their customers to determine the amount and percentage of unaccounted for water in their system(s). The national average unaccounted for water loss is 10-15%. Regular audits may be used by purveyors to identify areas for ongoing leak detection and repair programs. Areas of recurring leaks should be targeted for line replacement and included in the capital improvement program.

7. **Wastewater Reuse and Recycling as a Conservation Measure**

In certain applications, (treated) wastewater reuse has been found to be a viable alternative water source. The U.S. Environmental Protection Agency (EPA) defines wastewater reuse as, "using wastewater or reclaimed water from one application for another application. The deliberate use of reclaimed water or wastewater must be in compliance with applicable uses for a beneficial purpose (landscape irrigation, agricultural irrigation, aesthetic uses, ground water recharge, industrial uses, and fire protection)." Wastewater reuse is a deliberate strategy of directly reusing wastewater effluent, treated to the degree appropriate for the intended reuse, to satisfy non- potable demands. Examples of use include irrigation of public parks urban landscapes, and golf courses, irrigation of nonfood crops and commercial nurseries, recreational impoundments, artificial wetlands, sustaining stream flows, and for industrial process and cooling tower water.

Some wastewater use applications are already taking place in the Lake Country region. After a study by Timmons Group, the town of Alberta began to use retreated effluent to disinfect its wastewater tanks**.** The town formerly used 6,000 to 10,000 gallons of potable water washing the tanks. They found they could retreat the wastewater and use it to sanitize the tanks, saving 5,000 to 8,000 gallons of drinking water.

River Ridge, a subdivision and golf course on Lake Gaston in Bracey, is a customer of the Roanoke River Service Authority. The RRSA provides the water to the subdivision while River Ridge owns its own water lines and operates a small package plant for the wastewater. The golf course is integrated into the wastewater system, by pumping the treated effluent into the course's ponds/water features. These ponds are in turn used to irrigate the course.

7—LAKE COUNTRY REGIONAL DROUGHT RESPONSE & CONTINGENCY PLAN
9 VAC 25-780-120

"A drought management plan is a document that (1) defines the conditions under which a drought-induced water supply emergency exists and (2) specifies the actions that are to be taken in response." AWWA Drought Management Handbook, 2002

A. Purpose of Drought Plan
B. Identifying Drought Conditions
C. Drought Stage Indicators & Responses
D. Notifications of Drought Conditions
E. Non-Essential Water Uses
F. Public Notification Process
G. Termination procedures
H. Implementation plan: Local Ordinance Adoption
I. Procedures for periodic review & revision

A. Plan Background and Purpose

Background

In 2005, the Southside Planning District began to prepare a regional water supply plan for the counties of Brunswick and Mecklenburg and the towns therein—Alberta, Boydton, Brodnax, Chase City, Clarksville, La Crosse, Lawrenceville and South Hill. This activity was in response to the Commonwealth of Virginia, Local and Regional Water Supply Planning Regulation, 9VAC 25-780, which established a planning process and criteria for local governments to use in the development of local or regional water supply plans. This plan is a cooperative effort among these localities to inventory existing water resources, supply, and use and to project future water demand. Additionally these regulations include a component regarding drought response and contingency plans. Communities that withdraw more than 300,000 gallons per month of surface water and ground water must develop a drought contingency and response plan. The need for such a plan resulted from the severe drought of 2001-2002, brought about by precipitation deficits from 1999, which raised awareness for the need to prepare for future drought events.

Although the 2002 drought was not as severe as the drought of record (1930-1932), increased water demand when compared to the 1930's resulted in significant impacts to all sectors of Virginia's economy and society. The intensity of these drought impacts peaked in late August 2002. Wildfire indices were at levels previously unrecorded in Virginia, the vast majority of Virginia agricultural counties had applied for Federal drought disaster designation, streamflows reached period of record lows, and thousands of individual private wells failed. As a result of the severity of the drought effect, the Governor declared a drought emergency for most of the state by Executive Order #33 and mandatory restrictions of outdoor water uses were imposed.

Locally during the 2002 drought, while the water supplies were adequate and no emergencies were

declared, there were concerns. Kerr Lake was five (5) feet below normal at the worst of the event (August 2002) and Clarksville did not experience supply problems. Great Creek Reservoir, which holds the water supply for the town of Lawrenceville, was approximately 22 inches below normal but was able to maintain streamflow below the dam to service the town's intake. Voluntary conservation measures were encouraged. As in the rest of the state, numerous private individual wells failed within the two counties.

South Hill, which utilized the Meherrin River as its water source at the time, experienced the most severe dilemma during the drought. In August of 2002 the town estimated that there were only about 28 days of supply available in the river. Pumps and generators were being utilized to fill the tank, as stream flow was so low the intake pumps were not functioning properly. Fortunately in September 2002 the Roanoke River Service Authority plant went into operation and the town's supply was switched to Lake Gaston along with three municipalities utilizing groundwater—the towns of Brodnax, La Crosse and Boydton.

Purpose

While these local experiences were not as dire as the rest of the state, rather than face emergency mandates in the future, a regional drought response plan that meets local need has been prepared. This plan will identify the conditions under which conservation measures should be implemented and the level of response needed based on the drought severity. In addition to establishing a method to monitor drought conditions, the plan provides a public notification system, tiered responses to the drought stages, and recommends appropriate actions by residents, businesses as well as local governments. In order to implement the plan, each municipality must draft and adopt a local ordinance. This Plan will serve as a guide for the development of the ordinances.

Authority

Code of Virginia

The Code of Virginia includes two sections that authorize localities to restrict water use in declared emergencies. Section 15.2-923 states that any locality may by ordinance (i) require installation of water conservation devices in the case of the retrofitting of buildings constructed prior to July 1, 1978 and (ii) restrict the nonessential use of ground water during declared water shortages or water emergencies. ("Non-essential use" shall not include agricultural use.) This section would apply to private wells.

Section 15.2-924, Water Supply Emergency Ordinances, gives authority to localities to adopt an ordinance restricting the use of water during a water emergency or to prevent the occurrence of a water supply emergency. This section of the Code is applicable to water supplied by a locality, authority, or company distributing water for a fee or charge. Furthermore, Virginia allows local restrictions to take precedence if an ordinance is in place. Therefore, if the Governor declares an emergency because of severe conditions in another part of the state and conditions in Lake Country do not warrant it, the local governments do not have to initiate.

B. Identifying Drought Conditions

For the Lake Country localities the drought response indicators have been established based on the local water resource.

Identifying Drought Conditions in Lake Country

As detailed in the previous Water Supply Plan sections, Existing Resources and Water Sources, the public water suppliers of the Lake Country region utilize all three water source types—streams, groundwater and reservoirs. Additionally given the rural nature of both Brunswick and Mecklenburg counties, most of the population is served by individual wells. The plan inventory estimates that there are more than 12,800 individual wells in the two counties. In Mecklenburg purveyors of public water are the town of Clarksville (Kerr Reservoir), Chase City (wells), and Roanoke River Service Authority (Lake Gaston), which serves the towns of South Hill, La Crosse, Boydton and Brodnax. In Brunswick County, Lawrenceville (Great Creek and the Meherrin River) is the service provider for itself and the town of Alberta.

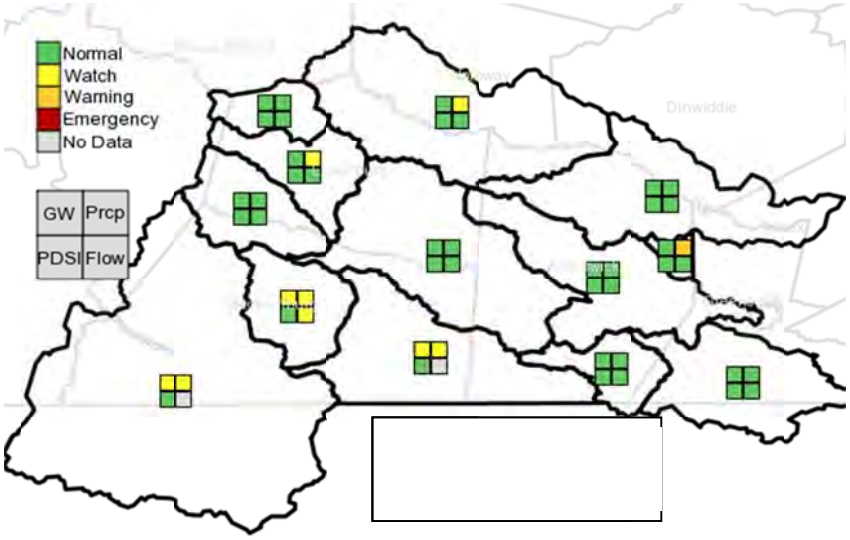
Therefore these water purveyors will be responsible for recognizing changes in the water sources and the potential impact to their customers. These purveyors will:

1. Determine when the indicators of drought stage conditions are met as described below in Paragraph C, and
2. Recommend that the Board of Supervisors of Brunswick and/or Mecklenburg counties and, the town councils of Alberta, Boydton, Brodnax, Chase City, Clarksville, La Crosse, Lawrenceville, and South Hill declare the appropriate drought stage and implement the designated response measures. The purveyors should provide a written memo or report to the authorities, which sets forth the water source data and factors utilized in determining the drought stage threshold has been met.

DROUGHT INDICATOR ANALYSIS--*LAKE COUNTRY MONITORING TOOL*

To assist local system operators in assessing drought conditions, DEQ has developed a web tool to present the current drought indicator data by the state drought management regions.
A Sub-region map customized to cover the Lake Country Region is available at: http://www.deq.virginia.gov/watersupplyplanning/drought/southside/current.html and a screen capture is shown below. This will provide the Lake Country localities better access to monitoring tools and drought response triggers.
By reviewing the graphs on the site an individual can assess the region's relative position in each drought indicator. The drought metrics that are calculated and presented in the on-line map follow:

- **Precipitation** - Precipitation totals are calculated for the water year (from the previous October 1st) and are compared to the normal annual values (indicated in the map legend as "Prcp").
- **Stream Flow** - Mean daily stream flows over the previous 7 days are used to determine stream drought condition (indicated in the map legend as "Flow").
- **Groundwater** - Current groundwater surface elevation is evaluated against historical normals (indicated in the map legend as "GW"). It is important to note that groundwater levels are measured as feet *below* the surface, therefore, *lower* numbers are equivalent to a *higher* amount of groundwater, and vice-versa.
- **Reservoir Levels** - The current level of reservoirs are evaluated against historical normals for some of the state drought regions.
- **Palmer Drought Severity Index** - The Palmer Drought Severity Index is a measure of "the relative dryness or wetness effecting water sensitive communities," such as agriculture (indicated in the map legend as "PDSI"). The Palmer index is calculated for the previous week by NOAA Climate Prediction Center for various regions in the United States, with 6 different geographical regions inside of the state of Virginia



The colored boxes provide a quick indication of the drought stage by indicator—groundwater, precipitation, Palmer Drought Severity Index (PDSI), and streamflow.

C. Drought Stage Indicators & Responses

DROUGHT WATCH—STAGE I

Drought Watch stage responses are intended to increase public and private sector awareness that climatic conditions are favorable for an oncoming significant drought event. Public outreach activities shall be identified targeted to prepare citizens for the onset of a drought event, to inform the population served by community water systems of the potential for drought conditions, and prepare the public for any potential water conservation activities that may be utilized. In rural areas public outreach to individual well owners during early drought conditions may be critical, especially if such users institute conservation measures that may reduce the likelihood of well failures during significant drought conditions (warning or emergency stages).

Municipality/Community Water System (CWS)	**Water Source**	**Drought Watch Indicator** *(Public Notice)*
Alberta	Great Creek	*Trigger:* Great Creek Reservoir level =214 msl
Lawrenceville		*Trigger:* Gauge Valve #3 open 13 turns
RRSA	Kerr Reservoir/Lake Gaston	*Trigger: Kerr Lake level = 292' msl*
Boydton Brodnax La Crosse South Hill River Ridge & all RRSA individual customers		
Clarksville	Kerr Reservoir	*Trigger: Kerr Lake level = 292' msl*
Chase City	Municipal Wells	If any of the other localities go into drought watch stage, town will enter drought watch stage.
Brunswick County Mecklenburg County	Individual Wells	If any of the other localities go into drought watch stage, county will enter drought watch stage.

***Stage I*—The Drought Watch Stage response** will include a public outreach campaign to notify all citizens in the region that a significant drought is likely given the current climatic conditions. The public will be notified via billing inserts, newspapers, televisions, local websites, and/or radio announcements.

Once a drought watch declaration is issued, the following actions are recommended:

- A public awareness and education process will be implemented to distribute water-conservation information and other special notices to customers to encourage each resident of the county and each customer to employ restraint in water usage.

DROUGHT WARNING—STAGE II

Drought Warning stage responses are required when the onset of a significant drought is imminent, the water supply in the planning area is threatened by these drought conditions, and restrictions are necessary to preserve an available supply of water. During the drought warning stage, voluntary water conservation activities are enacted with the goal of reducing water use by 5 – 10%, as such conservation measures may result in delayed progression towards a drought emergency stage.

Municipality/Community Water System (CWS)	**Water Source**	**Drought Warning Indicator** *(Voluntary restrictions)*
Alberta	Great Creek	*Trigger:* Great Creek Reservoir level = 211 msl
Lawrenceville		*Trigger:* Gauge Valve #3 open 13 turns
RRSA	Kerr Reservoir/Lake Gaston	*Trigger: Kerr Lake level = 290' msl*
Boydton Brodnax La Crosse South Hill River Ridge & all RRSA individual customers		
Clarksville	Kerr Reservoir	*Trigger: Kerr Lake level = 290' msl*
Chase City	Municipal Wells	If any of the other localities go into drought warning stage, town will enter drought warning stage.
Brunswick County Mecklenburg County	Individual Wells	If any of the other localities go into drought warning stage, county will enter drought warning stage.

Stage II—Drought warning responses

When any of the individual locality drought warning stage indicators are met, the Water System manager will notify the local governments and recommend a drought warning declaration for the respective locality(ies). Proximate localities in the regional planning area whose indicators have not reached the warning level will be recommended to declare a drought watch stage and initiate or maintain public outreach measures. Press releases will be distributed to the media to publicize updates to the drought conditions and needed actions. Voluntary water conservation measures will be encouraged. Encourage reduction in non-essential water use as detailed in Paragraph E. In the event of a drought warning, the public will be notified via billing inserts, newspaper, television, and/or radio announcements.

During a Drought Warning declaration, the following **voluntary** restrictions are strongly encouraged:

- Encourage that the watering of outside shrubbery, trees, lawns, grass, plants, home vegetable gardens, or any other vegetation be conducted only between the hours of 8:00 p.m. and 9:00 a.m., and only as necessary to preserve plant life.

- Washing of automobiles, trucks, trailers, boats, airplanes, or other types of mobile equipment except from a bucket or other container not exceeding three (3) gallons in capacity;
- Washing of streets, driveways, parking lots, service station aprons, office buildings, the exterior of homes or apartments, or other outdoor surfaces by commercial washing/cleaning services except from a bucket or other container not exceeding three (3) gallons of capacity.
- The operation of any ornamental fountain or other structure making similar use of water.
- The filling of swimming and/or wading pools, or the refilling of swimming and/or wading pools that were drained after the effective date of the declaration is not permitted.
- The use of water from fire hydrants for any purpose other than fire suppression or other emergency is not permitted except as authorized by the Locality.
- Serving of water in restaurants except upon request of customers.
- All public waterworks and self-supplied water users who withdraw more than 10,000 gallons per day should reduce or eliminate non-essential uses of water including the elimination of non-essential flushing of water lines.
- All persons who utilize any source of water for outdoor irrigation will assure that the minimum amount of water is utilized in the most efficient manner practical.
- All self-supplied users who withdraw less than 10,000 gallons per day, including private well users, will be encouraged to voluntarily reduce or eliminate non-essential uses of water.
- Local governments and public waterworks may impose water use restrictions consistent with local water supply conditions at any time.

DROUGHT EMERGENCY—STAGE III

Drought Emergency Stage responses are required during the height of a significant drought event, when the water supply in its planning area is threatened by emergency drought conditions and where more water use restrictions than previously enacted are necessary to preserve an available supply of water. During this period, it is likely that some water supplies will not be able to provide the amount of water needed by all users and therefore, non-essential uses of water should be eliminated to reduce unnecessary water demands on the systems. During the drought emergency stage, mandatory water conservation activities are enacted with the goal of reducing water use by 10 – 15%.

Municipality/Community Water System (CWS)	**Water Source**	**Drought Emergency Indicator** *(Mandatory restrictions)*
Alberta	Great Creek	*Trigger:* Great Creek Reservoir level = 210 msl
Lawrenceville		*Trigger:* Gauge Valve #3 fully open
RRSA	Kerr Reservoir/Lake Gaston	*Trigger: Kerr Lake level = 288 msl*
Boydton Brodnax La Crosse South Hill River Ridge & all RRSA individual customers		
Clarksville	Kerr Reservoir	*Trigger: Kerr Lake level = 288 msl*
Chase City	Municipal Wells	If any of the other localities go into drought emergency stage, town will enter drought emergency stage.
Brunswick County Mecklenburg County	Individual Wells	If any of the other localities go into drought emergency stage, county will enter drought emergency stage.

Stage III—Drought emergency responses

When any of the individual locality drought emergency stage indicators are met, the Water System manager will notify the local governments and recommend a drought emergency declaration for the respective locality(ies). For those proximate localities within the planning area that have not reached the emergency level, the committee will recommend that these local governments declare or maintain the drought watch or warning status. In the event of a drought emergency, the public will be notified via billing inserts, newspaper, television, and/or radio announcements.

Stage III—Drought emergency responses are mandatory water conservation requirements:

- All public waterworks and self-supplied water users who withdraw more than 10,000 gallons per day will initiate mandatory water conservation requirements listed in the mandatory non-essential water use restrictions as shown in Paragraph E and including the elimination of non-essential flushing of water lines.
- All self-supplied users, who withdraw less than 10,000 gallons per day, including private well users, will initiate the mandatory non-essential water use restrictions listed below.

D. Notification of Drought Conditions

The Water Purveyors will contact all the respective local government officials within their system to notify them that the drought stage indicator(s) has been met and make the recommendation to implement the appropriate drought stage response. The Purveyors will also notify the County Board of Supervisors through the County Administrator. Additionally all other purveyors in the region will be notified as a courtesy and so that a coordinated region-wide stage may be initiated if deemed warranted by a consensus of the localities.

- The purveyors should provide a written memo to the authorities that states the water source determining factors for drought stage announcement.
- The County Administrator may call a meeting of the Local Emergency Planning Committee [Brunswick] who may review the report of the water provider(s) and other data. Such additional local drought information may include the frequency of well failure reports and agricultural drought designation requests (FSA & VA Extension Service) as reported to the local governments.
- The declaration will be issued to the public, and to commercial and industrial customers through local newspapers, radio and cable television public access channels and any other means of communication deemed appropriate or identified in Paragraph F. The declaration will state specific conservation efforts to be taken.
- When the County declares a Drought Stage, the entire county will be under that Stage and the water conservation measures will be recommended for the entire area.

The following table indicates the party that each locality has determined to be the responsible party for drought monitoring and coordination.

Municipality	**Water System**	**Authority to declare**
Community Water System (CWS)	**Providers/ Monitor**	**Providers will contact: For Public Notification**
Alberta	Lawrenceville	Alberta Mayor
Lawrenceville		Lawrenceville manager & mayor
Boydton	Roanoke River Service Authority (RRSA)	Boydton mayor
Brodnax		Brodnax manager & mayor
La Crosse		La Crosse manager & mayor
South Hill		South Hill manager & mayor
River Ridge & all RRSA individual customers		RRSA Board
Clarksville	Clarksville	Clarksville manager & mayor
Chase City	Chase City	Chase City manager & mayor
Brunswick County	Various Groundwater CWS*	County Administrator (& LEPC)
Mecklenburg County	Various Groundwater CWS*	County Administrator

*Groundwater Systems outside the systems listed above should also notify the county(s) to assist with public notification.

E. Non-essential Water Use Restrictions

The following non-essential water uses will be prohibited during periods of declared drought emergencies. Please note the exceptions that follow each prohibited use. These prohibitions and exceptions will apply to uses from all sources of water. Water use restrictions shall not apply to the agricultural production of food or fiber, the maintenance of livestock including poultry, nor the commercial production of plant materials so long as best management practices are applied to assure the minimum amount of water is utilized.

1. **Unrestricted irrigation of lawns is prohibited.**
   a. Newly sodded and seeded areas may be irrigated to establish cover on bare ground at the minimum rate necessary for no more than a period of 60 days.
   b. Irrigation rates may not exceed one inch of applied water in any 7-day period.
   c. Gardens, bedding plants, trees, shrubs and other landscape materials may be watered with hand held containers, hand held hoses equipped with an automatic shutoff device, sprinklers or other automated watering devices at the minimum rate necessary but in no case more frequently than twice per week.
   d. Irrigation should not occur during the heat of the day.
   e. All allowed lawn irrigation must be applied in a manner to assure that no runoff, puddling or excessive watering occurs.
   f. Irrigation systems may be tested after installation, routine maintenance or repair for no more than ten minutes per zone.

2. **Unrestricted irrigation of golf courses is prohibited.**
   a. Tees and greens may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. at the minimum rate necessary.
   b. Localized dry areas may be irrigated with a hand held container or hand held hose equipped with an automatic shutoff device at the minimum rate necessary.
   c. Greens may be cooled by syringing or by the application of water with a hand held hose equipped with an automatic shutoff device at the minimum rate necessary.
   d. Fairways may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. at the minimum rate necessary not to exceed one inch of applied water in any ten-day period.
   e. Fairways, tees and greens may be irrigated during necessary overseeding or resodding operations in September and October at the minimum rate necessary. Irrigation rates during this restoration period may not exceed one inch of applied water in any seven-day period
   f. Newly constructed fairways, tees and greens and areas that are re-established by sprigging or sodding may be irrigated at the minimum rate necessary not to exceed one inch of applied water in any seven-day period for a total period that does not exceed 60 days.
   g. Fairways, tees and greens may be irrigated without regard to the restrictions listed above so long as:
      - The only water sources utilized are water features whose primary purpose is stormwater management,
      - Any water features utilized do not impound permanent streams,
      - During declared Drought Emergencies these water features receive no recharge from other water sources such as ground water wells, surface water intakes, or sources of public water supply, and,
      - All irrigation occurs between 9:00 p.m. and 10:00 a.m.

h. All allowed golf course irrigation must be applied in a manner to assure that no runoff, puddling or excessive watering occurs.
i. Rough areas may not be irrigated.

3. Unrestricted irrigation of athletic fields is prohibited.

a. Athletic fields may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. at a rate not to exceed one inch per application or more than a total of one inch in multiple applications during any ten-day period. All irrigation water must fall on playing surfaces with no outlying areas receiving irrigation water directly from irrigation heads.
b. Localized dry areas that show signs of drought stress and wilt (curled leaves, foot-printing, purpling) may be syringed by the application of water for a cumulative time not to exceed fifteen minutes during any twenty-four hour period. Syringing may be accomplished with an automated irrigation system or with a hand held hose equipped with an automatic shutoff device at the minimum rate necessary.
c. Athletic fields may be irrigated between the hours of 9:00 p.m. and 10:00 a.m. during necessary overseeding, sprigging or resodding operations at the minimum rate necessary for a period that does not exceed 60 days. Irrigation rates during this restoration period may not exceed one inch of applied water in any seven-day period. Syringing is permitted during signs of drought stress and wilt (curled leaves, foot-printing, purpling).
d. All allowed athletic field irrigation must be applied in a manner to assure that no runoff, puddling or excessive watering occurs.
e. Irrigation is prohibited on athletic fields that are not scheduled for use within the next 120-day period.
f. Water may be used for the daily maintenance of pitching mounds, home plate areas and base areas with the use of hand held containers or hand held hoses equipped with an automatic shutoff device at the minimum rate necessary.
g. Skinned infield areas may utilize water to control dust and improve playing surface conditions utilizing hand held containers or hand held hoses equipped with an automatic shutoff device at the minimum rate necessary no earlier than two hours prior to official game time.

4. Washing paved surfaces such as streets, roads, sidewalks, driveways, garages, parking areas, tennis courts, and patios is prohibited

a. Driveways and roadways may be pre-washed in preparation for recoating and sealing.
b. Tennis courts composed of clay or similar materials may be wetted by means of a hand-held hose equipped with an automatic shutoff device at the minimum rate necessary for maintenance. Automatic wetting systems may be used between the hours of 9:00 p.m. and 10:00 a.m. at the minimum rate necessary.
c. Public eating and drinking areas may be washed using the minimum amount of water required to assure sanitation and public health.
d. Water may be used at the minimum rate necessary to maintain effective dust control during the construction of highways and roads.

5. Use of water for washing or cleaning of mobile equipment including automobiles, trucks, trailers and boats is prohibited.

a. Mobile equipment may be washed using hand held containers or hand held hoses equipped with automatic shutoff devices provided that no mobile equipment is washed more than once per calendar month and the minimum amount of water is utilized.

b. Construction, emergency or public transportation vehicles may be washed as necessary to preserve the proper functioning and safe operation of the vehicle.
c. Mobile equipment may be washed at car washes that utilize reclaimed water as part of the wash process or reduce water consumption by at least 10% when compared to a similar period when water use restrictions were not in effect.
d. Automobile dealers may wash cars that are in inventory no more than once per week utilizing hand held containers and hoses equipped with automatic shutoff devices, automated equipment that utilizes reclaimed water as part of the wash process, or automated equipment where water consumption is reduced by at least 10% when compared to a similar period when water use restrictions were not in effect.
e. Automobile rental agencies may wash cars no more than once per week utilizing hand held containers and hoses equipped with automatic shutoff devices, automated equipment that utilizes reclaimed water as part of the wash process, or automated equipment where water consumption is reduced by at least 10% when compared to a similar period when water use restrictions were not in effect.
f. Marine engines may be flushed with water for a period that does not exceed 5 minutes after each use.

6. Use of water for the operation of ornamental fountains, artificial waterfalls, misting machines, and reflecting pools is prohibited.
a. Fountains and other means of aeration necessary to support aquatic life are permitted.

7. Use of water to fill and top off outdoor swimming pools is prohibited.
a. Newly built or repaired pools may be filled to protect their structural integrity.
b. Outdoor pools operated by commercial ventures, community associations, recreation associations, and similar institutions open to the public may be refilled as long as:
   - Levels are maintained at mid-skimmer depth or lower,
   - Any visible leaks are immediately repaired,
   - Backwashing occurs only when necessary to assure proper filter operation,
   - Deck areas are washed no more than once per calendar month (except where chemical spills or other health hazards occur),
   - All water features (other than slides) that increase losses due to evaporation are eliminated, and
   - Slides are turned off when the pool is not in operation.
c. Swimming pools operated by health care facilities used in relation to patient care and rehabilitation may be filled or topped off.
d. Indoor pools may be filled or topped off.
e. Residential swimming pools may be filled only to protect structural integrity, public welfare, safety and health and may not be filled to allow the continued operation of such pools.

8. Water may be served in restaurants, clubs, or eating-places only at the request of customers.

9. All residential, business and industrial water users; whether supplied by public water supplies, self-supplied sources, or private water wells; who do not normally utilize water for any of the listed prohibited uses are requested to voluntarily reduce water consumption by

at least 10%. This reduction may be the result of elimination of other non-essential water uses, application of water conservation practices, or reduction in essential water uses.

F. Public Notification procedures

Official notification of a drought emergency and the associated drought stage shall be effective upon their publication in any newspaper of general circulation in the affected county or counties. Drought stages and procedures should also be broadcast on any radio station serving the region and a notice included with the water bills of customers of a community water system.

Ongoing Public Information

A successful drought response plan will require public acceptance and understanding. The public should understand the need for continual conservation measures as well as the impact of inaction during periods of low precipitation that might lead to drought. Methods to educate the public regarding conservation needs as well as to inform of drought response needs may include:

- Presentations to school groups by health department, DEQ, and/or utility personnel.
- Periodic letters advising of climatic conditions and reminder of water conservation methods will be mailed or enclosed with bills.
- Drought information and conservation efforts or needs may will be mailed or enclosed with bills.
- Initiate periodic press releases regarding water conservation methods and/or needs.
- Initiate radio commentary/advisories.
- Localities and public service agencies will include conservation tips on their websites
- School programs/curriculum include water conservation methods; water supply information; and, the cycle of water resources.
- Building code changes to require low water use equipment.

G. Termination of Drought Declaration

Drought stages may be reduced in severity when the drought indicators for the source of the community water system has been lowered as shown by the DEQ Drought Indicator Analysis on-line tool or the water purveyor has recorded that the improved water level status has remained at that designation for 15 consecutive days, or by mutual agreement of the water purveyors in the locality.

When the drought indicator for the source of the community water system has returned to Normal as calculated by DEQ Drought Indicator Analysis on-line tool and has remained at that designation for 15 consecutive days, or by mutual agreement of the water purveyors in the locality, or when the declaration of a water emergency is lifted by the Governor of Virginia, the drought management requirements for that stage may be lifted. All customers will be notified in accordance with Paragraph F. It should be emphasized that personal conservation efforts should be maintained to avert other emergency situations.

H. Implementation

A Drought Ordinance is the tool to enforce water conservation efforts during a drought emergency. Local governments of the Commonwealth are authorized to adopt local ordinances to enforce the mandatory non-essential water use restrictions and to establish,

collect, and retain fines for violations of these restrictions. The ordinances should provide for the following:

1. **Authority**—Define who has the authority to declare drought or emergency conditions and impose water conservation measures.

2. **Conditions for Drought Declaration—**Set forth the conditions (drought stages) for drought declaration and potential water shortage.

3. **Additional Measures—**Authorize the locality to implement additional restrictions if needed in extreme emergency situations and prior efforts were insufficient to produce adequate water savings. *(recommended)*

4. **Enforcement—**Specify actions and/or penalties that will be imposed upon violators of the drought management ordinance.

5. **Appeals Procedure—**Upon declaration of the Drought Warning stage, establish an appeals review board to review applications for exemptions and institute power to approve, modify, or revoke such determinations. *(recommended)*

6. **Public Notice and Duration of Restrictions—**Indicates that the above restrictions shall become effective upon their being printed in any newspaper of general circulation within the locality, and/or broadcast upon any radio or television station serving the locality. This section also states that the Drought Watch, Drought Warning, and Drought Emergency Stage restrictions shall remain in effect until the designated authority determines that a water emergency in the locality no longer exists.

Adopted Drought Response Ordinances and supporting resolutions from Lake Country localities are contained in Appendix F.

I. CONTINUOUS WATER SUPPLY PLANNING PROCESS

The Lake Country Regional Water Supply Planning Program is a "living" document and part of a continuous planning process to ensure the availability of safe and adequate drinking water for all citizens in the region and protection of the beneficial uses of the region's water resources.

In accordance with 9VAC25-780-50.D, this water supply planning program shall be reviewed no later than five years after a compliance determination by the State Water Control Board. Additionally, this regional program shall be reviewed, revised, and resubmitted to DEQ every 10 years after the date of the last approval (9VAC25-780-50.F).

Future updates of this program will include readily available data (at that time) on water sources, water uses, environmental resources, projected water demand, water demand management practices, drought planning and response, and water needs and alternatives. Information from the State Water Resources Plan regarding any cumulative demand, use conflict, or instream flows in the Lake Country region will be included in future updates of the program as well (per 9 VAC 25-780-140.G).

PLAN SOURCES

Virginia Department of Health, Danville Office, Jeff Wells, et al

Virginia Department of Environmental Quality, Edward Morrow & Bill Norris

Towns of Boydton, Brodnax, Chase City, South Hill, La Crosse, Clarksville, Lawrenceville, Alberta.

Roanoke River Service Authority, Jeff Hinkle & Tom Corker

US Army Corps of Engineers, Wilmington District, John H. Kerr Dam website: http://epec.saw.usace.army.mil/roankerr.htm

Dominion Virginia Power website: http://www.dom.com/about/companies/ncpower/modes.jsp
Dominion Generation, *Roanoke Rapids and Gaston Project FERC No. 2009, Downstream Water Quality Monitoring Plan*, September 30, 2005.

U.S.G.S: http://water.usgs.gov/

NC Department of Environment and Natural Resources, Division of Water Resources:
http://www.ncwater.org/basins/Roanoke/

Kerr Lake Regional Water Plant, Christy
http://www.ci.henderson.nc.us/Regional_Water/Default.asp

Kerr Lake Regional Water System Interbasin Transfer Request & Draft Environmental Assessment Scope:
http://www.ncwater.org/Permits_and_Registration/Interbasin_Transfer/Status/Kerr/KLRWSIBTScope.pdf

Virginia Beach Pipeline: http://www.vbgov.com/dept/putility/lake_gaston/

Chowan River Basin:
http://www.nao.usace.army.mil/redesign/projects/civil%20works%20projects/Chowan%20River/homepage.asp
http://www.ncwater.org/basins/Chowan/

Phase I Study—Roanoke River Basin Water Resource Development Plan prepared by C.E. Maguire, Inc. for the City of Virginia Beach, Department of Public Utilities, 1982

Southside Planning District Commission, *Comprehensive Economic Development Strategy*, 2004.

LIST OF APPENDICES

Appendix A—Existing Water Sources tables

Appendix B—Existing Water Use tables

Appendix C—Existing Resource Conditions tables and supporting information

Appendix D—Projected Water Demand

Appendix E—Maps

- Map 1: Community Water Systems & SSU; Water Sources
- Map 2: Wetlands
- Map 3: Conservation Areas & Riparian Buffer
- Map 4: Land Use-Brunswick County
- Map 5: Land Use-Mecklenburg County
- Map 6: Impaired water Point Source Discharge

Appendix F—Local Resolutions and Drought Ordinances

Local and Regional Water Supply Planning

Existing Water Source and Water Use Data Entry Template

Local or Regional Plan:	Local ☐ Regional ☑
Political Locality(s):	
Locality FIPS Code(s):	025 117
Planning Area Population:	50,799
River Basin(s):	Roanoke
	Chowan
River Sub-basin(s):	Meherrin (03010204)
	Roanoke Rapids (03010106)
Contact Name:	Carol Corker
Title:	Regional Planner 2
Mailing Address:	P.O. Box 150
City and Zip Code:	South Hill, VA 23970
Phone:	434-447-7101
Fax:	434-447-7104
E-mail:	pdc@spdc.state.va.us

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/

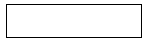
Water Supply Planning Water Source and Water Use Data Entry Template Key and Instructions:

Purpose:

- Include current information on existing water sources (9 VAC 25-780-70A).
- Include, at a minimum, current information documenting existing water use. Water use information shall be obtained from Department of Health waterworks compliance reports, Department of Environmental Quality ground water permit compliance reports or water use reports. Information shall be reported for the most recent previous annual compilation of such data that is available on the date of submission of the water plan (9 VAC 25-780-80A).

Instructions:

1). The spreadsheet tabs are numbered according to the regulation subsections:
70 = existing water source information
80 = existing water use information
***Please note that some spreadsheets cover multiple subsections.

2). Pay close attention to heading cells containing comments denoted by a red upper right hand corner tab: 
Such comment cells include data sources, data entry abbreviations and/or instructions.
To read comment, either 1) 'mouse over' red corner tab or 2) right click on cell and select "show comment".

3). For heading cells that include data years, designated YR **2XXX**, change the 2XXX to the appropriate year(s) (e.g. 2000 or 2002 - 2007).

4). Change the Header on each sheet (View --> Header and Footer --> Custom Header) to specify your locality or region.

5). If you cannot find a data element or if certain criteria are not applicable, note as such in the appropriate spreadsheet cell.
(**N.I. = no information available; N.A. = not applicable**)

6). List resources/references of information on each spreadsheet (using 'insert comment' feature or extra space below data entry cells).

7). The methods used herein are intended to provide baseline calculations only and may not be appropriate for every locality/region.

8). *If you change these spreadsheets in any way (i.e add/delete rows, colums and/or cells)* , **you are responsible for making sure that**: **a)** the water supply planning data criteria outlined in the regulation are met and **b)** spreadsheet formulas used to calculate such data are correct.

Spreadsheet Key

Spreadsheet Tabs:

	Universal Sheets
	Instructions and Supporting Sheets
	Community Water System Sheets (for municipal and private systems)
	Self-Supplied User Sheets ***Please note that self-supplied users *within CWS service areas* must be accounted for, if applicable, on these data sheets.

Spreadsheet Calculation Rows:

	Spreadsheet subsection totals
	Spreadsheet totals (including subsection totals)
	Calculations between 2 or more spreadsheets

Water Supply Planning Water Source and Water Use Data Entry Template Key and Instructions:

Abbreviations/Definitions

DEQ	= Virginia Department of Environmental Quality	
VDH	= Virginia Department of Conservation and Recreation	
DCR	= Virginia Department of Health	
CWS	= Community Water System:	A waterworks that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents and is regulated by the Virginia Department of Health Waterworks Regulation (12 VAC 5-590). **Service Area:** the geographical area served by a community water system.
SSU	= Self-Supplied Users:	Any person making a withdrawal of surface water or ground water from an original source (e.g. a river, stream, lake, aquifer, or reservoir fed by any such waterbody) for their own use. Self-supplied users do not receive water from a community water system.
NonAg	= Nonagricultural user (self-supplied) of more than 300,000 gallons per month	
Ag	= Agricultural user (self-supplied) of more than 300,000 gallons per month	
GW	= Ground Water	
SW	= Surface Water	
PA	= Planning Area:	The geographical area as defined by local government boundaries that is included in a local or regional water supply plan.
MGD	= million gallons per day	
Gal/Day	= gallons per day	
cfs	= cubic feet per second	

Conversion Factors

1 acre foot =		325,851	gallons

APPENDIX A – WATER SOURCES

COMMUNITY WATER SYSTEMS USING GROUNDWATER (9 VAC 25-780-70 B)

PWSID	Map Key	Water System Name	VDH Permitted Capacity (All Wells) MGD	VDH Permitted Capacity (All Wells) Gal/Day	INDIVIDUAL WELL DATA							DES.CAP. Ave Daily Withdrawal (Gal/Day) - All Wells
					Well No.	Well Depth	Casing Depth	Screen Depth	Well Diameter	VDH Permitted Capacity (Each Well) Gal/Min	VDH Permitted Capacity (Each Well) Gal/Day	
5117200	C3	CHASE CITY,TOWN OF	0.88	883,680	1	204	NAD	NAD	8	35	50,400	98,187
					2	510	NAD	NAD	10	20	28,800	
					3	419	NAD	NAD	10	17	24,000	
					4	199	NAD	NAD	10	45	64,800	
					5	502	NAD	NAD	8	12.5	18,000	
					7	420	NAD	NAD	10	50	72,000	
					8	500	NAD	NAD	8	17.5	25,200	
					14	325	77	NAD	6	32	46,080	
					15	300	63	NAD	6	35	50,400	
					16	325	NAD	NAD	6	25	36,000	
					17	385	NAD	NAD	8	325	468,000	
5117350	F5	FOX RUN / CHAMPION FOREST SHORES	0.04	43,300	1	465	85	NAD	6	NAD	NAD	14,000
					2	505	90	NAD	6	NAD	NAD	
					3	545	86	NAD	6	NAD	NAD	
5117371	F5	GREAT CREEK LANDING	0.06	63,200	1	345	85	NAD	6	42	60,480	14,400
					2	505	90	NAD	6	18	25,920	
					3	545	86	NAD	6	38	54,720	
5117530	A4	NEWTON MOBILE HOME PARK	0.02	15,700	1	NAD	NAD	NAD	6	NAD	7,850	15,700
					2	NAD	NAD	NAD	6	NAD	7,850	

NAD: No Available Data
Source: VA Department of Health, Danville Office April 20, 2006

Existing Water Sources
Table 70-B

PWSID	Map Key	Water System Name	VDH Permitted Capacity (All Wells) MGD	VDH Permitted Capacity (All Wells) Gal/Day	Well No.	Well Depth	Casing Depth	Screen Depth	Well Diameter	VDH Permitted Capacity (Each Well) Gal/Min	VDH Permitted Capacity (Each Well) Gal/Day	Ave Daily Withdrawal (Gal/Day) - All Wells
5025625	G5	SIOUAN SHORES SUBDIVISION	0.04	43,200	1	300	105	NAD	6	32	46,080	8,700
					2	525	52	NAD	6	40	57,600	
5117846	G5	TIMBUCTU SUBDIVISION	0.03	32,000	2	685	85	NAD	6	NAD	NAD	8,200
					3	585	104	NAD	6	NAD	NAD	
5117390	G5	JOYCEVILLE SUBDIVISION	0.05	53,200	1	265	73	NAD	6	32	46,080	8,000
					2	245	63	NAD	6	47	67,680	
5117097	F5	LAKE GASTON AMERICAMPS	0.08	79,200	1	NAD	NAD	NAD	6	10	14,400	7,000
		VDH says 7,000 GPD DEQ=13,781			2	NAD	NAD	NAD	6	45	64,800	
					3	365	83	NAD	6	NAD	NAD	
5117833	G5	TANGLEWOOD SHORES			1	265	53		6			5,600
5117450	F5	MERRYMOUNT SUBDIVISION	0.09	90,720	1	589	63	NAD	6	30	43,200	5,300
					2	405	69	NAD	6	33	47,520	
5117125	F5	BUCKHEAD SUBDIVISION	0.03	32,000	1	305	63	NAD	6	51	73,440	4,800
					2	525	50	NAD	6	43	61,920	
5117419	F5	LONG BRANCH SHORES	0.02	15,600	1	305	71	NAD	6	11	15,600	4,400
5117378	F4	HICKS HILL SUBDIVISION	0.02	18,400	1	505	51	NAD	6	13	18,400	3,650
5025570	H3	PLEASANT GROVE SUBDIVISION			1	285	54	NAD	6	12	17,280	3,650
5025500	H5	BRUNSWICK ESTATES	0.04	41,760	1	254	87.5	NAD	6	29	41,760	
5117379	G5	HOLLY GROVE ESTATES	0.05	54,720	1	345	54	NAD	6	38	54,720	3,200
5025550	I2	NOTTOWAY ACRES SUBDIVISION	0.01	8,640	1	370	50	NAD	6	6	8,640	3,000
5117831	F5	ST. TAMMANY LANDING	0.02	22,000	1	505	63	NAD	6	7	10,080	2,600

NAD: No Available Data
Source: VA Department of Health, Danville Office April 20, 2006

Existing Water Sources
Table 70-B

PWSID	Map Key	Water System Name	VDH Permitted Capacity (All Wells) MGD	VDH Permitted Capacity (All Wells) Gal/Day	Well No.	Well Depth	Casing Depth	Screen Depth	Well Diameter	VDH Permitted Capacity (Each Well) Gal/Min	VDH Permitted Capacity (Each Well) Gal/Day	Ave Daily Withdrawal (Gal/Day) - All Wells
5117096	F5	ANCHOR COVE SUBDIVISION - Well 1	0.02	22,000	1	425	50	NAD	6	30	43,200	2,400
					2	405	90	NAD	6	22	31,680	
5117375	F5	HAWK'S NEST POINT	0.01	14,400	1	505	81	NAD	6	18	25,920	2,300
5025650	?	SUNNYBROOK SUBDIVISION	0.02	24,480	2	505	50	NAD	6	17	24,480	2,000
5117420	B4	LONGVIEW TRAILER PARK	0.01	6,900	1	NAD	NAD	NAD	6	NAD	NAD	1,540
					2	260	NAD	NAD	6	NAD	NAD	
5025480	G5	LANE VIEW SUBDIVISION	0.02	17,280	1	385	50	NAD	6	12	17,280	3,500
5117120	?	PINE CREEK APARTMENTS	0.01	6,800	1	405	70	NAD	6	5	6,800	1,100
					2	205	114	NAD	6	48	69,120	
Locality or Region Wide (all systems using wells)				**1,589,180**							1,948,180	**223,227**
CWS Using GW		**In Million Gallons per Day**	**1.59**									**0.22**
Source: VDH: Danville Office--staff pulled files for SPDC to fill in data												
?	Subdivision(s) could not be located. Could not find anyone with knowledge of subdivision.											
NOTE:	No Virginia Groundwater Management Areas in Brunswick or Mecklenburg Counties											

NAD: No Available Data
Source: VA Department of Health, Danville Office April 20, 2006

COMMUNITY WATER SYSTEMS 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.

Water System Name	Reservoir Name	Basin/ Sub-basin	Drainage Area (square miles)	On-Stream Storage Available (gal)	Maximum (Permitted) Daily Withdrawals (Million gal/day)	Safe Yield of Reservoir (gal/day)	Capacity of Water Treatment Plant (gal/day)	Limitations on Withdrawal Permit	PWSID #	Map Key Appendix B *
CLARKSVILLE, TOWN OF	KERR RESERVOIR [1]	Roanoke River/ Middle Roanoke	7,320	1.576 MGD	1 MGD	352 MGD[1]	1 MGD	1 MGD or 4 gpm/ft2 No contractual limits	5117310	B4
ROANOKE RIVER SERVICE AUTHORITY	LAKE GASTON [1]	Roanoke River/ Roanoke Rapids	7,800	1.4 MGD	7 MGD	352 MGD[1]	4.18 MGD	7 MGD	5117707	E4
BOYDTON, TOWN OF	RRSA***	"	***	***	***	***	***	***	5117100	D4
BRODNAX, TOWN OF	RRSA***	"	***	***	***	***	***	***	5025120	G4
LA CROSSE, TOWN OF	RRSA***	"	***	***	***	***	***	***	5117400	F4
RIVER RIDGE	RRSA***	"	***	***	***	***	***	***	5117700	F5
SOUTH HILL, TOWN OF	RRSA***	"	***	***	***	***	***	***	5117800	F3
VIRGINIA BEACH**	LAKE GASTON**	Roanoke River/ Roanoke Rapids	See Lake Gaston	See Lake Gaston	60 MGD	See Limits & footnote[1]	Not Applicable; contract limit	60 MGD		I5
KERR LAKE REGIONAL WATER PLANT**	KERR RESERVOIR	Roanoke River/ Middle Roanoke			20 MGD		10 MGD	20 MGD		

Total Permit Limitations Kerr/Lake Gaston **88 MGD**

[1] Lake Gaston & Kerr Reservoir are interconnected reservoirs of the Roanoke River.
Kerr Reservoir Water Supply storage in Conservation Pool between elevation 268--300 msl; Lake Gaston storage is in Kerr Reservoir
Safe Yield taken from *Phase I Study--Roanoke River Basin Water Resource Development Plan for VA Beach,1982*
This yield based on worst dry period on record of 1980-81.

* See Appendix B--Community water Systems & Self Supplied Users

**Outside of Water Supply Planning Area.

*** Town receives its water from the Roanoke River Service Authority (5117100)

Community Water Systems
Existing Water Sources
Table 70-D, 80-B10

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

Water System Name	Stream or River Name	Basin/ Sub-basin	Intake Drainage Area (square miles)	DESIGN CAPACITY: Average Daily Withdrawal (MGD)	DESIGN CAPACITY: Maximum Daily Withdrawal (MGD)	DESIGN CAPACITY: Pump Station (MGD)	DESIGN CAPACITY: Water Treatment Plant (MGD)	Safe Yield of Stream* (MGD)	Lowest Daily Flow of Record (cfs)	VDH Permitted Capacity (MGD)	Limitations on Withdrawal Permit	EXISTING INSTREAM BENEFICIAL USES: Within Planning Area See Table 80 B10	EXISTING INSTREAM BENEFICIAL USES: Outside Planning Area See Table 80 B10
LAWRENCEVILLE PWSID# 5025450	Great Creek	Chowan River/ Meherrin	46	0.716	0.827	2	2	3.23	Not Available	2	2 MGD @ 4 gpm/ft2	Recreation	Recreation
LAWRENCEVILLE (AUX SOURCE) PWSID# 1028	Meherrin River	Chowan River/ Meherrin	552	Currently not utilized		1	Same as above	2.0	2.2 cfs	Not found	Not found	Water Supply	Water Supply
ALBERTA PWSID# 5025050	Great Creek***	Chowan River/ Meherrin	***See Lawrenceville									Wastewater discharge	Wastewater discharge
CWS using Streams											**2 MGD**		

**Source: Comprehensive Water & Sewer Study for Brunswick County, VA, B&B Consultants, 1997*

**** Town receives its water from the Town of Lawrenceville system (5025450)*

Lawrenceville is grandfathered regarding water withdrawals from Great Creek--no restrictions currently.

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 (MGD)	DESIGN CAPACITY: Maximum Daily Withdrawals (MGD)	Limitations on Withdrawal Permit(s)	SSU Non-Ag WATER USE: 80 B6 / 80C Estimated Annual Average (MG) YR 2004	SSU Non-Ag WATER USE: 80 B6 / 80C Estimated Annual Average (MGD) YR 2004
Within CWS Service Area							
UAE MECKLENBURG COGENERATION LP; MECKLENBURG COGENERATION FACILITY	JOHN H KERR RESERVOIR	POWER FOSSIL	NAD Non-Consumptive*	3.550	600 ac.-ft. of conservation storage between elevation 268-300 msl	881	2.41
Within CWS Service Area Totals:			**0.00**	**3.55**			**2.41**
Outside CWS Service Area							
JOHN H. KERR HYDROPOWER PLANT	JOHN H KERR RESERVOIR	HYDROPOWER	NAD Non-Consumptive*	Non-consumptive	No limits	2,051,929	5,621.72
VIRGINIA DEPT OF CORRECTIONS	JOHN H KERR RESERVOIR	Community Water System	0 contract only	0 contract only	DOC has a contract with ACOE for 23 ac.-ft. of conservation area; withdrawal not to exceed 60,000 gal/day	0	0.00
Outside CWS Service Area Totals:			**0.00**	**0.00**			**5,626.55**
Self-Supplied Nonagricultural Users of Surface Water Totals:			**0.00**	**3.55**			**5,628.97**

* Non-consumptive water use for power generation; employees use well.

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)

Map Key	PWSID	Water System Name	Use Category	DESIGN CAPACITY: Average Daily Withdrawals (MGD)	DESIGN CAPACITY: Maximum Daily Withdrawals (MGD)	INDIVIDUAL WELL DATA: Well Name and ID #	Well Depth (feet)	Casing Depth (feet)	Screen Depth (top & bottom)	Well Diameter (inches)	Limitations on Withdrawal Permit(s)	SSU Non-Ag WATER USE: 80 B6 / 80C Estimated Annual Average (MG) YR 2004:DEQ	SSU Non-Ag WATER USE: 80 B6 / 80C Estimated Annual Average (MGD) YR 2004:DEQ
				Within CWS Service Area									
	Within CWS Service Area Totals:			**0**	**0**								**0**
				Outside CWS Service Area									
J3	1012 1025	Vulcan, Lawrenceville Plant	Mining	NAD	2.90	Not Applicable--Pit Sump						746	2.04
	Within CWS Service Area Totals:			**0**	**3**								**2**
	Self-Supplied Nonagricultural Users of Ground Water Totals:			**0**	**3**								**2**
	Self-Supplied Nonagricultural Users Totals (SW & GW):			**0**	**6**								**5,631**

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)

	Source:		Amount to be Purchased:		Contract Limitations:				
Community Water System	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	Maximum Daily (MGD)	Average Annual (MGD)	Supplier(s) Name(s)	Contract or Agreement Terms	Recipient(s) or Area(s) Served	Contract limits	Other
There are no contracts to purchase water from water supply systems outside the Planning Area.									

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)

	Source:		Amount Available to be Purchased:		Contract Limitations:				
Community Water System	Ground Water Well Name & ID No.	Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	Maximum Daily (MGD)	Average Annual (MGD)	Supplier(s) Name(s)	Contract or Agreement Terms	Recipient(s) or Area(s) Served	Contract limits	Other
Not applicable.									
See Table H-2 for systems withdrawing from Lake Country sources.									

WATER PURCHASED BY WATER SUPPLY SYSTEMS OUTSIDE PLANNING AREA (9 VAC 25-780-70H)

Withdrawals from Outside	Source	Contract with:	Type	Dates	Total (MG)	Ave. (MGD)	Min (MGD)	Minimum monthly	Max (MGD)	Maximum monthly	Contract limits	Contract limits/ customers
City of Virginia Beach	Lake Gaston	VA Power	SW	1998	10,442	28.5	0	352	49.4	1,388	60 MGD	48-50 to VA Beach; Cheasapeake 10 MGD; Suffolk & Isle of Wight 1 MGD each
Intake located on Pea Hill creek, Brunswick County				1999	6,200	16.9	0	18	49.4	1,320		
Map Key: I5				2000	6,777	18.5	0	144	59.9	1,429		
				2001	14,498	39.8	7	573	52.2	1,498		
				2002	10,095	27.7	4.5	694	44	1,055		
				2003	2,989	8.2	7.2	218	30.5	350		
				2004	5,642	15.4	5	218	50	1,369		
				2005	8,825	24.2	7	206	50.4	1,410		
				2006	8,640	23.7	0	204	50.3	1,449		

Water Purchase Contracts outside Lake Country Study Area but from shared reservoir

Kerr Lake Regional Water Plant	Kerr Reservoir	ACOE	SW	2006	Data unavailable	6.5	Data unavailable	Data unavailable	7	Data unavailable	20 MGD	Vance Co., City of Henderson, NC; Granville Co., City of Oxford, NC; Warren Co., NC--Towns of Kittrell, Norlina, Warrenton; Franklin Co.; Franklinton
Intake located on Nutbush Creek, Vance County, NC												
												Source Christie Lipscomb, Kerr Lake Regional Water Plant
Water Supply Commitments from Outside Planning Area: TOTAL											**80 MGD**	

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: Ground Water Well Name & ID No.	SOURCE TYPE: Surface Water Reservoir & Sub-basin or Stream/River Name & Sub-basin	USE TYPE: Irrigation	USE TYPE: Nonirrigation	Animal Population		DEQ Records 2004	Surface Water (MGD)	Ground Water (MGD)
Within CWS Service Area									
NONE								0	0
Within CWS Service Area Totals:								**0**	**0**
Outside CWS Service Area									
SJB Farms Inc.	Hog House Well/ PWSID 1020		IRR		7,992	Hogs	0.014		0.03
SJB Farms Inc.	Pond/ PWSID 1027	Ponds	IRR		1,000	Hogs	0	0.004	
Farms below are permitted by DEQ but their usage is now (2006) below the 300,000 gal. Per month threshold:									
Diamond Grove Farm--dairy	Spring Development--Meherrin River basin/ #5025570			AGR	360	Dry & Milk Cows			0.01
McAden Dairy	Spring Development--Meherrin River basin No #			AGR	260 40 80	Milkers Dry Calves			0.01
Park Forest Farm--dairy	PWSID 1014			AGR	200	Milkers			0.01
Outside CWS Service Area Totals:								0.00	**0.06**
Estimated Total Agricultural Useage By Source:								**0.00**	**0.06**

* Usage per animal derived from: DEQ records

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: Estimated Total Self-Supplied Population			Step 3: Estimated Total Self-Supplied Water Use OUTSIDE COMMUNITY WATER SYSTEM SERVICE AREA				Step 4: Estimated Total Self-Supplied Water Use INSIDE COMMUNITY WATER SYSTEM SERVICE AREA			
Locality	Locality Population YEAR **2005 Est.**	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)	Estimated Annual Average Use (gallons/day) (Column H x Column I)	Estimated Annual Average Use (MGD)	# of Self-Supplied Users	Per Capita Water Use Factor (gal/person /day)	Estimated Annual Average Use (gallons/day) (Column L x Column M)	Estimated Annual Average Use (MGD)
Brunswick County	**18,222**	**6,288**	**11,934**	**2.47**	**4,832**	**12**	**11,934**	**85**	**1,014,390**	**1.01**	**0**		**0**	**0.00**
Mecklenburg County	**32,214**	**13,357**	**18,857**	**2.38**	**7,923**	**19**	**18,857**	**85**	**1,602,845**	**1.60**	**2**	NA DEQ records used	**1,000**	**0.001**
Planning Area Totals	**50,436**	**19,645**	**30,791**		**12,755**	**31**	**30,791**		**2,617,235**	**2.62**	**2**		**1,000**	**0.001**

Utilized VDH Waterworks/Owners list for number of businesses

Used 85 gallons per person per day for well usage estimates | Lake Country Groundwater CWS population (4,413) / use (.37 MGD)=85 GPD per person | See Table 80 B1-B5

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
None found		**None found**		**None found**

APPENDIX B – WATER USE

	COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER (9 VAC 25-780-80 B1-B5)												
				1.2			WITHDRAWAL: 2005		USAGE:				
Map Key	PWSID	Water System Name	YEAR	Source Name	Population Served	Number of Connections	Average Daily (MGD)	Maximum Daily (MGD)	Annual (MG)	Average Monthly (MG)	Peak Day (MGD)	Peak Day (Month)	Per Capita GPCD
					Municipal Systems								
H2	5025050	ALBERTA, TOWN OF	2005	Lawrenceville	800	243	0.04	0.61	16.6	1.4	0.61	1.8	
H3	5025450	LAWRENCEVILLE, TOWN OF		Stream-Great Creek/Meherrin	4,806	846	0.72	0.83	262.0	21.9	0.83	23.2	
		Lawrenceville System Total		**Stream-Great Creek/Meherrin**	**5,606**	**1,089**	**0.76**	**1.4**	**262**	**21**	**1**	**25**	136
B4	**5117310**	**CLARKSVILLE, TOWN OF**		**Kerr Reservoir**	**1,500**	**784**	**0.25**	**0.5**	**92**	**7.7**	**NAD**	**0.5**	167
G4	5025120	BRODNAX, TOWN OF--RRSA		RRSA	317	192	0.02	see RRSA below	8.8	0.7	NAD	0.9	
D4	5117100	BOYDTON, TOWN OF--RRSA		RRSA	477	270	0.05	see RRSA below	17.2	1.4	NAD	1.7	
F4	5117400	LA CROSSE, TOWN OF--RRSA		RRSA	750	403	0.06	see RRSA below	23.5	2.0	NAD	2.4	
F3	5117800	SOUTH HILL, TOWN OF--RRSA		RRSA	5,500	2,700	0.83	see RRSA below	302.7	25.2	NAD	30.4	
F5	5117700	RIVER RIDGE--RRSA		RRSA	950	1,500	0.05	see RRSA below	18.7	1.6	NAD	2.2	
E4	5117707	ROANOKE RIVER SERVICE AUTHORITY--Direct Customers		Lake Gaston	132	44	0.01	see RRSA below	3.0	0.2	NAD	0.24	
	5117707	**Roanoke River Service Authority Total ***		**Lake Gaston**	**8,126**	**5,109**	**1.2**	**1.7**	**447**	**37**	**2**	**41**	148
C3	**5117200**	**Chase City**		**Wells--9**	**2,242**	**1,271**	**0.2**	**0.2**	**67**	**6**	**0.2**	**6**	83
		Calculation sheet/local											
		Source VDH 2005	* RRSA Total is gross amount, including transmission & processing amounts. Data for each service area does not equal system total.										
		Local--2005											
		DEQ--2004											
		Municipal Community Water System Totals:			**17,474**	**8,253**	**2.4**		**868**	**71**			

COMMUNITY WATER SYSTEMS USING GROUND AND SURFACE WATER (9 VAC 25-780-80 B1-B5)

				1.2			WITHDRAWAL: 2005		USAGE:				
Map Key	PWSID	Water System Name	YEAR	Source Name	Population Served	Number of Connections	Average Daily (MGD)	Maximum Daily (MGD)	Annual (MG)	Average Monthly (MG)	Peak Day (MGD)	Peak Day (Month)	Per Capita GPCD
						Private Systems							
	5025480	Lane View Subdivision		GW	39	13	0.001	NA	0.438	0.037	NAD	NAD	
	5025500	Brunswick Estates		GW	70	33	0.004	NA	1.278	0.106	NAD	NAD	
	5025550	Nottoway Acres Subdivision		GW	23	58	0.003	NA	1.095	0.091	NAD	NAD	
	5025570	Pleasant Grove Subdivision		GW	85	27	0.004	NA	1.332	0.111	NAD	NAD	
	5025625	Siouan Shores Subdivision		GW	95	38	0.009	NA	3.176	0.265	NAD	NAD	
	5025650	Sunnybrook		GW	53	15	0.002	NA	0.730	0.061	NAD	NAD	
	5117096	Anchor Cove		GW	38	15	0.002	NA	0.876	0.073	NAD	NAD	
	5117097	Lake Gaston Americamps		GW	525	475	0.007	NA	2.555	0.213	NAD	NAD	
	5117120	Pine Creek Apartments		GW	25	21	0.001	NA	0.402	0.033	NAD	NAD	
	5117125	Buckhead Subdivision		GW	66	24	0.005	NA	1.752	0.146	NAD	NAD	
	5117350	Fox Run/Champion Forest Sub.		GW	226	89	0.014	NA	5.110	0.426	NAD	NAD	
	5117371	Great Creek Landing		GW	205	82	0.014	NA	5.110	0.426	NAD	NAD	
	5117375	Hawk's Nest Sub.		GW	25	12	0.023	NA	8.395	0.700	NAD	NAD	
	5117378	Hick's Hill Sub.		GW	35	14	0.004	NA	1.332	0.111	NAD	NAD	
	5117379	Holly Grove Estates		GW	25	15	0.032	NA	11.680	0.973	NAD	NAD	
	5117390	Joyceville Subdivision		GW	85	34	0.008	NA	2.920	0.243	NAD	NAD	
	5117419	Long Branch		GW	60	24	0.004	NA	1.606	0.134	NAD	NAD	
	5117420	Longview Trailer Park		GW	45	23	0.002	NA	0.562	0.047	NAD	NAD	
	5117450	Merrymount Subdivision		GW	28	14	0.005	NA	1.935	0.161	NAD	NAD	
	5117530	Newton Mobile Home Park		GW	250	92	0.008	NA	2.865	0.239	NAD	NAD	
	5117831	St. Tammany Landing		GW	30	21	0.003	NA	0.949	0.079	NAD	NAD	
	5117833	Tanglewood Shores		GW	50	46	0.006	NA	2.044	0.170	NAD	NAD	
	5117846	Timbuctu Subdivision		GW	88	35	0.032	NA	11.680	0.973	NAD	NAD	
		Private Community Water System Totals:			**2,171**	**1,220**	**0.2**		**70**	**5.8**			88
		Community Water System Totals:			**19,645**	**9,473**	**2.6**		**938**	**77**			132
		Total Groundwater systems			4,413	/	0.376606	=		0.19129			
		Per capita use --individual wells					0.0000853	**85**	**Gallons per person per day**				

Community Water System Monthly Water Use Worksheet
Your Locality or Region

Community Water System Use Calculations Worksheet

Monthly Readings in Million Gallons per Day (MGD)

	Lawrenceville	Alberta	Chase City	Clarksville	RRSA: Boydton	RRSA: Brodnax Monthly total	RRSA: La Crosse	RRSA: River Ridge	RRSA: South Hill	RRSA System	Locality or Region Total
	GW ☐ SW ☑	GW ☐ SW ☑	GW ☑ SW ☐	GW ☐ SW ☑	GW ☐ SW ☑	GW ☐ SW ☑	GW ☐ SW ☑	GW ☐ SW ☑	GW ☐ SW ☑	GW ☐ SW ☑	
January	20.71	1.26	5.97	7.70	1.36	0.66	1.74	1.12	22.44	35.89	
February	18.11	1.07	5.53	7.95	1.47	0.75	2.10	1.29	25.35	30.97	
March	20.18	1.08	5.27	8.40	1.27	0.68	1.74	0.86	23.40	34.51	
April	19.98	1.18	5.10	8.38	1.19	0.62	1.60	1.04	21.83	35.52	
May	21.16	1.23	6.19	8.80	1.34	0.73	1.88	1.32	24.82	38.17	
June	23.01	1.83	5.45	8.22	1.69	0.83	2.14	2.17	29.49	39.54	
July	23.17	1.46	5.53	8.13	1.54	0.87	1.57	1.96	24.41	39.57	
August	24.66	1.49	6.27	7.60	1.60	0.86	2.39	2.05	30.42	41.24	
September	24.09	1.46	5.64	6.94	1.61	0.72	2.08	2.24	27.34	40.26	
October	23.16	1.39	5.82	6.60	1.41	0.68	1.68	1.62	24.96	37.54	
November	21.39	1.21	5.65	6.23	1.49	0.74	2.40	1.72	26.49	37.72	
December	21.71	1.22	5.21	6.73	1.22	0.64	2.15	1.37	21.78	35.81	
Annual MGD	**261**	**16**	**68**	**92**	**17**	**9**	**23**	**19**	**303**	**447**	**868**
Average Monthly	**21.8**	**1.3**	**5.6**	**7.7**	**1.4**	**0.7**	**2.0**	**1.6**	**25.2**	**37.2**	**72**
Average Daily	**0.72**	**0.04**	**0.19**	**0.25**	**0.05**	**0.02**	**0.06**	**0.05**	**0.83**	**1.22**	**2.4**
Peak day	**1.18**	**n.a.**	**0.20**	**0.54**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**1.69**	
System population	**5,606**		**2,331**	**1,500**						**8,126**	**17,563**
Per Capita GPCD	**128**		**79**	**168**						**151**	**135**
Peaking factor	1.65		1.09	2.15						1.38	

Worksheet Instructions:

1) Enter your system name

2) Select source check box (GW = Ground Water; SW = Surface Water)

3) Enter monthly water use data in million gallons per day (MGD)

4) Highlight peak month cells.

5) Enter the average annual and average monthly values into the appropriate cells of Spreadsheet 80 B1-5 CWS Use.

Lawrenceville, RRSA include town amounts, so Regional Total includes 4 systems.

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

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 (MGD)	DESIGN CAPACITY: Maximum Daily Withdrawals (MGD)	Limitations on Withdrawal Permit(s)	SSU Non-Ag WATER USE: 80 B6 / 80C Estimated Annual Average (MG) YR 2004	SSU Non-Ag WATER USE: 80 B6 / 80C Estimated Annual Average (MGD) YR 2004
Within CWS Service Area							
UAE MECKLENBURG COGENERATION LP; MECKLENBURG COGENERATION FACILITY	JOHN H KERR RESERVOIR	POWER FOSSIL	NAD Non-Consumptive*	3.550	600 ac.-ft. of conservation storage between elevation 268-300 msl	881	2.41
Within CWS Service Area Totals:			**0.00**	**3.55**			**2.41**
Outside CWS Service Area							
JOHN H. KERR HYDROPOWER PLANT	JOHN H KERR RESERVOIR	HYDROPOWER	NAD Non-Consumptive*	Non-consumptive	No limits	2,051,929	5,621.72
VIRGINIA DEPT OF CORRECTIONS	JOHN H KERR RESERVOIR	Community Water System	0 contract only	0 contract only	DOC has a contract with ACOE for 23 ac.-ft. of conservation area; withdrawal not to exceed 60,000 gal/day	0	0.00
Outside CWS Service Area Totals:			**0.00**	**0.00**			**5,626.55**
Self-Supplied Nonagricultural Users of Surface Water Totals:			**0.00**	**3.55**			**5,628.97**

* Non-consumptive water use for power generation; employees use well.

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

				USAGE CATEGORIES:							
	Water System Name	System MGD	**Monthly** System Total (MG)	Residential (MG)	Commercial (MG)	Industrial (MG)	Schools/ Institutional (MG)	Prisons (MG)	Processing or otherwise Unaccounted for Losses (MG)	Sales to Other CWS's: Amount Sold (MG)	Sales to Other CWS's: System Name
	Municipal										
	Alberta		1.38	1.22	0.16						
	Lawrenceville		21.78	3.02	1.79		1.52	9.56	4.37	1.52	Alberta
	LAWRENCEVILLE SYSTEM	**0.76**	**23.16**	**4.24**	**1.95**	**0.00**	**1.52**	**9.56**	**4.37**	**1.52**	Alberta
	CHASE CITY [1]	**0.20**	**6.22**	**5.71**	**0.48**	**0.03**					
	CLARKSVILLE	**0.29**	**8.80**	**5.80**	**2.10**				**0.90**		
	RRSA System/Direct customers		8.65	0.25	0.20				8.20		
	BOYDTON		1.29	0.69	0.59						
	BRODNAX		1.06	0.60	0.06	0.04			0.37		
	LA CROSSE		2.06	1.38	0.38				0.30		
	RIVER RIDGE		1.56	1.56							
	SOUTH HILL		26.60	1.10	13.78	6.00		4.00	1.73		
	RRSA SYSTEM TOTAL	**1.35**	**41.21**	**5.58**	**15.01**	**6.04**	**0.00**	**4.00**	**10.59**	**[32.57]**	towns
	Municipal Total	**2.61**	**79.40**	**21.3**	**19.5**	**6.1**	**1.5**	**13.6**	**15.9**	**1.5**	

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

				USAGE CATEGORIES:							
	Water System Name	System MGD	**Monthly** System Total (MG)	Residential (MG)	Commercial (MG)	Industrial (MG)	Schools/ Institutional (MG)	Prisons (MG)	Processing or otherwise Unaccounted for Losses (MG)	Sales to Other CWS's: Amount Sold (MG)	Sales to Other CWS's: System Name
	Private										
5025480	Lane View Subdivision		0.014	0.014							
5025500	Brunswick Estates		0.042	0.042							
5025550	Nottoway Acres Subdivision		0.036	0.036							
5025570	Pleasant Grove Subdivision		0.044	0.044							
5025625	Siouan Shores Subdivision		0.104	0.104							
5025650	Sunnybrook		0.024	0.024							
5117096	Anchor Cove		0.029	0.029							
5117097	Lake Gaston Americamps		0.084	0.084							
5117120	Pine Creek Apartments		0.013	0.013							
5117125	Buckhead Subdivision		0.058	0.058							
5117350	Fox Run/Champion Forest Sub.		0.168	0.168							
5117371	Great Creek Landing		0.168	0.168							
5117375	Hawk's Nest Sub.		0.276	0.276							
5117378	Hick's Hill Sub.		0.044	0.044							
5117379	Holly Grove Estates		0.384	0.384							
5117390	Joyceville Subdivision		0.096	0.096							
5117419	Long Branch		0.053	0.053							
5117420	Longview Trailer Park		0.018	0.018							
5117450	Merrymount Subdivision		0.064	0.064							
5117530	Newton Mobile Home Park		0.094	0.094							
5117831	St. Tammany Landing		0.031	0.031							
5117833	Tanglewood Shores		0.067	0.067							
5117846	Timbuctu Subdivisior		0.384	0.384							
	Private CWS Total	**0.08**	**2.30**	**2.30**	**0**	**0**	**0**	**0**	**0**	**0**	
	Total Use By Category (for All Community Water Systems)	**2.7**	**81.7**	**23.6**	**19.5**	**6.1**	**1.5**	**13.6**	**15.9**	**1.5**	
	Percent of total			29%	24%	7%	2%	17%	19%	2%	

Calculation sheet/local
Source VDH 2005
Local--2005
DEQ--2004

[1] System total- (population X 85)=residential

[1] 80 non residential establishments according to VEC Employer Listing 75 commercial; 5 industrial: 93.75% commercial; 6.25% Ind.

IN STREAM BENEFICIAL USE:--COMMUNITY WATER SYSTEMS USING STREAM INTAKES (9 VAC 25-780-80 B10)

Water System Name	Name of Stream or River	Basin/ Sub-basin	Drainage Areas of Intake	Within the Planning Area, Existing In-Stream Beneficial Uses	Outside the Planning Area, Existing In-Stream Beneficial Uses
CLARKSVILLE, TOWN OF	Roanoke River/ Kerr Reservoir	Roanoke River/ Lower Roanoke	Roanoke River/ 7,320 sq. mi.	Power Generation: USACOE--John H. Kerr Dam & Power Plant, Mecklenburg Co-Gen. Recreation--Kerr Reservoir: fishing, boating, swimming etc. Clarksville Wastewater treatment plant. ACOE Wildlife Management Areas	Water supply Kerr Lake Regional Water System; Recreation
ROANOKE RIVER SERVICE AUTHORITY	Roanoke River/ Gaston Lake	Roanoke River/ Lower Roanoke	Roanoke River/ 7,800 sq. mi.	Power Generation: VA Dominion Power--Gaston Dam Fish & Wildlife Habitat/Recreation Public Water Supply	Water Supply: Roanoke Rapids Recreation; Power Generation
VIRGINIA BEACH	Roanoke River/ Gaston Lake	Roanoke River/ Lower Roanoke		Power Generation: VA Dominion Power Fish & Wildlife Habitat/Recreation	
Community Water System	Name of Stream or River	Drainage Areas of Intake	Sub-Basin of Intake structure		
LAWRENCEVILLE	Great Creek	Chowan River/ Meherrin	46	Meherrin River is a Virginia Scenic River; Fish & Wildlife Habitat/Recreation Lawrenceville Wastewater Plant discharges into river;	Chowan River: anadromous fish spawning areas and Merchant's Millpond State Park; Water supply

APPENDIX C – EXISTING RESOURCES

Existing Water Uses
Rainfall Data
Table 90A

Total Precipitation and Departures from Normal (Inches)

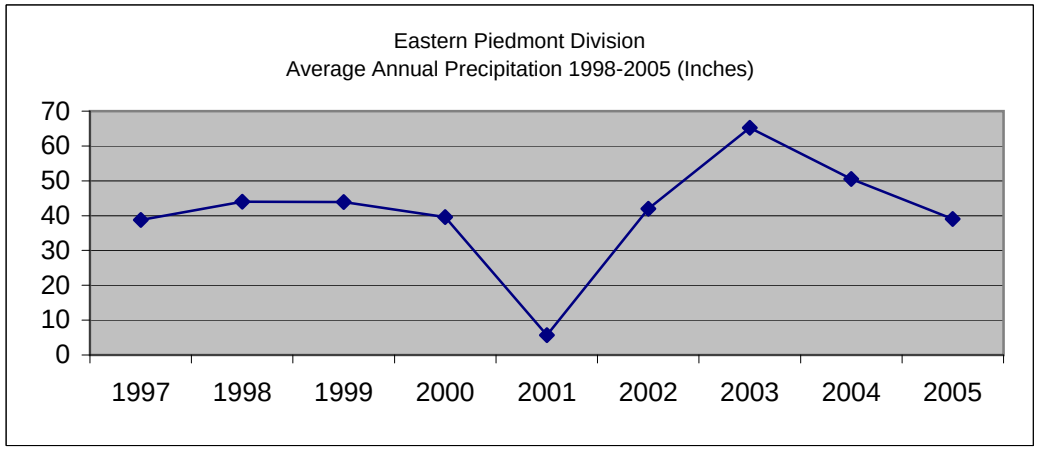
Annual	Precip	Departure	Precip	Departure	Precip	Departure	Precip	Departure	Precip	Departure	Precip	Departure	Precip	Departure
	Alberta	Alberta	Camp Pickett	Camp Pickett	Lawrenceville	Lawrenceville	Chase City	Chase City	Clarksville	Clarksville	Kerr Dam	Kerr Dam	Eastern Piedmont Div	
1995			43.62		40.48						39.51	-3.02	44.78	1.51
1996			60.7		55.91		49.62		45.76		46.97	4.44	54.09	10.82
1997			37.74		45.97		42.6		34.55		38.47	-4.06	38.74	-4.53
1998			50.52		49.68		44.06		38.99	-2.39	45.23	2.7	44.02	0.75
1999			48.59		62	17.59	52.08	8.82	41.15	-0.23	46.68	4.15	43.89	0.62
2000			44.1		39.4		34.16		44.32	2.94	37.89	-4.64	39.56	-3.71
2001			9.2		8.45	4.43	6.63	2.97	4.3	0.71	7.39	3.88	5.73	2.1
2002			42.16		44.97		57.43				41.27		42.01	-1.26
2003			73.1	26.59			61.7				61.49	17.41	65.2	21.93
2004	Alberta added mid y		54.55	8.04			45.65				44.55		50.55	7.28
2005	35.65												39.04	-5.96
2006														

Notes

M= Insufficient or partial data, M is appended to average and/or total values computed with 1-9 daily values missing. M appears alone if 10 or more daily values are missing. (8 or more for wind and evaporation).

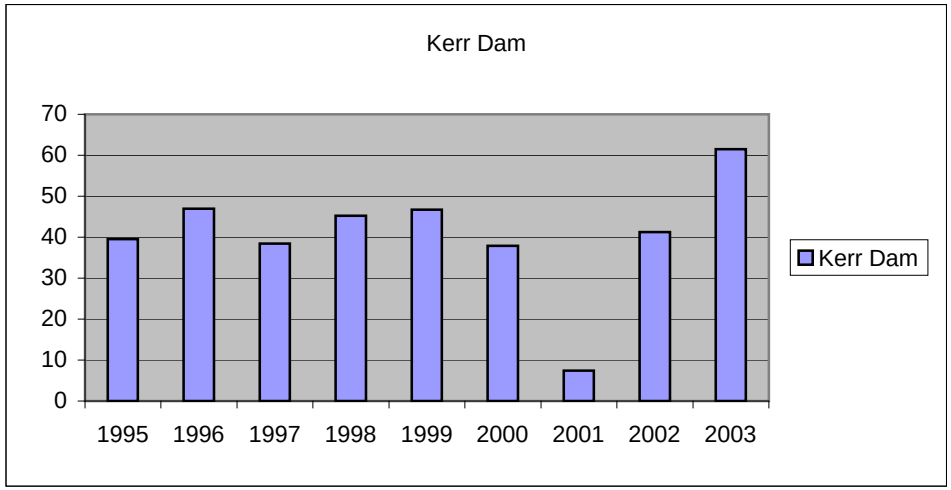
Blank= Data not recorded, determined unreliable by quality control checks, or not received in time for publication.

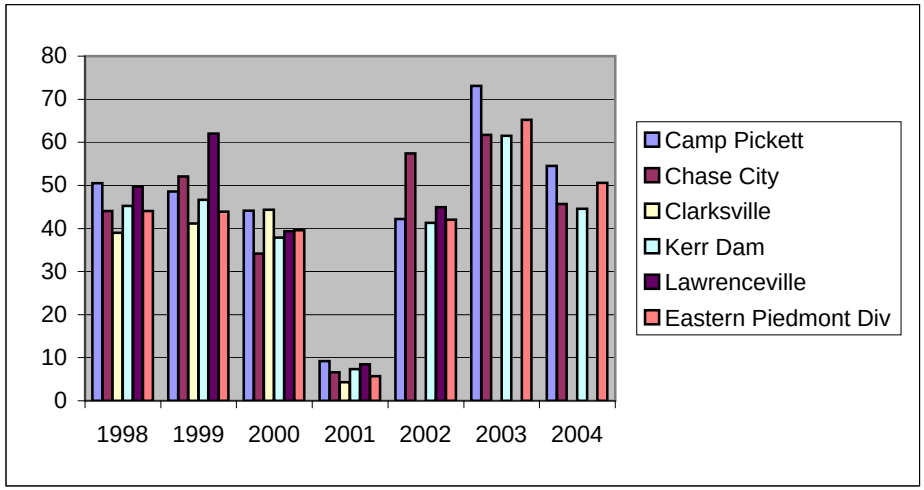
Normal= The average value of the meteorological element over a time perid. Effective 1 Jnauary 2002, the averaging period is 1971 to 2000. The normals for National Weather Service localiaties have been adjusted so as to be representative for the current observation site.



Source: National Oceanic Atmospheric Administration (NOAA) Climatological Data
https://ols.nndc.noaa.gov/

Existing Water Uses
Rainfall Data
Table 90A





Source: National Oceanic Atmospheric Administration (NOAA) Climatological Data
https://ols.nndc.noaa.gov/

Endangered Species

Table 90-B1

Federal Legal Status	State Legal Status	Global Rank	State Rank
LE--Listed Endangered	LE--Listed Endangered	G1-Critically Impaired	S1-Critically Impaired
LT-Listed Threatened	LT-Listed Threatened	G2-Imperiled	S2-Imperiled
PE-Proposed Endangered	PE-Proposed Endangered	G3-Vulnerable	S3-Vulnerable
PT-Proposed Threatened	PT-Proposed Threatened	G4-Apparently Secure	SH-Historical
C-Candidate	C-Candidate	G5-Secure	SR--Reported
SOC-Species of Concern (not a legal status)	SC-Special Concern	GH-Historical	SU-Unknown Extinct
		GU-Unknown Extinct	SX-Presumed Extinct
		GX-Presumed Extinct	

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	Last Year Observed
Brunswick						
BIRDS						
Aimophila aestivalis	Bachman's Sparrow	G3	S1B		LT	1996
Ammodramus henslowii	Henslow's Sparrow	G4	S1B		LT	1996
BIVALVIA (MUSSELS)						
Elliptio lanceolata	Yellow Lance	G2G3	S2S3	SOC	SC	2004
Fusconaia masoni	Atlantic Pigtoe	G2	S2	SOC	LT	2001
Lampsilis cariosa	Yellow Lampmussel	G3G4	S2		SC	1997
Lampsilis radiata	Eastern Lampmussel	G5	S2S3		SC	1997
FISH						
Percina rex	Roanoke Logperch	G1G2	S1S2	LE	LE	1999
VASCULAR PLANTS						
Rhus michauxii	Michaux's Sumac	G2	S1	LE	LT	2003
Mecklenburg						
BIRDS						
Haliaeetus leucocephalus	Bald Eagle	G5	S2S3B,S3N	LT,PDL	LT	2002
BIVALVIA (MUSSELS)						
Elliptio roanokensis	Roanoke Slabshell	G2G3	S1	SOC	SC	1998
Fusconaia masoni	Atlantic Pigtoe	G2	S2	SOC	LT	2002
Lampsilis cariosa	Yellow Lampmussel	G3G4	S2		SC	1995
Lampsilis radiata	Eastern Lampmussel	G5	S2S3		SC	1989
Lasmigona subviridis	Green Floater	G3	S2		LT	ND
FISH						
Etheostoma collis	Carolina Darter	G3	S2		LT	1987
Notropis alborus	Whitemouth Shiner	G4	S1		LT	2001
Percina rex	Roanoke Logperch	G1G2	S1S2	LE	LE	1995
VASCULAR PLANTS						
Isoetes hyemalis	A Quillwort	G2G3	S1?	SOC		1990

Source: VA Department of Game Inland Fisheries
12/2006

Fisheries	
Black Bass	Micropterus spp.
Striped Bass	Morone saxatilis
Supporting fisheries:	
Soft-finned schooling food fishes of shallow waters of northern waters: herrings; shad	Clupeid (pelgic)
Small carnivorous freshwater percoid fishes: crappies; black bass; bluegills; pumpkinseed; bream; etc.	Centrarchid (littoral)

Fish assemblages in all reservoirs are similar, with major fisheries for black basses Micropterus spp. and striped bass Morone saxatilis supported by clupeid (pelagic) and centrarchid (littoral) forage fishes; fisheries for ictalurids and centrarchid panfishes are substantial in several [of the Roanoke River] reservoirs.

Source: Tales of the Dammed: Reservoir Fisheries of the Roanoke River, John J. Ney (Department of Fisheries and Wildlife Sciences, Virginia Tech University, Blacksburg, VA 24061-0321 [http://www.roanokeriver.com/research/fisheries_of_the_roanoke.htm]*

Existing Resources 90.xls
Scenic Rivers
Table 90-B3

Scenic River	Designated Area	Date of Designation
Meherrin River	Length of river within Brunswick County	June 25, 2006
Staunton River	Halifax and Charlotte counties. The Staunton River is outside the water supply planning area but is located upstream and flows into the John Kerr Reservoir.	

Source: VA Department of Conservation Recreation
12/2006

Existing Resources 90.xls
Sites of Historic Significance
Table 90-B4

County	Property	USGS Quad Map	VLR	NRHP	NHL	File #	
Brunswick	Brunswick County Courthouse Square	Lawrenceville	11/19/1974	12/31/1974		251-0001	
Brunswick	Gholson Bridge	Powellton	11/15/1977	5/5/1978		012-0080	
Brunswick	Saint Paul's College	Lawrenceville	3/20/1979	6/27/1979		251-0003	
Brunswick	Hobson's Choice	Lawrenceville	11/20/1979	3/18/1980		012-0013	
Brunswick	Fort Christanna Archaeological Site (44BR2,3)	Powellton	11/20/1979	7/16/1980		012-0008	
Brunswick	Brick House (Woodlands)	White Plains	2/16/1982	7/8/1982		012-0038	
Brunswick	Rocky Run Methodist Church	Danieltown	4/28/1995	7/7/1995		012-0029	
Brunswick	Lawrenceville Historic District	Lawrenceville	9/15/1999	4/13/2000		251-5001	
Brunswick	Mason-Tillet House	Valentines	9/10/2003	1/16/2004		012-0093	
Brunswick	Rosenwald Schools in Virginia, MPD	Various	12/3/2003	8/12/2004		012-5041	
Brunswick	St. Paul's Chapel School	Alberta	12/3/2003	6/4/2004		012-5010	
Brunswick	Church Home for Aged, Infirm and Disabled Colored People	White Plains	6/16/2004	8/26/2004		012-0126	
Mecklenburg	Prestwould	Clarksville North	11/5/1968	10/1/1969	7/31/2003	058-0045	
Mecklenburg	Mecklenburg County Courthouse	Boydton	6/17/1975	7/17/1975		173-0006	
Mecklenburg	Boyd's Tavern	Boydton	2/17/1976	9/29/1976		173-0001	
Mecklenburg	Elm Hill	John H. Kerr Dam	5/15/1979	7/27/1979		058-0066	
Mecklenburg	Eureka	South Hill	7/19/1977	9/17/1980		058-0010	
Mecklenburg	Shadow Lawn	Chase City	12/15/1981	10/19/1982		186-5004	
Mecklenburg	Elm Hill Archaeological Site (44MC78)	John H. Kerr Dam	11/15/1983	3/14/1985		058-0084	
Mecklenburg	Red Fox Farm	Boydton	4/21/1993	6/10/1993		058-0131	
Mecklenburg	Long Grass	John H. Kerr Dam	4/28/1995	7/21/1995		058-0185	
Mecklenburg	Historic Archaeological Sites within the John H. Kerr Reservoir Area, MPD		6/19/1996	Pending		058-5085	
Mecklenburg	Occoneechee Plantation 44MC0318 (See MPS 058-5085)	Clarksville North	6/19/1996	Pending		058-0091	
Mecklenburg	Garrett Woods Complex #1, 44MC512 (See MPS 058-5085)	Clarksville South	6/19/1996	Pending		058-5001	
Mecklenburg	Garrett Woods Complex #2, 44MC513 (See MPS 058-5085)	Clarksville South	6/19/1996	Pending		058-5002	
Mecklenburg	Garrett Woods Complex #3, 44MC514 (See MPS 058-5085)	Clarksville South	6/19/1996	Pending		058-5003	
Mecklenburg	Cedar Grove, 44MC511 (See MPS 058-5085)	Tungsten	6/19/1996	Pending		058-5004	
Mecklenburg	Ivy Hill Plantation, 44MC196 (See MPS 058-5085)	Tungsten	6/19/1996	Pending		058-0088	
Mecklenburg	Rudd Branch Ridge--Complexes 1 & 2,44MC515 (See MPS 058-5085)	Boydton	6/19/1996	5/8/2003		058-5005	
Mecklenburg	Rudd Branch Ridge--Complexes 3 & 4, 44MC516 (See MPS 058-5085)	Boydton	6/19/1996	Pending		058-5006	
Mecklenburg	Newman Point, 44MC172 (See MPS 058-5085)	Boydton	6/19/1996	Pending		058-5007	
Mecklenburg	Glebe House, 44VN162 (See MPS 058-5085) located in North Carolina)	Townsville	6/19/1996	Pending		058-5008	
Mecklenburg	Clark Royster House	Clarksville North	6/19/1996	12/16/1996		192-0071	

Source: VA Department of Historic Resources
1/2011

Existing Resources 90.xls
Sites of Historic Significance
Table 90-B4

County	Property	USGS Quad Map	VLR	NRHP	NHL	File #	
Mecklenburg	Sunnyside	Clarksville South	6/19/1996	12/16/1996		192-0002	
Mecklenburg	Chase City High School	Chase City	9/17/1997	5/11/2000		186-0002	
Mecklenburg	Buffalo Springs Historic Archaeological District	Buffalo Springs	12/3/1997	6/12/1998		058-0005	
Mecklenburg	Judge Henry Wood House	Clarksville	6/16/1999	10/1/1999		192-0089	
Mecklenburg	Boydton Historic District	Boydton	3/14/2001	5/16/2002		173-5001	
Mecklenburg	Clarksville Historic District	Clarksville North-South	3/13/2002	6/6/2002		192-0121	
Mecklenburg	Colonial Theatre	South Hill	3/19/2003	5/19/2003		301-5054	
Mecklenburg	Patrick Robert "Parker" Sydnor Log Cabin	Clarksville North	6/6/2007	8/30/2007		058-5076	
Mecklenburg	La Crosse Hotel	La Crosse	6/19/2008	9/12/2008	250-5001-0003		
Mecklenburg	MacCallum More & Hudgins' House Historic District	Chase City	9/17/2009	9/10/2010		186-5020	
Mecklenburg	Cedar Grove	Clarksville South	6/17/2010	8/16/2010		058-0006	
VLR	Virginia Landmarks Register: state's official list of properties important to Virginia's history.						
NRHP	National Register of Historic Properties: official list of structures, sites, objects, and districts that embody the historical and cultural foundations of the nation.						
NHL	National Historic Landmark: nationally significant & possess **exceptional** value or quality in illustrating or interpreting the heritage of the United States.						

Source: VA Department of Historic Resources
1/2011

Southern Piedmont Granite Flatrock and Outcrop

This system consists of smooth, exfoliated outcrops of massive granite and related rocks in the eastern and central Piedmont of the southeastern United States, and rarely in the adjacent Atlantic Coastal Plain (confined to the fall-line where erosion has exposed underlying rocks). Examples occur from Virginia south to Alabama but are found most abundant in the upper Piedmont of Georgia. Some noteworthy examples in central Georgia include Stone Mountain, Panola Mountain, and Arabia Mountain in DeKalb, Henry, and Rockdale counties. Depending upon the location, examples may rise above the surrounding landscape by as much a 200 m, or lie flush with the surrounding land surface. The vegetation is a complex of small-patch communities of different species and structure occupying different microhabitats present on the outcrops, ranging from moss and lichens to herbs to shrubs and trees. In some areas, these microhabitats include solution pits or depressions that retain water and form a distinctive wetland community. This outcrop system supports a relatively high degree of endemic plants.

http://www.natureserve.org/explorer/servlet/NatureServe?searchSystemUid=ELEMENT_GLOBAL.2.723174

A flatrock community is located outside Gasburg in Brunswick County.

Piedmont Hardpan Forests

These deciduous and mixed forests occupy gentle to flat Piedmont uplands and ancient, never-flooded stream terraces with impermeable clay subsoils. Piedmont Hardpan Forests occur from Virginia south to Georgia. Sites are usually underlain either by mafic rocks such as diabase or by acidic slates. Surficial soils are silt or clay loams, with an abrupt transition to heavy, plastic clay hardpans at depths of 23 to 38 cm (9 to 15 in). These shrink-swell clay soils pond water for brief or, at a few sites, prolonged periods during rainy weather, but tend to be very hard and dry during significant portions of the growing season. Post oak (*Quercus stellata*) is the most typical overstory tree, growing in nearly pure stands or in variable mixtures with pignut hickory (*Carya glabra*), southern shagbark hickory (*Carya carolinae-septentrionalis* , only in Halifax County), white oak (*Quercus alba*), blackjack oak (*Quercus marilandica*), Virginia pine (*Pinus virginiana*), and white ash (*Fraxinus americana*). Virginia pine increases following cutting and may dominate on heavily disturbed, clear-cut sites. Winged elm (*Ulmus alata*), sweetgum (*Liquidambar styraciflua*), and eastern red cedar (*Juniperus virginiana* var. *virginiana*) are characteristic u

Stands in which water ponds for longer periods contain peculiar mixtures of upland and wetland species, but their hydrological status is problematic and they are treated here as communities of the Terrestrial System. In these periodically wet variants, species such as willow oak (*Quercus phellos*), sweetgum (*Liquidambar styraciflua*), deciduous holly (*Ilex decidua*), hairy highbush blueberry (*Vaccinium fuscatum*), St. Peter's-wort (*Hypericum crux-andriae*), and beakrushes (*Rhynchospora* spp.) are intermingled with the xerophytic species listed above.

Piedmont hardpan forests are scattered throughout the Piedmont in specialized soil environments and are considered uncommon to rare in Virginia.

Reference: Fleming (2002a). *--http://www.state.va.us/dcr/dnh/ncTIIIp.htm*

Piedmont savanna--Loblolly pine

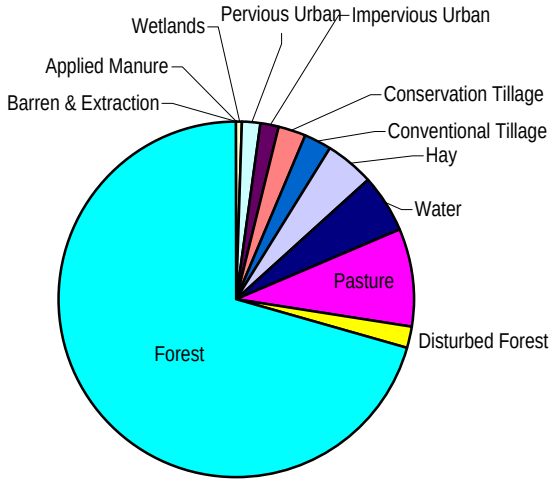
Most of the savannah in Virginia is pine savannah. A savannah is open, ‘park-like’, mature or overmature forest with a very open understory, free or virtually free of shrubby layers or understory, but with healthy grass/forb layers. These conditions are maintained by fire, which prevents deciduous shrub and tree invasion. In Virginia, savannah occurs largely in the Mid-Atlantic Coastal Plain, and the southeastern portion of the Piedmont.

DCR has indicated a need to protect the Piedmont hardpan forest and Piedmont savanna natural communities within Southside Virginia.

In 2008 there were no private conservation easements in either county.

Existing Resources 90.xls
Land Use
Table 90-B8

Land Use	**Brunswick**	**Mecklenburg**	**Lake Country**	**Lake Country**
	(in acres)	*(in acres)*	*(in acres)*	*(in acres)*
Barren & Extraction	0	0	0	0.000%
Applied Manure	23	9	32	0.004%
Wetlands	2,802	1,932	4,734	0.592%
Pervious Urban	6,238	6,319	12,557	1.571%
Impervious Urban	6,699	6,272	12,971	1.623%
Conservation Tillage	6,881	13,552	20,433	2.557%
Conventional Tillage	7,401	13,153	20,554	2.572%
Hay	10,163	25,347	35,510	4.443%
Water	3,755	37,560	41,315	5.169%
Pasture	18,570	54,142	72,712	9.098%
Disturbed Forest	5,624	8,605	14,229	1.780%
Forest	296,317	267,844	564,161	70.590%
Total Acres	364,473	434,735	799,208	



Source: Virginia Non Point Source (NPS) Assessment 2006
http://192.206.31.52/cfprog/dswc/lualist06.cfm

Water Body	Drainage Basin	Location	Size (miles)	Assessment Category	Impairments	Source	Assessment Unit
Allen Creek	Roanoke River	Layton Creek downstream to Cox Creek	8.97	5A	Escherichia coli; Fecal Coliform	Unknown	VAC-L78R-ALN03A04
Aaron's Creek	Roanoke River	VA/NC border to Dan River	14.03	5A	Fecal Coliform	Unknown	VAC-L73R_AAR01A00
Beaver Pond Creek	Roanoke River	Beaver Pond Creek from its headwaters to Kerr Reservoir	5.03	5A	Fecal Coliform	Unknown	VAC-L75R-BPC01A04
Briery Branch	Roanoke River	Headwaters to mouth	4	5A	Fecal Coliform	Animal Feeding Operations (NPS); Unknown	VAP-K05R_BRY01A02
Butcher Creek	Roanoke River	Headwaters to Kerr Reservoir	12.49	5A	Fecal Coliform	Unknown	VAC-L75R_BHB01A98
Cox Creek	Roanoke River	Headwater to Allen Creek	10.51	5A	Dissoved Oxygen; pH	Unknown	VAC-L78R_COX01A04
Flat Creek	Roanoke River	South Hill STP discharge to Roanoke River	7.93	5A	Benthic-Macroinvertebrate Bioassessments (Streams); Escherichia coli; Fecal Coliform	Clean sediments; Livestock; Unspecified Domestic Waste; Wastes from pets; wildlife other than waterfowl	VAC-L79R_FLT02A96
Great Creek	Roanoke River	Headwaters to Lake Gaston	6.91	5A	Escherichia coli; Fecal Coliform	Unknown	VAC-L80R_GRT01A00
Kerr Reservoir***	Roanoke River	Kerr R. from backwaters to Rt. 58 crossing in Meck., excludes Dan R, Buffalo Cr, Bluestone Cr.[1]	4350.11 Ac.	5A	Dissoved Oxygen (DO); PCB in Fish Tissue	Unknown	VAC-L75L_ROA05L98
Lake Gaston	Roanoke River	Lower Gaston --Smith Cr confluence dwonstream to VA/NC line	3,085.62 Ac.	5A	Dissoved Oxygen; PCB in Fish Tissue	Natural conditions; Unknown	VAC-L80L_ROA08A04
Lake Gordon	Roanoke River	On Miles Creek	111.84 Ac.	5A	DO	Unknown	VAC-L79L_MES01L00
Little Bluestone Creek	Roanoke River	Fork upstream of Rt 696 to Kerr Res.	9.43	5A	E coli; Fecal Coliform	Unknown	VAC-L77R_LNE01A98
Poplar Creek	Roanoke River	Main Creek to Lake Gaston	3.41	5A	pH	Unknown	VAC-L81R_POB01A00
Roanoke River	Roanoke River	Upper portion of Lake Gaston--Rt. 1 to confluence of Smith Creek	1,379.57 Ac.	5A	DO; PCB in Fish Tissue	Impoundment; Unknown	VAC-L79L_ROA07A98
Brunswick Lake (County Pond)	Chowan River	VDIF lake on Reedy Creek	150 Ac.	5A	DO; pH	Changes in ordinary stratification & bottom water hypoxia/anoxia; Unknown	VAP-K08L_RDC01A98

Water Body	Drainage Basin	Location	Size (miles)	Assessment Category	Impairments	Source	Assessment Unit
Fort Pickett Reservoir	Chowan River	Fort Pickett Reservoir	318.95 Ac.	5A	DO	Unknown	VAC-K16L_NTW01L04
Genito Creek	Chowan River	Headwaters to mouth	7.92	5A	E coli	Unknown	VAP-K05R_GTO01A94
Great Creek Reservoir	Chowan River	Reservoir on Great Creek	305 Ac.	4C (TDML not required)	DO	Natural conditions	VAP-K06L_GTC03B00
Great Creek	Chowan River	Upstream of Reservoir	2.75	5A	E coli; Fecal Coliform	Unknown	VAP-K06R_GTC02B00
Great Creek	Chowan River	Reservoir dam to Lawrenceville PWS intake	2.72	5A	Fecal Coliform	Unknown	VAP-K06R_GTC04B00
Great Creek	Chowan River	Lawrenceville PWS intake to its mouth	7.31	5A	Fecal Coliform	Unknown	VAP-K06R_GTC05B00
Great Creek	Chowan River	Dixon Millpond dam uptstream extent of PWS Section 5a-3b. Expanded in 2006 cycle.	9.07	5A	E coli; Fecal Coliform	Unknown	VAP-K06R_GTC01B00
Meherrin River	Chowan River	Taylors Creek to Hicks Creek	6.93	5A	E coli; Fecal Coliform	Unknown	VAP-K05R_MHN01B98
Meherrin River	Chowan River	Hicks Creek to Lawrenceville PWS intake	5.01	5A	E coli; Fecal Coliform	Unknown	VAP-K05R_MHN02B98
Meherrin River	Chowan River	Lawrenceville PWS intake to Reedy Creek	14.14	5A	E coli; Fecal Coliform	Unknown	VAP-K05R_MHN03B98
Nottoway River	Chowan River	Beaverpond Creek to Sturgeon Creek	11.7	5A	Fecal Coliform	Unknown	VAP-K17R_NTW01A00
Rattlesnake Creek	Chowan River	Edwards Creek to Fontaine Creek	8.92	5A	Fecal Coliform; pH	Unknown	VAP-K10R_RSK01A00
Roses Creek	Chowan River	Alberta STP to mouth at Great Cr.	9.85	4A	E coli; Fecal Coliform	Municipal point source discharges Non-Point Source	VAP-K07R_RSE01A96
Sturgeon Creek	Chowan River	Lloyds Run to Nottoway River	8.06	5A	pH	Unknown	VAP-K18R_STG01A98
COMMENTS:							
Kerr Reservoir***		[1] VDH advisory in effect in VA from confluence of Dan R. and Roanoke R to Kerr Dam, including Eastland Creek & Nutbush Cr.					

VPDES_NM	NAME	DISCHARGE LOCATION	DRAINAGE BASIN	MAJ_MIN	MUN_IND	FLOW	LAT	LONG
VA0026816	Alberta Wastewater Treatment Plant	Roses Creek		N	M		36.84222	-77.90194
VA0026247	Boydton WWTP			N	M		36.66889	-78.37889
VA0027022	Brunswick County - Meherrin Powellton Elementary			N	M		36.66889	-77.79722
VA0027014	Brunswick County - Sturgeon Elementary School			N	M		36.80778	-77.77083
VA0076881	Chase City Regional WWTP			N	M		36.79667	-78.44222
VA0020168	Clarksville WWTP			N	M		36.62083	-78.54861
VA0023345	DOC Baskerville Correctional Unit			N	M		36.71806	-78.29917
VA0020354	Lawrenceville Wastewater Treatment Plant	Roses Creek		M	M		36.74694	-77.83694
VA0068501	Longwood Sand Filter			N	M		36.58083	-78.55053
VA0081787	Longwood Sand Filter South			N	M		36.57703	-78.54947
VA0021849	Mecklenburg Co Schls - Park View Middle School			N	M		36.68944	-78.1975
VA0021768	Mecklenburg Co Schools - Parkview High School			N	M		36.70278	-78.18361
VA0021776	Mecklenburg Co Schools Bluestone High School			N	M		36.70528	-78.49694
VA0021857	Mecklenburg Co Schools Bluestone Middle School			N	M		36.70889	-78.54167
VA0062421	Newton Mobile Court Inc			N	M		36.63111	-78.63556
VA0078654	Nine O Three Inc WWTP			N	M	0.02	36.59694	-78.1575
VA0028291	Nottoway Motel and Restaurant			N	M		36.945	-77.7325
VA0062316	Pine Grove Park STP			N	M		36.59556	-78.52944
VA0028029	River Ridge Association Inc			N	M		36.58167	-78.14611
VA0088919	Roanoke River Service Authority WTP	Flat Creek		N	I		36.62139	-78.21667
VA0063614	Simmons Terminal and Restaurant			N	M		36.59778	-78.15222
VA0029149	South Hill WTP			N	I		36.69667	-78.13167
VA0086762	US Army - North Bend Park WWTP			N	M		36.59889	-78.30889
VA0067148	US Army Corps of Engineers - Rudds Creek			N	M		36.65883	-78.44211
VA0074098	US Army Corps of Engineers - Rudds Creek So WWTP			N	M		36.65333	-78.4425
VA0061379	VDOT Interstate 85 Brunswick Rest Area			N	M		36.86667	-77.83528
VA0072427	VDOT Interstate 85 Mecklenburg Rest Area			N	M		36.55139	-78.18194

APPENDIX D – PROJECTED WATER DEMAND

Table 100A-B: Regional Projection Summary
Brunswick, Mecklenburg Population and Water Demand Projections

	ESTIMATED POPULATION					
	2000	**2005**	**2010**	**2020**	**2030**	**2040**
Brunswick County [1]	***18,419***	***18,222***	**18,263**	**18,258**	**18,258**	**18,200**
Town of Alberta	306	303				
Town of Brodnax	317	300				
Town of Lawrenceville	1,275	1,157				
Mecklenburg County [1]	***32,380***	***32,214***	**32,369**	**32,511**	**32,755**	**32,849**
Town of Boydton	454	466				
Town of Chase City	2,457	2,382				
Town of Clarksville	1,329	1,289				
Town of La Crosse	618	604				
Town of South Hill	4,403	4,607				
Lake Country Planning Area	***50,799***	***50,436***	***50,632***	***50,769***	***51,013***	***51,049***

[1] County Population includes towns

VEC projections do not separate towns and therefore the towns are assumed to grow at the same rate.

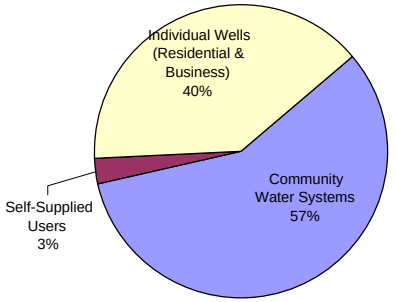
Brunswick County Population not in CWS	11,934	11,942	12,038	12,135	12,232	12,331
Mecklenburg County Population not in CWS	18,857	18,883	19,035	19,188	19,342	19,497

	REGIONAL WATER DEMAND (MGD)				
	Existing	**Projected**			
	2005	**2010**	**2020**	**2030**	**2040**
Community Water Systems					
Lawrenceville Service Area	0.768	0.769	0.775	0.781	0.787
Chase City Service Area	0.189	0.189	0.191	0.192	0.194
Clarksville Water Service Area	0.251	0.251	0.253	0.255	0.257
Roanoke River Service Area	1.219	1.221	1.230	1.240	1.250
Future Industrial User			1.200	1.200	1.200
Private CWS	0.200	0.200	0.202	0.204	0.205
Self-Supplied Users					
Non-Agricultural in CWS	0.12	0.12	0.12	0.12	0.12
Agricultural (1 farm using GW) outside CWS	0.06	0.06	0.06	0.06	0.06
Individual Wells					
Brunswick County					
Residences & Businesses	1.014	1.015	1.023	1.031	1.040
Mecklenburg County					
Residences & Businesses	1.603	1.605	1.618	1.631	1.644
SUBTOTAL REGIONAL DEMAND	**5.424**	**5.430**	**6.672**	**6.714**	**6.757**
Self-Supplied Users--(non-Consumptive)					
Non-Agricultural (2)	4.45	4.45	4.45	4.45	4.45
TOTAL REGIONAL DEMAND	**9.874**	**9.880**	**11.122**	**11.164**	**11.207**
CWS Outside the Planning Area (Permitted Capacity)	80	80	80	80	80
TOTAL RESOURCE DEMAND	**89.874**	**89.880**	**91.122**	**91.164**	**91.207**

2005 Regional Water Demand Sectors	**%**
Community Water Systems	48
Self-Supplied Users	3
Individual Wells (Residential & Business)	48

2040 Regional Water Demand Sectors	**%**
Community Water Systems	58
Self-Supplied Users	3
Individual Wells (Residential & Business)	40

Chart: 2005 - 2040 Regional Water Demand by Water Use Sector



Notes:

1) Private CWS include the 23 non-municipal water systems in the planning area.

2) Per VDEQ's water withdrawal reporting database, there were 3 non-consumptive non-agricultural facilities within the region that withdraw greater than 300,000 gallons of water per month. One "user" is a hydropower plant and since this water does not leave the stream its use has not been included in demand calculations. Although the other two non agricultural facilities are also non-consumptive, they were included but this use is assumed to remain constant. Additionally, very limited information was available for the agricultural users of more than 300,000 gallons per month. Therefore, the agricultural projections are a minimum demand estimate and are assumed to remain constant through the projection period.

3) Self-supplied Brunswick and Mecklenburg County residential and business estimated water demand based on water use factor of 85 gpcd, which was based on other groundwater residential well systems in the counties.

4) A future industrial user that was to use 1.2 MGD and be a part of the RRSA has postponed location plans; therefore this usage was included for a future decade (2020).

5) Two Community Water Systems have permits to withdraw up to 80 MGD from the Roanoke River System--KLRWS (20 MGD) & VA Beach (60 MGD)

Table 100A: Brunswick Population Projections

sources: Weldon Cooper & VEC

http://www.coopercenter.org/demographics/virginia-population-estimates (accessed February 8, 2011)

http://www.vawc.virginia.gov/gsipub/index.asp?docid=342 (accessed February 8, 2011)

Year	Population	% Change from Previous Decade	Notes
2000	18419		WC
2005	18222		WC
2010	18263	-0.8	VEC
2020	18258	0.0	VEC
2030	18258	0.0	VEC
2040	18200	-0.3	Extrapolated

18200 extrapolated 2040 popn based on Brunswick_popn trend graph

-1.2 Percent Population Change 2000-2040

-0.03 Average Annual Percent Population Change 2000-2040

Adjusted Brunswick Population Projections

To subtract out town populations

Year	Brunswick Population	Alberta Population	Brodnax Population	Lawrenceville Population	Adjusted Brunswick Population
2000	18419	317	317	1275	16510
2005	18222	297	296	11934	5695
2010	18263	297	296	11942	5727
2020	18258	300	299	12038	5622
2030	18258	302	301	12135	5520
2040	18200	304	303	12232	5360

Graph 1: Brunswick County Population Trend, 2005 - 2040

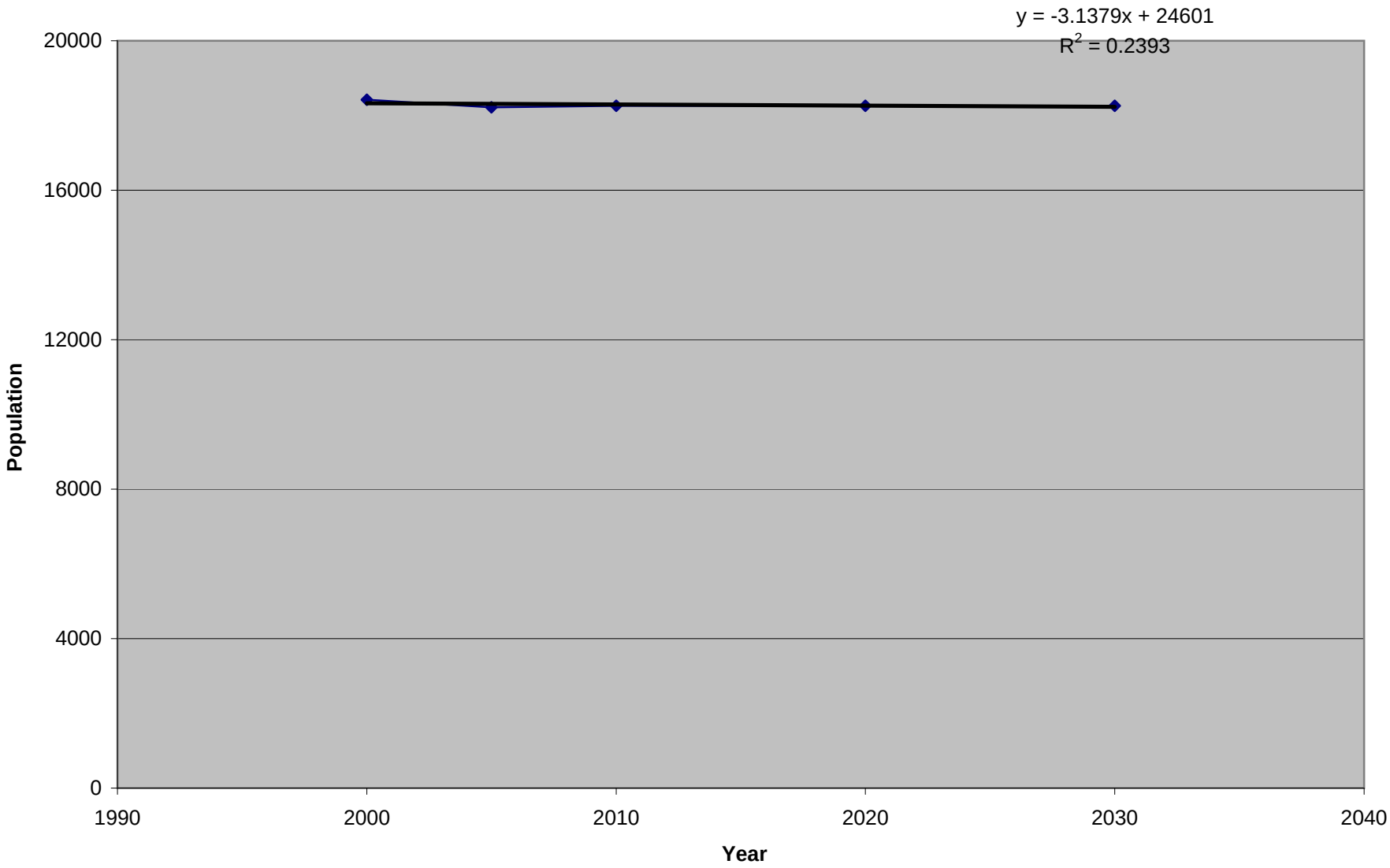


Table 100 D-i: Brunswick County Community Service Area Population Projections

Lawrenceville & Alberta Service Area

Assumption: Town population growth will be consistent with VEC Brunswick County projected population trends for 2000-2040 and will decrease by 0.03% per year. CWS areas encompass more than town boundaries. CWS 2005 population estimates are based on connections and average household size. Population projections are expected to reflect the town and county growth rates.

Lawrenceville CWS Population

Year	Population	Projected Decrease of 0.03%	Resultant Population
		(population X -0.0003)	
2005	**5606**	-2	5604
2006	5604	-2	5603
2007	5603	-2	5601
2008	5601	4	5605
2009	5605	4	5610
2010	**5610**	4	5614
2011	5614	4	5619
2012	5619	4	5623
2013	5623	4	5628
2014	5628	5	5632
2015	5632	5	5637
2016	5637	5	5641
2017	5641	5	5646
2018	5646	5	5650
2019	5650	5	5655
2020	**5655**	5	5659
2021	5659	5	5664
2022	5664	5	5669
2023	5669	5	5673
2024	5673	5	5678
2025	5678	5	5682
2026	5682	5	5687
2027	5687	5	5691
2028	5691	5	5696
2029	5696	5	5700
2030	**5700**	5	5705
2031	5705	5	5709
2032	5709	5	5714
2033	5714	5	5719
2034	5719	5	5723
2035	5723	5	5728
2036	5728	5	5732
2037	5732	5	5737
2038	5737	5	5742
2039	5742	5	5746
2040	**5746**	5	5751
2041	5751	5	5755
2042	5755	5	5760
2043	5760	5	5765
2044	5765	5	5769
2045	5769	5	5774
2046	5774	5	5778
2047	5778	5	5783
2048	5783	5	5788
2049	5788	5	5792
2050	**5792**	5	5797

Recent Town Population Estimate Data from Weldon Cooper

http://www.coopercenter.org/demographics/virginia-population-estimates

	Alberta	Brodnax	Lawrenceville
2000	318	317	1275
2001	314	312	1260
2002	308	307	1243
2003	304	304	1167
2004	301	301	1156
2005	**297**	**296**	**1351**
2006	297	296	1304
2007	293	292	1353
2008	290	289	1345
2009	285	285	1330

Table 100A: Mecklenburg Population Projections

sources: Weldon Cooper & VEC

http://www.coopercenter.org/demographics/virginia-population-estimates (accessed February 8, 2011)

http://www.vawc.virginia.gov/gsipub/index.asp?docid=342 (accessed February 8, 2011)

Year	Population	% Change from Previous Decade	Notes
2000	32380		WC
2005	32214		WC
2010	32369	0.0	VEC
2020	32511	0.4	VEC
2030	32755	0.8	VEC
2040	32849	0.3	Extrapolated

32849 extrapolated 2040 popn based on Mecklenburg_popn trend graph

1.4 Percent Population Change 2000-2040

0.04 Average Annual Percent Population Change 2000-2040

Adjusted Brunswick Population Projections

To subtract out town populations

Year	Mecklenburg Population	Boydton Population	Chase City Population	Clarksville Population	La Crosse Population	South Hill Population	Adjusted Mecklenburg Population
2000	32380	318	2457	1329	618	4403	23255
2005	32214	297	2331	1260	593	4521	23212
2010	32369	297	2334	1262	593	4524	23359
2020	32511	300	2353	1272	598	4560	23428
2030	32755	302	2372	1282	602	4597	23599
2040	32849	305	2391	1292	607	4634	23620

Graph 1: Mecklenburg County Population Trend, 2005 - 2040

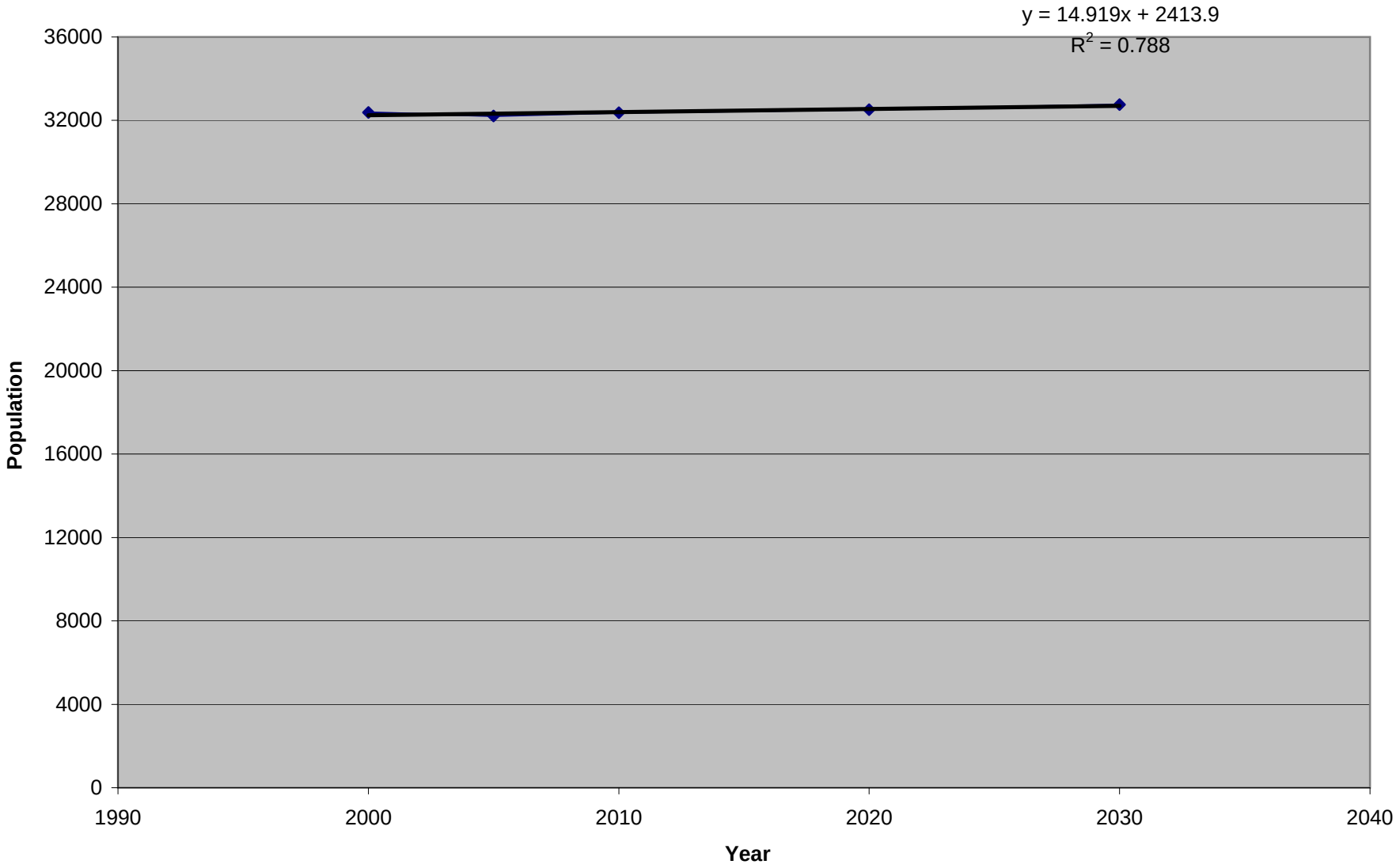


Table D-i: Mecklenburg Community Water Service Area (CWS) Population Projections

Assumption: Town population growth will be consistent with VEC Mecklenburg County projected population trends for 2000-2040 and will increase by 0.04% per year. CWS areas encompass more than town boundaries. CWS 2005 population estimates are based on connections and average household size. Population projections are expected to reflect the town and county growth rates.

RRSA				Chase City				Clarksville				Private				Population on Wells County (Population - CWS)			
Year	Population	Projected Increase of 0.04% (population X 0.0004)	Resultant Population	Year	Population	Projected Increase of 0.04% (population X 0.0004)	Resultant Population	Year	Population	Projected Increase of 0.04% (population X 0.0004)	Resultant Population	Year	Population	Projected Increase of 0.04% (population X 0.0004)	Resultant Population	Year	Population	Projected Increase of 0.04% (population X 0.0004)	Resultant Population
2005	**8126**	3	8129	**2005**	**2331**	1	2332	**2005**	**1500**	1	1501	**2005**	**2171**	1	2172	**2005**	**18857**	8	18865
2006	8129	-2	8127	2006	2332	-1	2331	2006	1501	0	1500	2006	2172	-1	2171	2006	18865	-6	18859
2007	8127	-2	8124	2007	2331	-1	2331	2007	1500	0	1500	2007	2171	-1	2171	2007	18859	-6	18853
2008	8124	6	8131	2008	2331	2	2332	2008	1500	1	1501	2008	2171	2	2172	2008	18853	15	18868
2009	8131	7	8137	2009	2332	2	2334	2009	1501	1	1502	2009	2172	2	2174	2009	18868	15	18883
2010	**8137**	7	8144	**2010**	**2334**	2	2336	**2010**	**1502**	1	1503	**2010**	**2174**	2	2176	**2010**	**18883**	15	18899
2011	8144	7	8150	2011	2336	2	2338	2011	1503	1	1505	2011	2176	2	2178	2011	18899	15	18914
2012	8150	7	8157	2012	2338	2	2340	2012	1505	1	1506	2012	2178	2	2179	2012	18914	15	18929
2013	8157	7	8163	2013	2340	2	2342	2013	1506	1	1507	2013	2179	2	2181	2013	18929	15	18944
2014	8163	7	8170	2014	2342	2	2344	2014	1507	1	1508	2014	2181	2	2183	2014	18944	15	18959
2015	8170	7	8177	2015	2344	2	2345	2015	1508	1	1509	2015	2183	2	2184	2015	18959	15	18974
2016	8177	7	8183	2016	2345	2	2347	2016	1509	1	1511	2016	2184	2	2186	2016	18974	15	18989
2017	8183	7	8190	2017	2347	2	2349	2017	1511	1	1512	2017	2186	2	2188	2017	18989	15	19005
2018	8190	7	8196	2018	2349	2	2351	2018	1512	1	1513	2018	2188	2	2190	2018	19005	15	19020
2019	8196	7	8203	2019	2351	2	2353	2019	1513	1	1514	2019	2190	2	2191	2019	19020	15	19035
2020	**8203**	7	8209	**2020**	**2353**	2	2355	**2020**	**1514**	1	1515	**2020**	**2191**	2	2193	**2020**	**19035**	15	19050
2021	8209	7	8216	2021	2355	2	2357	2021	1515	1	1517	2021	2193	2	2195	2021	19050	15	19065
2022	8216	7	8222	2022	2357	2	2359	2022	1517	1	1518	2022	2195	2	2197	2022	19065	15	19081
2023	8222	7	8229	2023	2359	2	2361	2023	1518	1	1519	2023	2197	2	2199	2023	19081	15	19096
2024	8229	7	8236	2024	2361	2	2362	2024	1519	1	1520	2024	2199	2	2200	2024	19096	15	19111
2025	8236	7	8242	2025	2362	2	2364	2025	1520	1	1521	2025	2200	2	2202	2025	19111	15	19127
2026	8242	7	8249	2026	2364	2	2366	2026	1521	1	1523	2026	2202	2	2204	2026	19127	15	19142
2027	8249	7	8255	2027	2366	2	2368	2027	1523	1	1524	2027	2204	2	2206	2027	19142	15	19157
2028	8255	7	8262	2028	2368	2	2370	2028	1524	1	1525	2028	2206	2	2207	2028	19157	15	19173
2029	8262	7	8269	2029	2370	2	2372	2029	1525	1	1526	2029	2207	2	2209	2029	19173	15	19188
2030	**8269**	7	8275	**2030**	**2372**	2	2374	**2030**	**1526**	1	1528	**2030**	**2209**	2	2211	**2030**	**19188**	15	19203
2031	8275	7	8282	2031	2374	2	2376	2031	1528	1	1529	2031	2211	2	2213	2031	19203	15	19219
2032	8282	7	8288	2032	2376	2	2378	2032	1529	1	1530	2032	2213	2	2214	2032	19219	15	19234
2033	8288	7	8295	2033	2378	2	2379	2033	1530	1	1531	2033	2214	2	2216	2033	19234	15	19249
2034	8295	7	8302	2034	2379	2	2381	2034	1531	1	1532	2034	2216	2	2218	2034	19249	15	19265
2035	8302	7	8308	2035	2381	2	2383	2035	1532	1	1534	2035	2218	2	2220	2035	19265	15	19280
2036	8308	7	8315	2036	2383	2	2385	2036	1534	1	1535	2036	2220	2	2221	2036	19280	15	19296
2037	8315	7	8322	2037	2385	2	2387	2037	1535	1	1536	2037	2221	2	2223	2037	19296	15	19311
2038	8322	7	8328	2038	2387	2	2389	2038	1536	1	1537	2038	2223	2	2225	2038	19311	15	19326
2039	8328	7	8335	2039	2389	2	2391	2039	1537	1	1539	2039	2225	2	2227	2039	19326	15	19342
2040	**8335**	7	8342	**2040**	**2391**	2	2393	**2040**	**1539**	1	1540	**2040**	**2227**	2	2229	**2040**	**19342**	15	19357
2041	8342	7	8348	2041	2393	2	2395	2041	1540	1	1541	2041	2229	2	2230	2041	19357	15	19373
2042	8348	7	8355	2042	2395	2	2397	2042	1541	1	1542	2042	2230	2	2232	2042	19373	15	19388
2043	8355	7	8362	2043	2397	2	2399	2043	1542	1	1544	2043	2232	2	2234	2043	19388	16	19404
2044	8362	7	8368	2044	2399	2	2401	2044	1544	1	1545	2044	2234	2	2236	2044	19404	16	19419
2045	8368	7	8375	2045	2401	2	2402	2045	1545	1	1546	2045	2236	2	2238	2045	19419	16	19435
2046	8375	7	8382	2046	2402	2	2404	2046	1546	1	1547	2046	2238	2	2239	2046	19435	16	19450
2047	8382	7	8388	2047	2404	2	2406	2047	1547	1	1548	2047	2239	2	2241	2047	19450	16	19466
2048	8388	7	8395	2048	2406	2	2408	2048	1548	1	1550	2048	2241	2	2243	2048	19466	16	19482
2049	8395	7	8402	2049	2408	2	2410	2049	1550	1	1551	2049	2243	2	2245	2049	19482	16	19497
2050	**8402**	7	8409	**2050**	**2410**	2	2412	**2050**	**1551**	1	1552	**2050**	**2245**	2	2247	**2050**	**19497**	16	19513

Recent Town Population Estimate Data from Weldon Cooper

http://www.coopercenter.org/demographics/virginia-population-estima (accessed February 8, 2011)

	Boydton	Chase City	Clarksville	La Crosse	South Hill
2000	318	2457	1329	618	4403
2001	314	2413	1304	609	4621
2002	308	2397	1295	606	4592
2003	304	2376	1284	602	4560
2004	301	2356	1274	598	4523
2005	**297**	**2331**	**1260**	**592**	**4521**
2006	297	2315	1252	589	4537
2007	293	2312	1251	588	4534
2008	290	2305	1247	587	4530
2009	285	2294	1242	584	4515

Table D1: Lawrenceville System Projected Water Demand (4d.i-v)

Projected Annual Average & Peak Demand

Year	Projected System Population	Water Use Factor (gpcd)	Resultant Demand (gpd)	Estimated Annual Average Water Demand (MGD)	Estimated Peak Water Demand (MGD)	VDH Permitted System Capacity (MGD)	Stream Safe Yield (MGD)
2005	5606	137	768022	0.768	1.152	2	3.23
2010	5610	137	768570	0.769	1.153	2	3.23
2020	5655	137	774735	0.775	1.162	2	3.23
2030	5700	137	780900	0.781	1.171	2	3.23
2040	5746	137	787202	0.787	1.181	2	3.23

Notes: *Per Capita Method: estimated water demand = projected population X gpcd water use factor*

2005 Per Capita Water Use Factor

2005 Water Withdrawal Peaking Factor

2005 Water Use (MGD)	*2005 Per Capita Water Use (MGpcd)*	*2005 Per Capita Water Use (gpcd)*		*2005 Average Day Withdrawal (MGD)*	*2005 Peak Day Withdrawal (MGD)*	*Peak Day / Avg Day (MGD)*
0.77	0.000137353	**137**	Annual Ave.	0.770	1.180	1.53
			Avg 2007 Water Withdrawal Peaking Factor			**1.53**

Projected Disaggregated Demand

2005 Dissagregated Water Use Data

Residential (GPD)	*Commercial (GPD)*	*Industrial (GPD)*	*Schools/ Institutional (GPD)*	*Prisons (GPD)*	*Processing or otherwise Unaccounted for Losses (GPD)*	*Water Sold (GPD)*	*Total*	
4.24	1.95	0.00	1.52	9.56	4.37	1.52	23.17	Monthly Use
139397.26	64109.59	0.00	49989.60	314386.03	143736.99	49972.60	761592.07	
18.3	**8.4**	**0.0**	**6.6**	**41.3**	**18.9**	**6.6**	**100.0**	**Categorical Water Use Percent**

	Projected Dissagreggated Demand (MGD)							
Year	**Residential**	**Commercial**	**Industrial**	**Schools / Institutional**	**Prisons**	**Production Processes /Unaccounted for Losses**	**Water Sold**	**Total**
2005	0.141	0.065	N/A	0.051	0.317	0.145	0.051	0.769
2010	0.141	0.065	N/A	0.051	0.317	0.145	0.051	0.769
2020	0.142	0.065	N/A	0.051	0.320	0.146	0.051	0.776
2030	0.143	0.066	N/A	0.052	0.323	0.148	0.052	0.782
2040	0.144	0.066	N/A	0.052	0.325	0.149	0.052	0.788

Notes: *Assumed categorical water use percentages would remain consistent though the projection period.*

Graph 2: Lawrenceville System Average Annual Demand, Peak Demand, Source Capacity & Safe Yield (MGD), 2005 - 2040

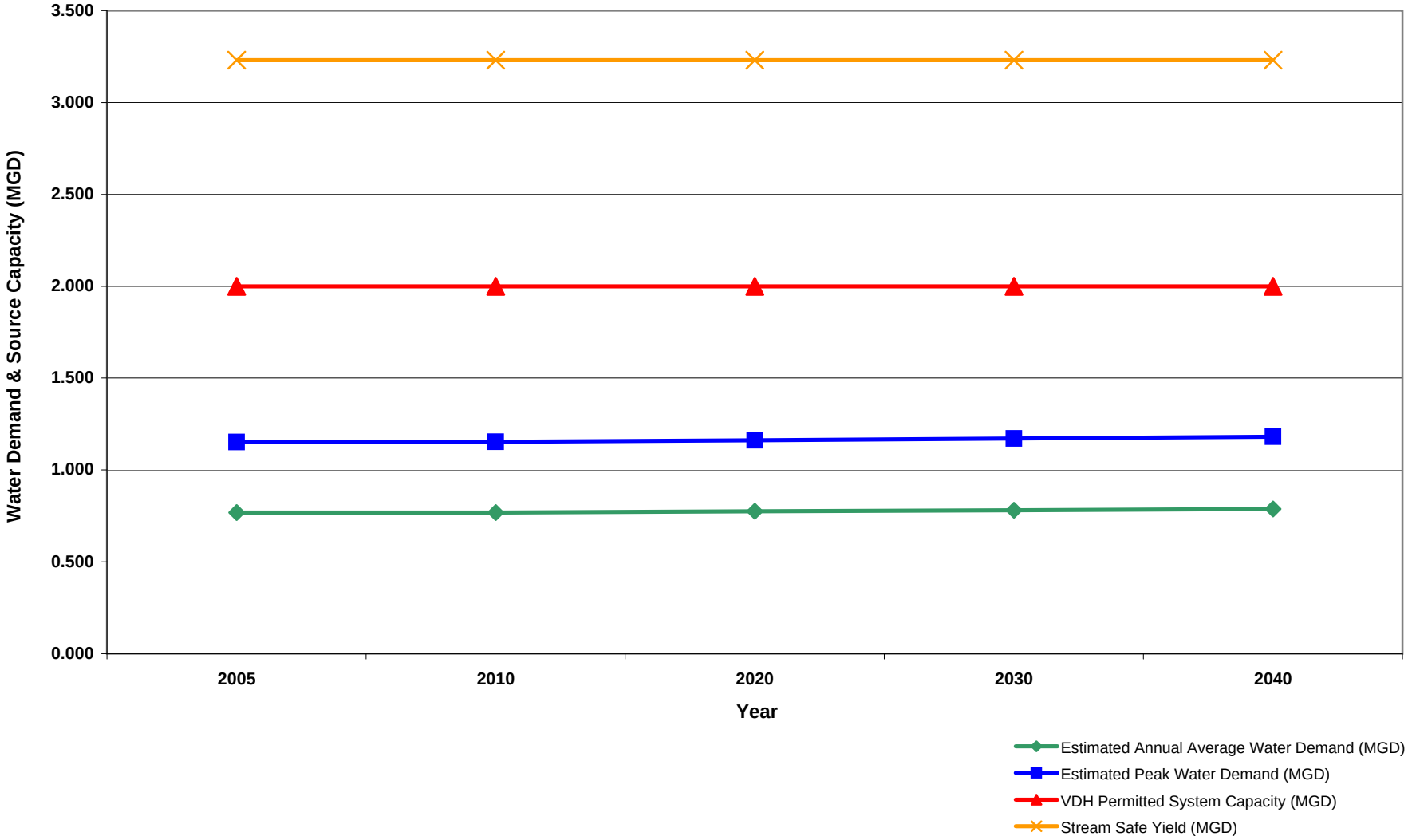


Table D2: Chase City Projected Water Demand (4d.i-v)

Projected Annual Average & Peak Demand

Year	Projected Population	Water Use Factor (gpcd)	Resultant Demand (gpd)	Estimated Annual Average Water Demand (MGD)	Estimated Peak Water Demand (MGD)	VDH Permitted System Capacity (MGD)	Reservoir Safe Yield
2005	2331	86	199914	**0.200**	**0.300**	**0.9**	**NA**
2010	2334	86	200172	**0.200**	**0.300**	**0.9**	**NA**
2020	2353	86	201801	**0.202**	**0.303**	**0.9**	**NA**
2030	2372	86	203431	**0.203**	**0.305**	**0.9**	**NA**
2040	2391	86	205060	**0.205**	**0.308**	**0.9**	**NA**

Notes: *Per Capita Method: estimated water demand = projected population X gpcd water use factor*

Assumed industry standard peaking factor of 1.5. This is considered a reasonable assumption given Chase City's peaking factor for 2007 was approximately 1.0.

2005 Per Capita Water Use Factor

2005 Water Use (MGD)	*2005 Per Capita Water Use (MGpcd)*	*2005 Per Capita Water Use (gpcd)*
0.2	0.0000857633	**86**

2005 Water Withdrawal Peaking Factor

2005 Average Day Withdrawal (MGD)	*2005 Peak Day Withdrawal (MGD)*	*Peak Day / Avg Day (MGD)*
0.200	0.200	1.00
	Avg 2005 Water Withdrawal Peaking Factor	**1.00**

Projected Disaggregated Demand

2007 Dissagregated Water Use Data

Residential (GPD)	*Commercial (GPD)*	*Industrial (GPD)*	*Schools/ Institutional (GPD)*	*Prisons (GPD)*	*Processing or otherwise Unaccounted for Losses (GPD)*	*Water Sold (GPD)*	*Total*	
5.71	0.48	0.03	0.00	0.00	0.00	NA	6.22	
187726.03	15780.82	986.30	0.00	0.00	0.00		204493.15	
91.8	**7.7**	**0.5**	**0.0**	**0.0**	**0.0**	**0.0**	**100.0**	**Categorical Water Use Percent**

Projected Dissagreggated Demand (MGD)

Year	Residential	Commercial	Industrial	Schools / Institutional	Prisons	Production Processes /Unaccounted for Losses	Water Sold	Total
2005	0.184	0.015	0.0010	0.000	N/A	N/A	N/A	0.200
2010	0.184	0.015	0.0010	0.000	N/A	N/A	N/A	0.200
2020	0.185	0.016	0.0010	0.000	N/A	N/A	N/A	0.202
2030	0.187	0.016	0.0010	0.000	N/A	N/A	N/A	0.203
2040	0.188	0.016	0.0010	0.000	N/A	N/A	N/A	0.205

Notes: *Assumed categorical water use percentages would remain consistent though the projection period.*

Graph 3: Chase City Average Annual Demand, Peak Demand, Source Capacity & Safe Yield (MGD), 2005 - 2040

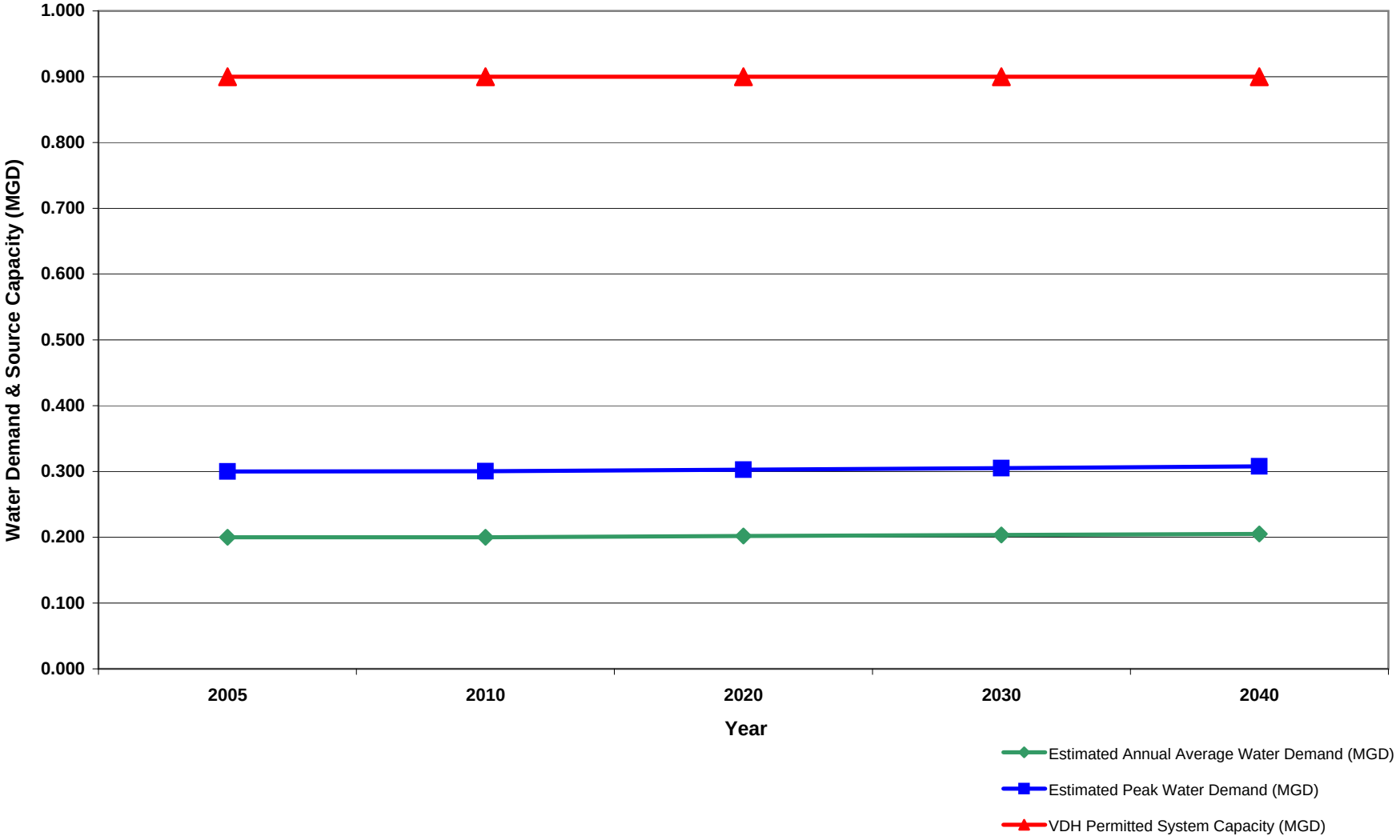


Table D3: Clarksville Projected Water Demand (4d.i-v)

Projected Annual Average & Peak Demand

Year	Projected Population	Water Use Factor (gpcd)	Resultant Demand (gpd)	Estimated Annual Average Water Demand (MGD)	Estimated Peak Water Demand (MGD)	VDH Permitted System Capacity (MGD)	Reservoir Safe Yield (MGD)
2005	1500	167	250500	**0.251**	**0.541**	**1**	**352**
2010	1502	167	250834	**0.251**	**0.542**	**1**	**352**
2020	1514	167	252838	**0.253**	**0.546**	**1**	**352**
2030	1526	167	254842	**0.255**	**0.550**	**1**	**352**
2040	1539	167	257013	**0.257**	**0.555**	**1**	**352**

Notes: *Per Capita Method: estimated water demand = projected population X gpcd water use factor*

2005 Per Capita Water Use Factor

2005 Water Withdrawal Peaking Factor

2005 Water Use (MGD)	*2005 Per Capita Water Use (MGpcd)*	*2005 Per Capita Water Use (gpcd)*	*2005 Average Day Withdrawal (MGD)*	*2005 Peak Day Withdrawal (MGD)*	*Peak Day / Avg Day (MGD)*
0.25	0.0001666667	**167**	0.250	0.540	2.16

Avg 2005 Water Withdrawal Peaking Factor **2.16**

Projected Disaggregated Demand

2005 Dissagregated Water Use Data

Residential (GPD)	*Commercial/ Lt Industrial (GPD)*	*Industrial (GPD)*	*Schools/ Institutional (GPD)*	*Prisons (GPD)*	*Processing or otherwise Unaccounted for Losses (GPD)*	*Water Sold (GPD)*	*Total*	
5.80	2.10	0.00	0.00	0.00	0.90	NA	8.80	**monthly**
190684.93	69041.10	0.00	0.00	0.00	29589.04		289315.07	
65.9	**23.9**	**0.0**	**0.0**	**0.0**	**10.2**	**0.0**	**100.0**	**Categorical Water Use Percent**

Projected Dissagreggated Demand (MGD)

Year	Residential	Commercial	Industrial	Schools / Institutional	Prisons	Production Processes /Unaccounted for Losses	Water Sold	Total
2005	0.165	0.060	0.000	0.000	N/A	0.026	N/A	0.251
2010	0.165	0.060	0.000	0.000	N/A	0.026	N/A	0.251
2020	0.167	0.060	0.000	0.000	N/A	0.026	N/A	0.253
2030	0.168	0.061	0.000	0.000	N/A	0.026	N/A	0.255
2040	0.169	0.061	0.000	0.000	N/A	0.026	N/A	0.257

Notes: *Assumed categorical water use percentages would remain consistent though the projection period.*

Graph 2: Clarksville System Average Annual Demand, Peak Demand, Source Capacity & Safe Yield (MGD), 2005 - 2040

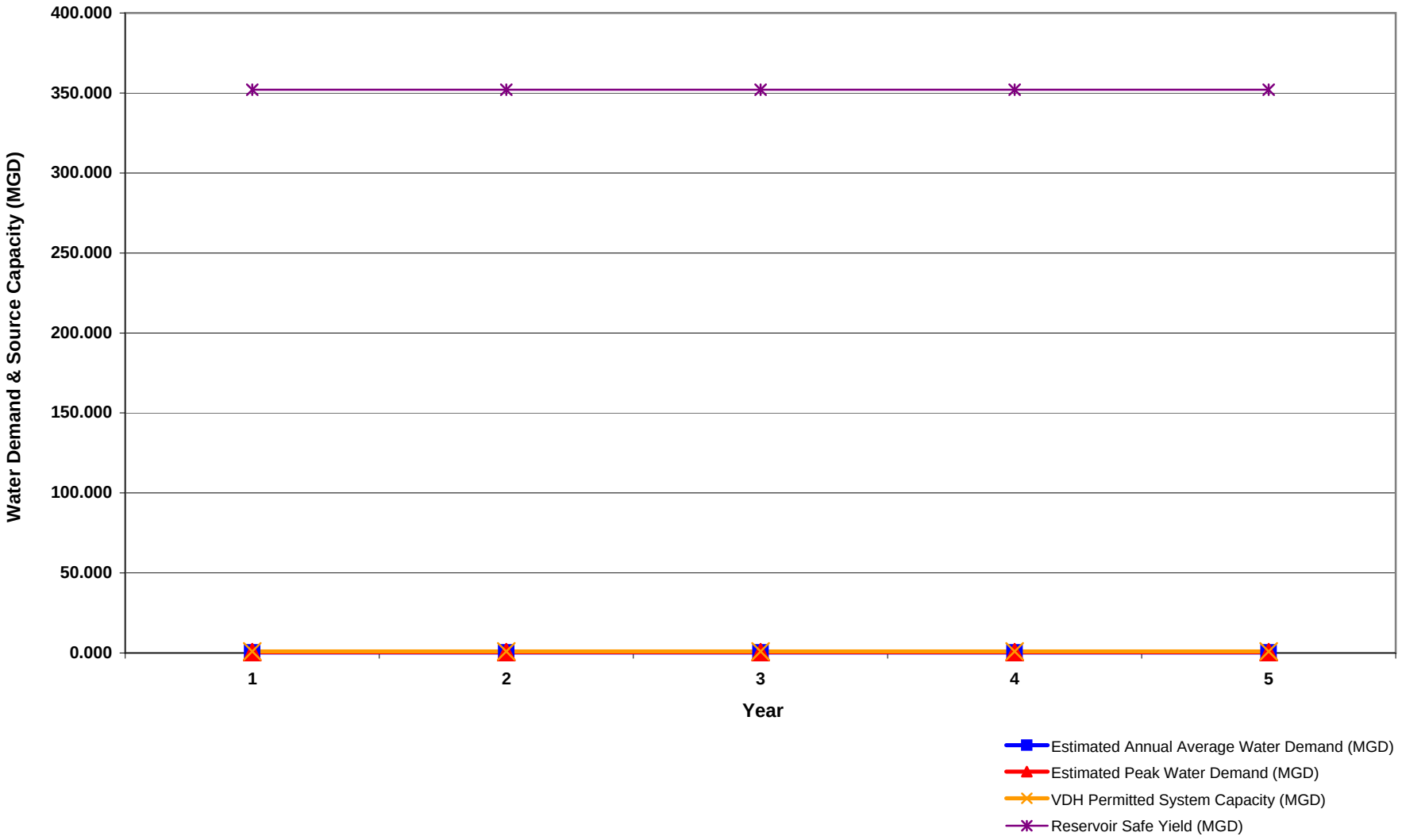


Table D4-- RRSA Projected Water Demand (4d.i-v)

Projected Annual Average & Peak Demand

Year	Projected Population	Water Use Factor (gpcd)	Resultant Demand (gpd)	Estimated Annual Average Water Demand (MGD)	Estimated Peak Water Demand (MGD)	VDH Permitted System Capacity (MGD)	Reservoir Safe Yield (MGD)
2005	8126	150	1218900	**1.219**	**1.828**	**4.18**	**352**
2010	8137	150	1220550	**1.221**	**1.831**	**4.18**	**352**
2020	8203	150	1230450	**1.230**	**1.846**	**4.18**	**352**
2030	8269	150	1240350	**1.240**	**1.861**	**4.18**	**352**
2040	8335	150	1250250	**1.250**	**1.875**	**4.18**	**352**

Notes: *Per Capita Method: estimated water demand = projected population X gpcd water use factor*

Assumed industry standard peaking factor of 1.5. This is considered a reasonable assumption given RRSA's peaking factor for 2005 was approximately 1.39.

Safe yield is total safe yield for John H Kerr Reservoir/Lake Gaston.

2005 Per Capita Water Use Factor

2005 Water Use (MGD)	*2005 Per Capita Water Use (MGpcd)*	*2005 Per Capita Water Use (gpcd)*
1.22	0.0001501354	**150**

2005 Water Withdrawal Peaking Factor

2005 Average Day Withdrawal (MGD)	*2005 Peak Day Withdrawal (MGD)*	*Peak Day / Avg Day (MGD)*
1.220	1.690	1.39

Avg 2005 Water Withdrawal Peaking Factor **1.39**

Projected Disaggregated Demand

2005 Dissagregated Water Use Data

Residential (GPD)	*Commercial/ Lt Industrial (GPD)*	*Industrial (GPD)*	*Schools/ Institutional (GPD)*	*Prisons (GPD)*	*Processing or otherwise Unaccounted for Losses (GPD)*	*Water Sold (GPD)*	*Total*
5.58	15.01	6.04	0.00	4.00	10.59	NA	41.22
183452.05	493479.45	198575.34	0.00	131506.85	348164.38		1355178.08
13.5	**36.4**	**14.7**	**0.0**	**9.7**	**25.7**	**0.0**	**100.0**

Categorical Water Use Percent

	Projected Dissagreggated Demand (MGD)							
Year	Residential	Commercial	Industrial	Schools / Institutional	Prisons	Production Processes /Unaccounted for Losses	Water Sold	Total
2005	0.165	0.444	0.177	0.000	0.118	0.313	N/A	1.216
2010	0.165	0.444	0.177	0.000	0.118	0.314	N/A	1.218
2020	0.166	0.448	0.178	0.000	0.119	0.316	N/A	1.228
2030	0.167	0.451	0.180	0.000	0.120	0.319	N/A	1.238
2040	0.169	0.455	0.181	0.000	0.121	0.321	N/A	1.248

Notes: *Assumed categorical water use percentages would remain consistent though the projection period.*

Graph 2: RRSA Average Annual Demand, Peak Demand, Source Capacity & Safe Yield (MGD), 2005 - 2040

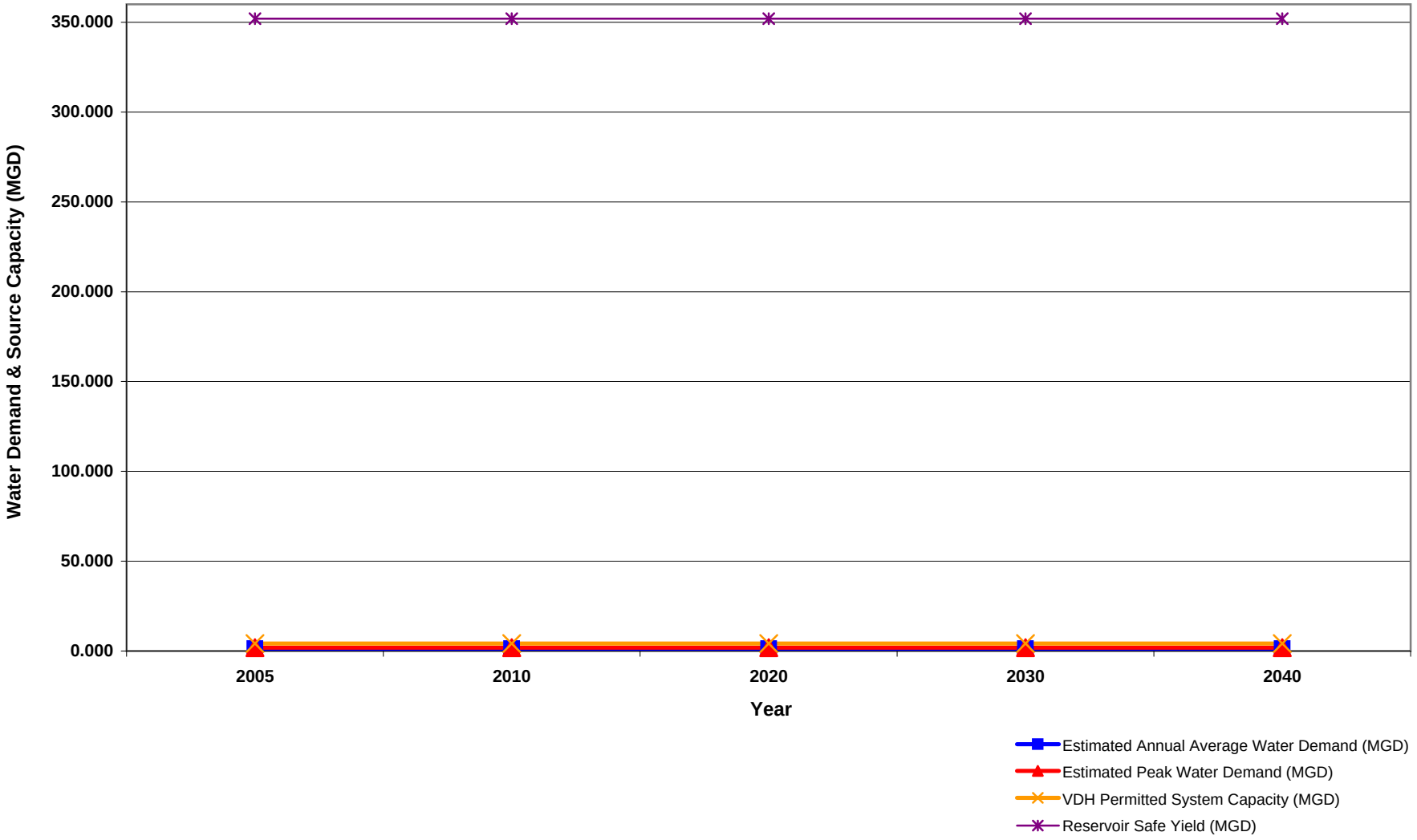


Table D--i-v: 5) Non-Municipal Community Water Systems Projected Water Demand

Projected Annual Average & Peak Demand

Year	Projected System Population*	Water Use Factor (gpcd)	Resultant Demand (gpd)	Estimated Annual Average Water Demand (MGD)	Estimated Peak Water Demand (MGD)	VDH Permitted System Capacity (MGD)*	Stream Safe Yield (MGD)
2005	2171	92	200000	0.200	0.300	1.9	NA
2010	2174	92	200280	0.200	0.300	1.9	NA
2020	2191	92	201888	0.202	0.303	1.9	NA
2030	2209	92	203509	0.204	0.305	1.9	NA
2040	2227	92	205143	0.205	0.308	1.9	NA

Notes: *Per Capita Method: estimated water demand = projected population X gpcd water use factor*

**See Appendix A, Table 70B*

2005 Per Capita Water Use Factor

2005 Water Use (MGD)	*2005 Per Capita Water Use (MGD)*	*2005 Per Capita Water Use (gpcd)*
0.20	9.21234E-05	**92**

2005 Water Withdrawal Peaking Factor

2005 Average Day Withdrawal (MGD)	*2005 Peak Day Withdrawal (MGD)*	*Peak Day / Avg Day (MGD)*
No peak day available. Assume standard 1.5		
Avg 2007 Water Withdrawal Peaking Factor		**1.50**

Projected Disaggregated Demand

2005 Dissagregated Water Use Data

Residential (GPD)	*Commercial (GPD)*	*Industrial (GPD)*	*Schools/ Institutional (GPD)*	*Prisons (GPD)*	*Processing or otherwise Unaccounted for Losses (GPD)*	*Water Sold (GPD)*	*Total*
200000.00	NA	NA	NA	NA	NA		200000.00
100.0	NA	NA	NA	NA	NA		**100.0**

Categorical Water Use Percent

Year	Projected Dissagreggated Demand (MGD)							
	Residential	Commercial	Industrial	Schools / Institutional	Prisons	Production Processes /Unaccounted for Losses	Water Sold	Total
2007	0.200	N/A	N/A	N/A	N/A	N/A	N/A	0.200
2010	0.200	N/A	N/A	N/A	N/A	N/A	N/A	0.200
2020	0.202	N/A	N/A	N/A	N/A	N/A	N/A	0.202
2030	0.204	N/A	N/A	N/A	N/A	N/A	N/A	0.204
2040	0.205	N/A	N/A	N/A	N/A	N/A	N/A	0.205

Notes: *Assumed categorical water use percentages would remain consistent though the projection period.*

Table D-v: Total Community Water System Disaggregated Water Demand Projections

TOTAL Lake Country CWS	2005	2010	2020	2030	2040
Residential	0.855	0.855	0.861	0.868	0.875
Commercial / Light Industrial	0.584	0.584	0.589	0.594	0.598
Heavy Industrial	0.178	0.178	0.179	0.181	0.182
Institutional	0.051	0.051	0.051	0.052	0.052
Prisons	0.435	0.435	0.439	0.443	0.446
Production Processes/ Unaccounted for Losses	0.484	0.485	0.488	0.493	0.496
Water Sold	0.051	0.051	0.051	0.052	0.052
TOTAL	**2.637**	**2.639**	**2.658**	**2.683**	**2.701**

Lawrenceville	2005	2010	2020	2030	2040
Residential	0.141	0.141	0.142	0.143	0.144
Commercial / Light Industrial	0.065	0.065	0.065	0.066	0.066
Heavy Industrial	N/A	N/A	N/A	N/A	N/A
Institutional	0.051	0.051	0.051	0.052	0.052
Prisons	0.317	0.317	0.32	0.323	0.325
Production Processes/ Unaccounted for Losses	0.145	0.145	0.146	0.148	0.149
Water Sold	0.051	0.051	0.051	0.052	0.052
TOTAL	**0.770**	**0.770**	**0.775**	**0.784**	**0.788**

Chase City	2005	2010	2020	2030	2040
Residential	0.184	0.184	0.185	0.187	0.188
Commercial / Light Industrial	0.015	0.015	0.016	0.016	0.016
Heavy Industrial	0.001	0.001	0.001	0.001	0.001
Institutional	N/A	N/A	N/A	N/A	N/A
Prisons	N/A	N/A	N/A	N/A	N/A
Production Processes/ Unaccounted for Losses	N/A	N/A	N/A	N/A	N/A
Water Sold	N/A	N/A	N/A	N/A	N/A
TOTAL	**0.200**	**0.200**	**0.202**	**0.204**	**0.205**

Clarksville	2005	2010	2020	2030	2040
Residential	0.165	0.165	0.166	0.167	0.169
Commercial / Light Industrial	0.060	0.060	0.060	0.061	0.061
Heavy Industrial	N/A	N/A	N/A	N/A	N/A
Institutional	N/A	N/A	N/A	N/A	N/A
Prisons	N/A	N/A	N/A	N/A	N/A
Production Processes/ Unaccounted for Losses	0.026	0.026	0.026	0.026	0.026
Water Sold	N/A	N/A	N/A	N/A	N/A
TOTAL	**0.251**	**0.251**	**0.252**	**0.254**	**0.256**

RRSA	2005	2010	2020	2030	2040
Residential	0.165	0.165	0.166	0.167	0.169
Commercial / Light Industrial	0.444	0.444	0.448	0.451	0.455
Heavy Industrial	0.177	0.177	0.178	0.18	0.181
Institutional	N/A	N/A	N/A	N/A	N/A
Prisons	0.118	0.118	0.119	0.12	0.121
Production Processes/ Unaccounted for Losses	0.313	0.314	0.316	0.319	0.321
Water Sold	N/A	N/A	N/A	N/A	N/A
TOTAL	**1.216**	**1.218**	**1.227**	**1.237**	**1.247**

Private CWS--Groundwater	2005	2010	2020	2030	2040
Residential	0.200	0.200	0.202	0.204	0.205
TOTAL	**0.200**	**0.200**	**0.202**	**0.204**	**0.205**

Table I: Community Water System Water Supply Adequacy Assessment

	Water Supply Adequacy Assessment surplus (+) or deficit (-), MGD				
	2005	2010	2020	2030	2040
Lawrenceville					
Average Annual Demand	1.230	1.231	1.225	1.219	1.213
Peak Day Demand	0.845	0.847	0.838	0.829	0.819
Chase City					
Average Annual Demand	0.711	0.711	0.709	0.708	0.706
Peak Day Demand	0.617	0.616	0.614	0.612	0.609
Clarksville					
Average Annual Demand	0.750	0.749	0.747	0.745	0.743
Peak Day Demand	0.459	0.458	0.454	0.450	0.450
RRSA					
Average Annual Demand	2.961	2.959	2.950	2.940	2.930
Peak Day Demand	2.352	2.349	2.334	2.319	2.305
Private CWS					
Average Annual Demand	1.700	1.700	1.698	1.696	1.695
Peak Day Demand	1.600	1.600	1.597	1.595	1.592

Lawrenceville: Projected Annual Average, Peak Demand, & Capacity (data from Spreadsheet 4)

Year	Estimated Annual Average Water Demand (MGD)	Estimated Peak Water Demand (MGD)	VDH Permitted System Capacity (MGD)	Stream Safe Yield (MGD)
2005	0.770	1.155	2	3.85
2010	0.769	1.153	2	3.85
2020	0.775	1.162	2	3.85
2030	0.781	1.171	2	3.85
2040	0.787	1.181	2	3.85

Chase City: Projected Annual Average, Peak Demand, & Capacity

(data from Spreadsheet 5)

Year	Estimated Annual Average Water Demand (MGD)	Estimated Peak Water Demand (MGD)	VDH Permitted System Capacity (MGD)	Reservoir Safe Yield
2005	0.189	0.283	0.9	NA
2010	0.189	0.284	0.9	NA
2020	0.191	0.286	0.9	NA
2030	0.192	0.288	0.9	NA
2040	0.194	0.291	0.9	NA

Clarksville: Projected Annual Average, Peak Demand, & Capacity (data from Spreadsheet 5)

Year	Estimated Annual Average Water Demand (MGD)	Estimated Peak Water Demand (MGD)	VDH Permitted System Capacity (MGD)	Reservoir Safe Yield (MGD)
2005	0.251	0.541	1	352
2010	0.251	0.542	1	352
2020	0.253	0.546	1	352
2030	0.255	0.550	1	352
2040	0.257	0.555	1	352

RRSA: Projected Annual Average, Peak Demand, & Capacity (data from Spreadsheet 5)

Year	Estimated Annual Average Water Demand (MGD)	Estimated Peak Water Demand (MGD)	VDH Permitted System Capacity (MGD)	Reservoir Safe Yield (MGD)
2005	1.219	1.828	4.18	352
2010	1.221	1.831	4.18	352
2020	1.230	1.846	4.18	352
2030	1.240	1.861	4.18	352
2040	1.250	1.875	4.18	352

Private CWS: Projected Annual Average, Peak Demand, & Capacity (data from Spreadsheet 5)

Year	Estimated Annual Average Water Demand (MGD)	Estimated Peak Water Demand (MGD)	VDH Permitted System Capacity (MGD)	Reservoir Safe Yield (MGD)	
2005	0.200	0.300	1.9	NA	GW
2010	0.200	0.300	1.9	NA	GW
2020	0.202	0.303	1.9	NA	GW
2030	0.204	0.305	1.9	NA	GW
2040	0.205	0.308	1.9	NA	GW

Total Lake Country CWS: Projected Annual Average, Peak Demand, & Capacity

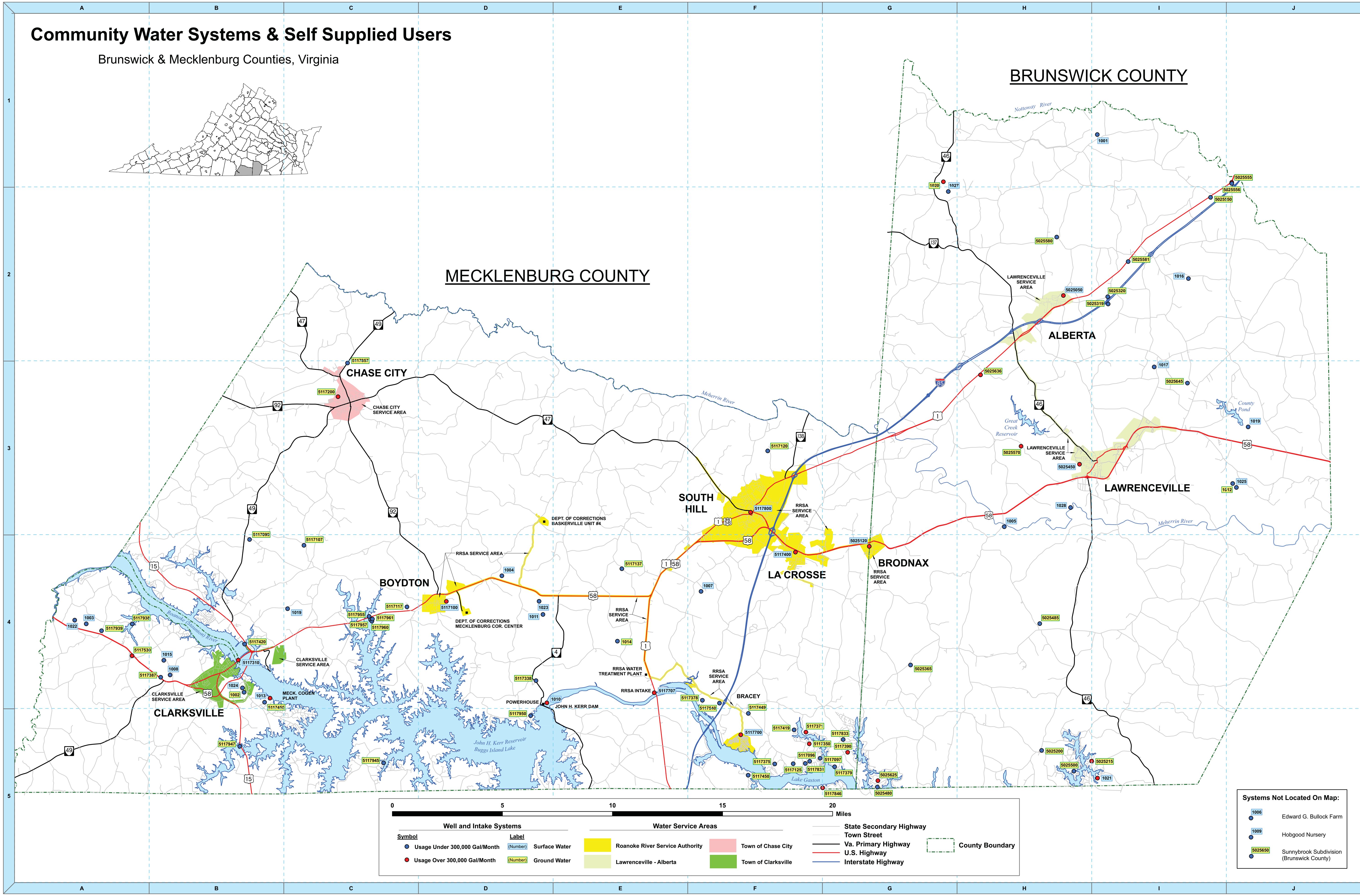
Year	Estimated Annual Average Water Demand (MGD)	Estimated Peak Water Demand (MGD)	VDH Permitted System Capacity (MGD)	Reservoir Safe Yield (MGD)
2005	2.628	4.108	9.980	Sufficient
2010	2.629	4.109	9.980	Sufficient
2020	2.650	4.143	9.980	Sufficient
2030	2.672	4.176	9.980	Sufficient
2040	2.693	4.210	9.980	Sufficient

APPENDIX E

- Map 1: Community Water Systems & SSU; Water Sources
- Map 2: Wetlands
- Map 3: Conservation Areas & Riparian Buffer
- Map 4: Land Use-Brunswick County
- Map 5: Land Use-Mecklenburg County
- Map 6: Impaired water Point Source Discharge

Community Water Systems & Self Supplied Users

Brunswick & Mecklenburg Counties, Virginia



Map #2 Wetlands
Brunswick & Mecklenburg Counties

N

Legend

- Lakes
- Highways
- Streams

47
58
1
85
58
1
85
58

Kerr Reservoir

Lake Gaston

Meherrin River

0 2.5 5 10 15 20 Miles

Map # 3 Conservation Easements
Brunswick & Mecklenburg Counties

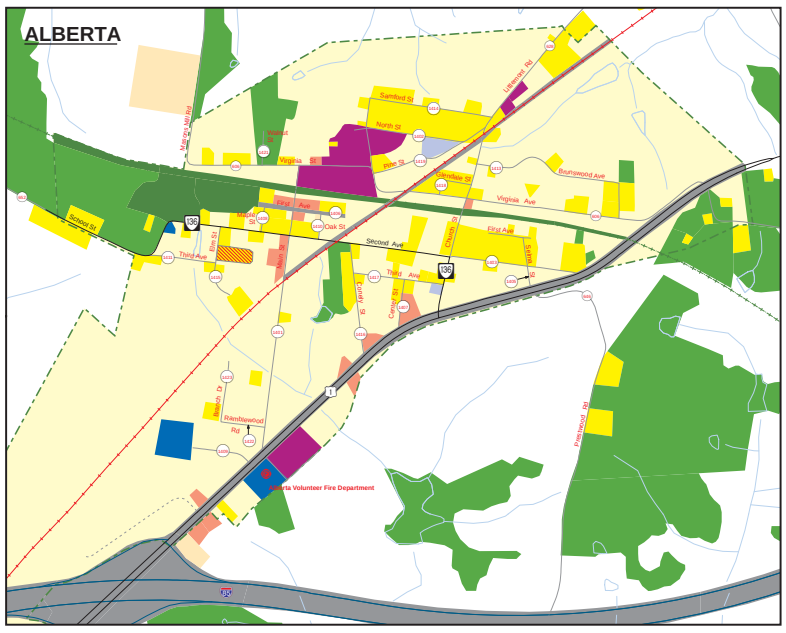
N

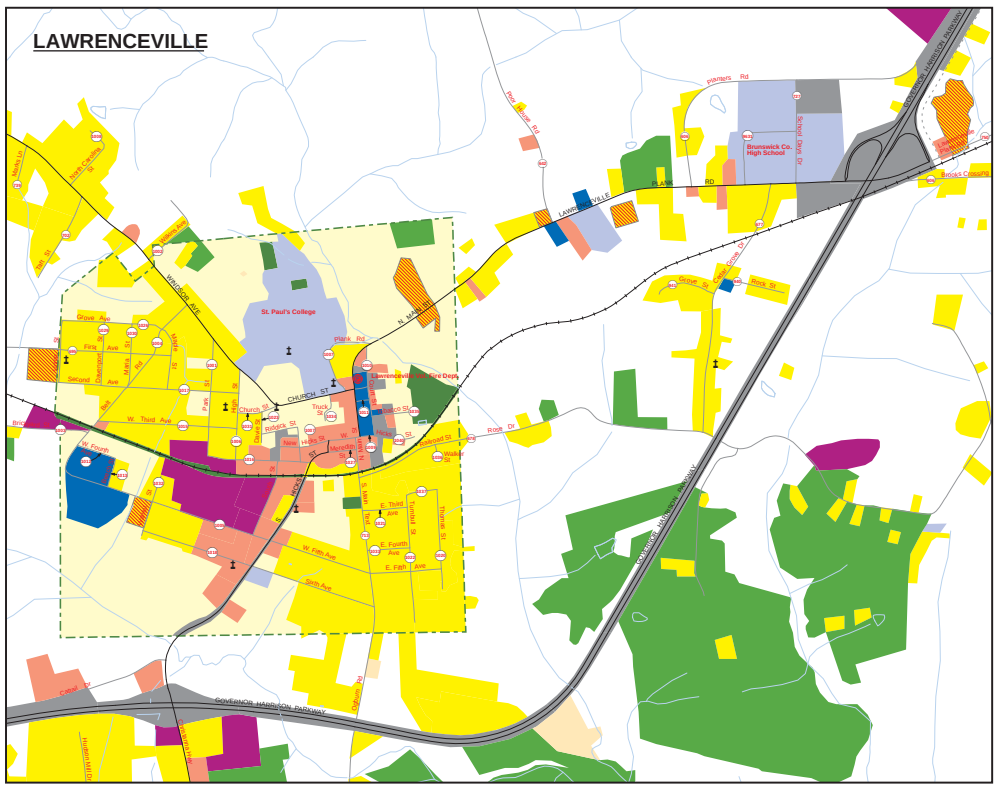
Legend

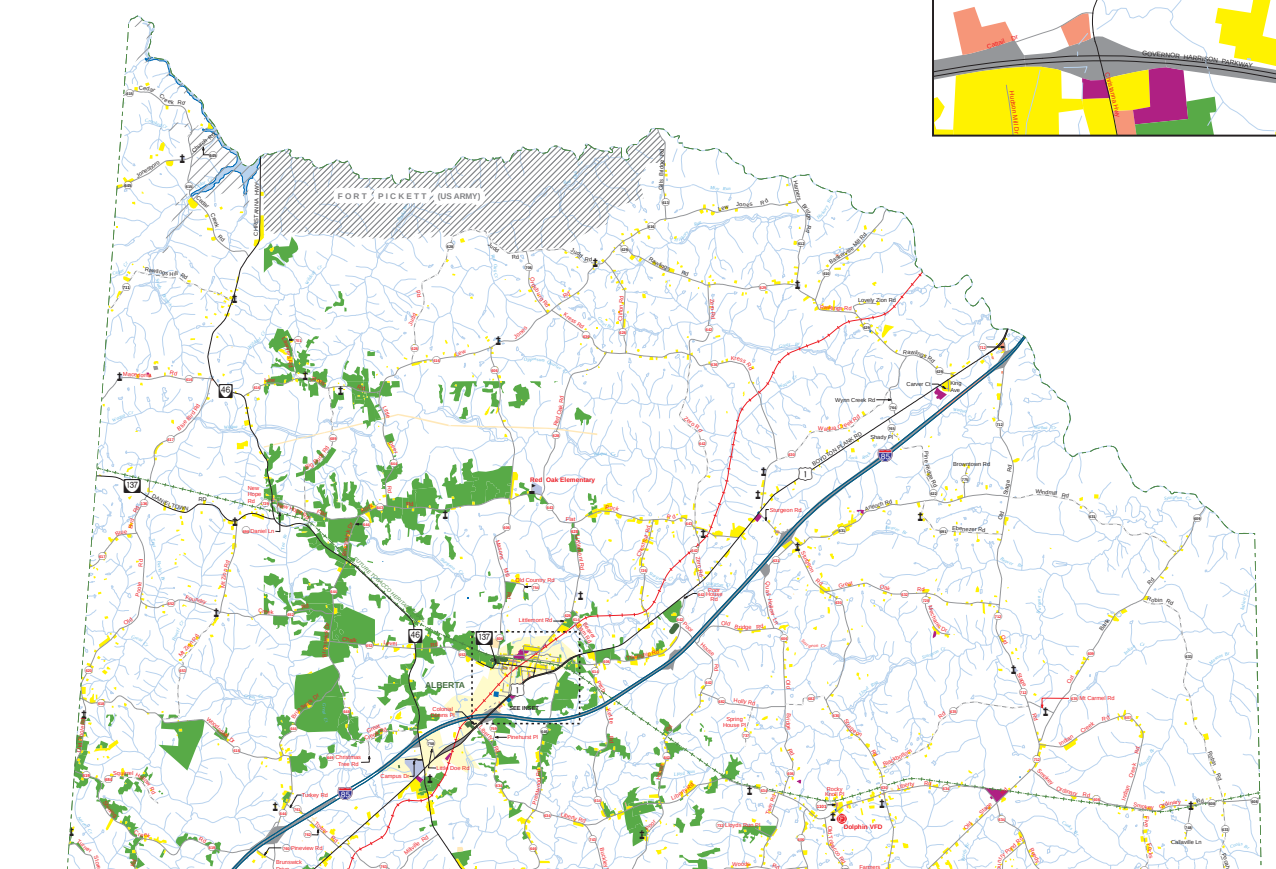
- Golf Courses (VEDP)
- VA State Parks (DCR)
- Wildlife Management Areas (DGIF)
- Conservation Lands---Private (VA)
- Hydro Features
- Department of Defense Lands (DOD)
- Towns

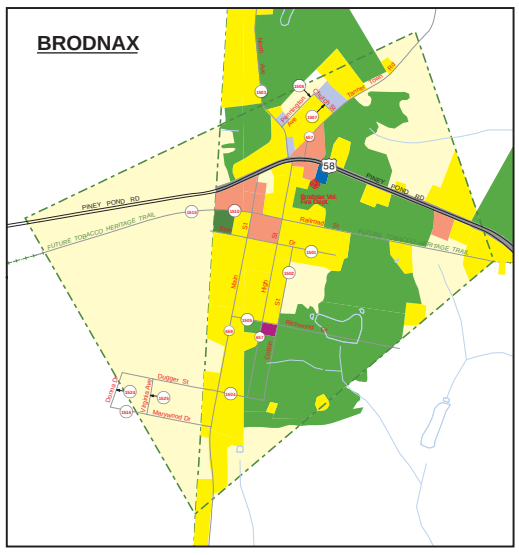
Fort Pickett
Alberta
Chase City
Lawrenceville
South Hill
La Crosse
Brodnax
Boydton
Dick Cross WMA
Clarksville
Occoneechee
Buggs Island Lake
Lake Gaston

0 2.5 5 10 15 20 Miles









LEGEND

VDOT Highway System

- Interstate
- Primary
- Secondary Paved
- Secondary Unpaved
- Frontage Road

- Creek/Stream
- County Boundary
- Town Boundary

Land Use Classification

- Agricultural
- Commercial
- Industrial
- Educational, Hospital, Institutional, Religous
- Military
- Parking and Transportation
- Public/Semi-Public
- Recreation
- Residential - MF
- Residential - SF
- Undevelopable
- Utilities
- Vacant Land and Woodland

- Church
- (Labeled) Golf Course
- Hospital
- (Labeled) School

None of the following areas are located in Brunswick County:

DGIF Wildlife Management Area
USFWS Wildlife Refuge
VOF Land
VA State Forest
VA State Park
US National Forest
US National Park

There are no hospitals in Brunswick County.

Some agricultural land use areas are not shown on this map at this time.

Brunswick County, VA

Map 3A

Legend (See Map Area)

Scale
Main Map: 1" = 1 Mile
Inset Maps: 1" = 750 Feet

Map Number:

Last Edit: May 17, 2007

VDOT - LONG RANGE PLAN
Planning Maps - Current Land Use
Brunswick Co.

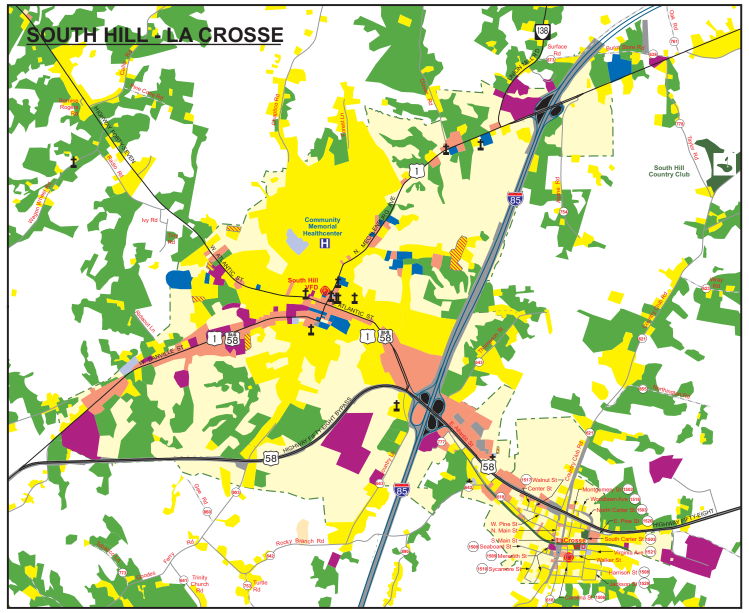
Southside Planning District Commission
PO Box 150
200 South Mecklenburg Ave.
South Hill, VA 23970
(434) 447-7101

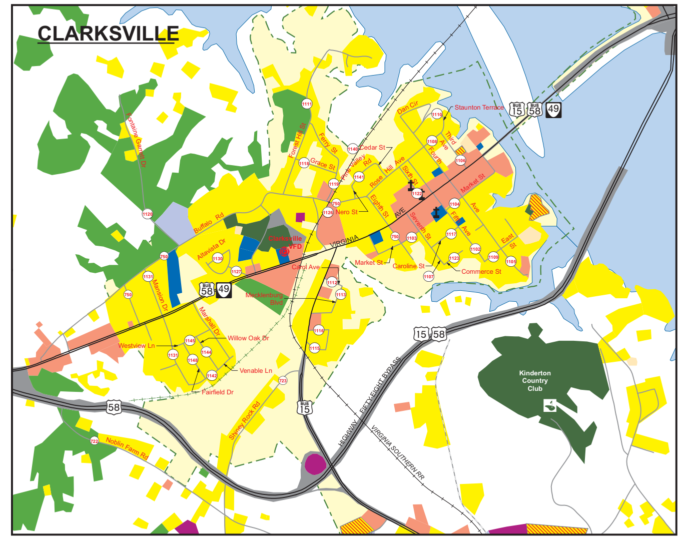
Drawn By: Andy K. Wells

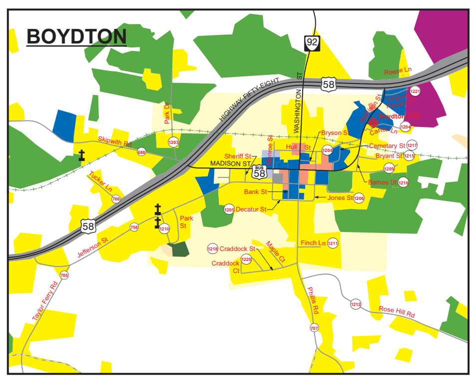
For: SPDC

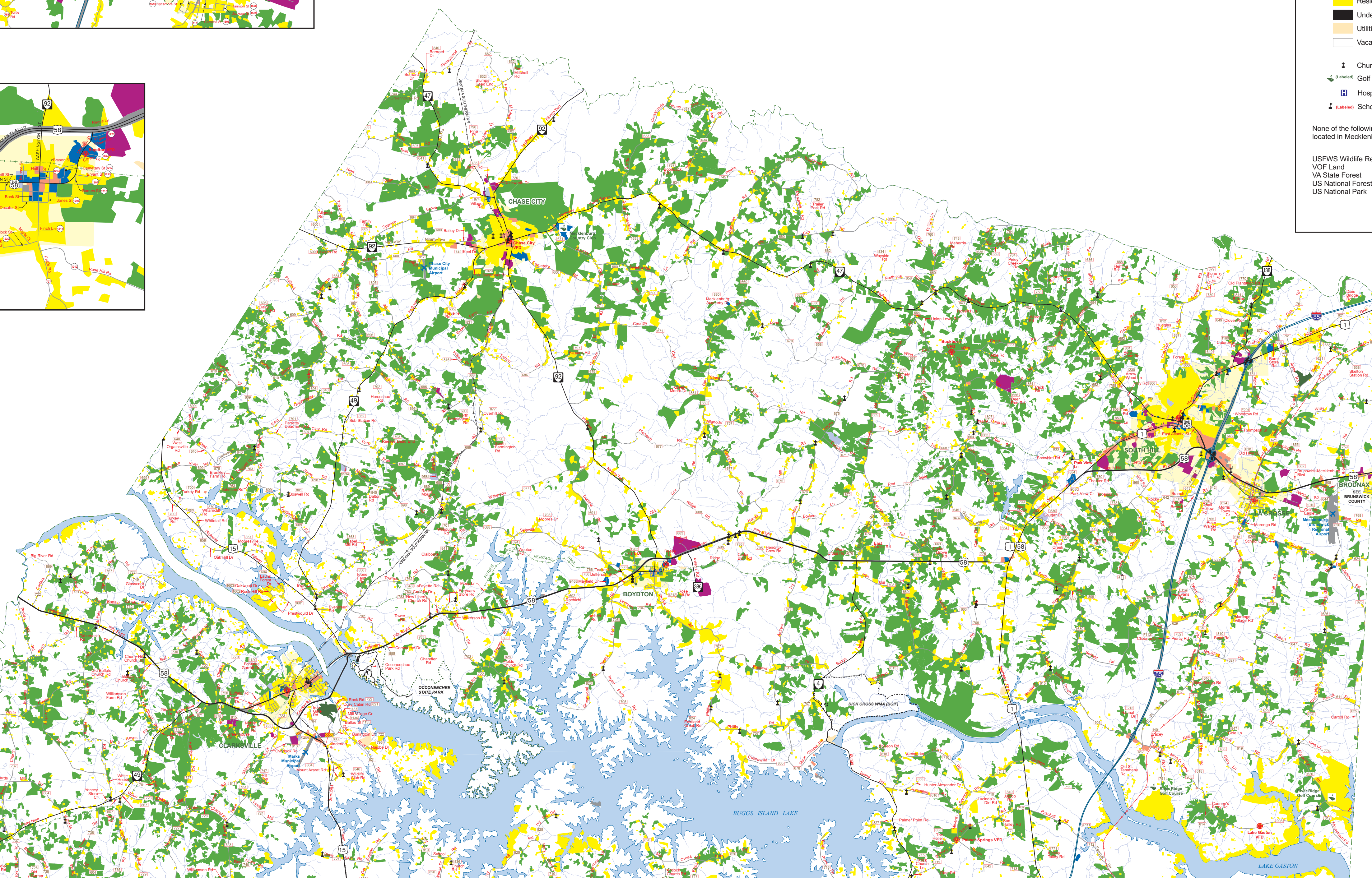
Projection Information:
This map is based on the following projection:
State Plane System, Virginia South
Lambert Conformal Conic NAD83
Units: U.S. Survey Feet
Easting: 11482916.67
Northing: 3280833.33
Central Meridian: -78.5
Standard Parallel 1: 36.767
Standard Parallel 2: 37.977
Lat. of Origin: 36.333

N W E S









LEGEND

VDOT Highway System

- Interstate
- Primary
- Secondary Paved
- Secondary Unpaved
- Frontage Road

- Creek/Stream
- County Boundary
- Town Boundary

Land Use Classification

- 🟩 Agricultural
- 🟧 Commercial
- 🟪 Industrial
- 🟦 Educational, Hospital, Institutional, Religous
- ▨ Military
- ⬜ Parking and Transportation
- 🟦 Public/Semi-Public
- 🟩 Recreation
- ▨ Residential - MF
- 🟨 Residential - SF
- ⬛ Undevelopable
- 🟨 Utilities
- ⬜ Vacant Land and Woodland

- Church
- (Labeled) Golf Course
- Hospital
- (Labeled) School

None of the following areas are located in Mecklenburg County:

USFWS Wildlife Refuge
VOF Land
VA State Forest
US National Forest
US National Park

N
W E
S

Projection Information:
This map is based on the following projection:
State Plane System, Virginia South
Lambert Conformal Conic NAD83
Units: U.S. Survey Feet
Easting: 11482916.67
Northing: 3280833.33
Central Meridian: -78.5
Standard Parallel 1: 36.767
Standard Parallel 2: 37.977
Lat. of Origin: 36.333

Drawn By: Andy K. Wells

For: SPDC

Southside Planning District Commission
PO Box 150
200 South Mecklenburg Ave.
South Hill, VA 23970
(434) 447-7101

VDOT - LONG RANGE PLAN
Planning Maps - Current Land Use
Mecklenburg Co.

Map Number:

Last Edit: May 17, 2007

Scale
County: 1" = 1 Mile
South Hill: 1" = 1/2 Mile
Other Towns: 1" = 1/4 Mile

Legend

(See map frame to left)

Map 3C

Mecklenburg County, VA

Map # 3 Conservation Easements
Brunswick & Mecklenburg Counties

N

Legend

- Golf Courses (VEDP)
- VA State Parks (DCR)
- Wildlife Management Areas (DGIF)
- Conservation Lands---Private (VA)
- Hydro Features
- Department of Defense Lands (DOD)
- Towns

Fort Pickett
Alberta
Chase City
Lawrenceville
South Hill
La Crosse
Brodnax
Boydton
Dick Cross WMA
Clarksville
Occoneechee
Buggs Island Lake
Lake Gaston

0 2.5 5 10 15 20 Miles

APPENDIX F – ORDINANCES

NOTE: All localities own, operate, or participate in public water systems—totally or in part.

LOCALITY	RESOLUTION	Drought Response ORDINANCE	Record of PUBLIC HEARING
Brunswick County	**X**	**X**	**X**
Town of Alberta	**X**	**X**	**X**
Town of Brodnax	**X**	**X**	**X**
Town of Lawrenceville	**X**	**X**	**X**
Mecklenburg County	**X**	**X**	**X**
Town of Boydton	**X**	**X**	**X**
Town of Chase City	**X**	**X**	**X**
Town of Clarksville	**X**	**X**	**X**
Town of La Crosse	**X**	**X**	**X**
Town of South Hill	**X**	**X**	**X**

Brunswick County Program Documents:

Adopted Ordinance

Resolution of plan approval

Public Hearing record/notice

Chapter 30

DRAFT

ARTICLE IV. DROUGHT RESPONSE

Sec. 30-100. Short title.

This Article shall be known and may be cited as the Lake Country Regional Drought Response Ordinance.

Sec. 30-101. Purpose.

The purpose of this Article is to provide for the voluntary and mandatory restriction of use of the Brunswick County/Brunswick County Industrial Development Authority public water system during declared water shortages or water emergencies.

Sec. 30-102. Scope.

This Article shall apply to all Brunswick County residents and businesses, which are served by the public water system.

Sec. 30-103. Drought Response Plan.

The Board of Supervisors shall adopt by resolution the Lake Country Regional Water Supply Plan, which includes the Lake Country Regional Drought Response and Contingency Plan.

Sec. 30-104. Drought Indicators.

Upon determination that drought indicator(s) exceed the threshold of a drought stage, as set forth in Lake Country Regional Drought Response and Contingency Plan as outlined in Chapter 7 and Section B and Section C of the Lake Country Regional Water Supply Plan, the Board of Supervisors may declare a specific drought stage.

Sec. 30-105. Drought Stages.

The drought stages shall be Drought Watch, Drought Warning, and Drought Emergency, as determined by the Board of Supervisors, pursuant to the Lake Country Regional Drought Response and Contingency Plan and State Water Control Board regulation 9 VAC 25-120.

Sec. 30-106. Declaration.

Upon notification to the Board of Supervisors that a drought stage exists, as defined in Sec. 30-105 of this Ordinance, the Board may issue a declaration of a drought stage. The County of Brunswick may declare a drought stage in the absence of a declaration by the Commonwealth of Virginia.

Sec. 30-107. Drought Stage Responses

Upon declaration by the Board of Supervisors of a Drought Watch or Drought Warning, voluntary conservation measurers will be requested of residents and businesses as set forth in the Lake Country Regional Drought Response and Contingency Plan. Upon declaration of a Drought Emergency, mandatory restrictions shall apply as set forth in the Plan.

Sec. 30-108. Waiver of Restrictions.

Upon prior written request by an individual, business, or other water user, the Board of Supervisors, or its designee, may permit less than full compliance with any drought restrictions if good cause can be shown, including evidence that the applicant is affected in a substantial manner not common to other businesses or persons generally. No waiver shall be granted by the Board or its designee unless the Board or its designee determines that the public health, safety, and welfare will not be adversely affected by the waiver. All waivers granted by the Board of Supervisors of its designee shall be reported at the Board's next regular or special meeting.

Sec. 30-109. Penalties.

Any violation of this ordinance shall constitute a misdemeanor, punishable by a fine of not less than one hundred dollars ($100) and not more than five hundred dollars ($500). Each act or each day's continuation of the violation shall be considered a separate offense.

Adopted by the Brunswick County Board of Supervisors on Wednesday, June 15, 2011.

County of Brunswick

POST OFFICE BOX 399
LAWRENCEVILLE, VA 23868
PHONE - (434) 848-3107
FAX - (434) 848-0424

A RESOLUTION APPROVING THE LAKE COUNTRY REGIONAL WATER SUPPLY PLAN

WHEREAS, Virginia State Water Control Board Regulation 9 VAC 25-780, Local and Regional Water Supply Planning, requires all counties, cities and towns in the Commonwealth of Virginia to prepare and submit a water supply planning program to the Department of Environmental Quality (DEQ); and

WHEREAS, the following elements must be included in all local or regional water supply programs:

- A description of existing water sources in accordance with 9VAC25-780-70;
- A description of existing water use in accordance with the requirements of 9VAC25-780-80;
- A description of existing water resource conditions in accordance with the requirements of 9VAC25-780-90;
- An assessment of projected water demand in accordance with the requirements of 9VAC25-780-100;
- A description of water management actions in accordance with the requirements of 9VAC25-780-110 and 9VAC780-120;
- A statement of need in accordance with the requirements of 9VAC25-780-130;
- An alternatives analysis that identifies potential alternatives to address projected deficits in water supplies in accordance with the requirements of 9VAC25-780-130;
- A map or maps identifying important elements of the program that may include existing environmental resources, existing water sources, significant existing water uses, and proposed new sources;
- A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter;
- A resolution approving the plan from each local government that is party to the plan; and
- A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received, and

WHEREAS, Brunswick County is part of the Lake Country Regional Water Supply Plan which includes Brunswick and Mecklenburg Counties and the towns of Alberta, Brodnax, Boydton, Chase City, Clarksville, La Crosse, Lawrenceville and South Hill; and

WHEREAS, the Lake Country Regional Water Supply Plan was developed in accordance with Virginia Regulation 9 VAC 25-780-70 through 9 VAC 25-780-130; and

WHEREAS, on June 15, 2011, Brunswick County held a public hearing to accept public comment on the Lake Country Regional Water Supply Plan and all written comments submitted have received a written response as required; and

NOW, THEREFORE BE IT RESOLVED that the Brunswick County Board of Supervisors hereby adopts the Lake Country Regional Water Supply Plan the Regional Drought Response and Contingency Plan; and

BE IT FURTHER RESOLVED that the Brunswick County Board of Supervisors intends that the Lake Country Regional Water Supply Planning Program shall be revised to reflect changes in relevant data at least once every five years and shall be revised and resubmitted to DEQ every ten years in accordance with the regulation and sound planning practice.

Adopted this 15th day of June, 2011, by the Brunswick County Board of Supervisors.

Bernard L. Jones

Bernard L. Jones, Chairman
Brunswick County Board of Supervisors

Charlette T. Woolridge, Clerk
Brunswick County Board of Supervisors

PUBLIC NOTICE

Notice is hereby given that a public hearing will be held Wednesday, June 15, 2011, at 7:00 p.m., or shortly thereafter, by the Brunswick County Board of Supervisors to consider the following:

1. Adoption of the Lake Country Water Supply Plan and Conservation and Drought Response Plan. The purpose of this plan is to:
   - Ensure that adequate and safe drinking water is available;
   - Encourage, promote and protect all other beneficial uses of water; and
   - Promote conservation.

2. Adoption of the Drought Response Ordinance to become a part of the Code of the County of Brunswick Virginia. The purpose of this ordinance is to identify the conditions under which conservation measures should be implemented and the level of response needed based on the drought severity.

The public hearings will be held in the basement auditorium of the County Government Building located at 100 Tobacco Street, Lawrenceville, Virginia. Copies of the above referenced plan and ordinance are available for public inspection during the normal business hours (Monday through Friday, 8:30 a.m. until 5:00 p.m.) at the County Planning Director's Office, County Government Building, Room 102, Lawrenceville, Virginia. Telephone 434-848-0882.

Town of Alberta Program Documents:

Adopted Ordinance

Resolution of plan approval

Public Hearing record/notice

ARTICLE I. DROUGHT RESPONSE

Sec. 1.1. Short title.

This Article shall be known and may be cited as the Lake Country Regional Drought Response Ordinance.

Sec. 1.2. Purpose.

The purpose of this Article is to provide for the voluntary and mandatory restriction of use of the Alberta public water system during declared water shortages or water emergencies.

Sec. 1.3. Scope.

This Article shall apply to all Town of Alberta residents and businesses, which are served by the public water system.

Sec. 1.4. Drought Response Plan.

The Town Council shall adopt by resolution the Lake Country Regional Water Supply Plan, which includes the Lake Country Regional Drought Response and Contingency Plan.

Sec. 1.5. Drought Indicators.

Upon determination that drought indicator(s) exceed the threshold of a drought stage, as set forth in Lake Country Regional Drought Response and Contingency Plan as outlined in Chapter 7 and Section B and Section C of the Lake Country Regional Water Supply Plan, the Town Council may declare a specific drought stage.

Sec. 1.6. Drought Stages.

The drought stages shall be Drought Watch, Drought Warning, and Drought Emergency, as determined by the Town Council, pursuant to the Lake Country Regional Drought Response and Contingency Plan and State Water Control Board regulation 9 VAC 25-120.

Sec. 1.7. Declaration.

Upon notification to the Town Council that a drought stage exists, as defined in Sec. 1.6 of this Ordinance, the Council may issue a declaration of a drought stage. The Town of Alberta may declare a drought stage in the absence of a declaration by the Commonwealth of Virginia.

Sec. 1.8. Drought Stage Responses

Upon declaration by the Town Council of a Drought Watch or Drought Warning, voluntary conservation measurers will be requested of residents and businesses as set forth in the Lake Country Regional Drought Response and Contingency Plan. Upon declaration of a Drought Emergency, mandatory restrictions shall apply as set forth in the Plan.

Sec. 1.9. Waiver of Restrictions.

Upon prior written request by an individual, business, or other water user, the Town Council, or its designee, may permit less than full compliance with any drought restrictions if good cause can be shown, including evidence that the applicant is affected in a substantial manner not common to other businesses or persons generally. No waiver shall be granted by the Town Council or its designee unless the Council or its designee determines that the public health, safety, and welfare will not be adversely affected by the waiver. All waivers granted by the Council of its designee shall be reported at the Council's next regular or special meeting.

Sec. 1.10. Penalties.

Any violation of this ordinance shall constitute a misdemeanor, punishable by a fine of not less than one hundred dollars ($100) and not more than five hundred dollars ($500). Each act or each day's continuation of the violation shall be considered a separate offense.

Town of Alberta
P. O. Box 157
Alberta, VA 23821

RESOLUTION

Whereas, Virginia State Water Control Board regulation *Title 9 VAC 25-780* requires that all counties, cities and towns in the Commonwealth of Virginia submit a local water supply plan or participate in a regional planning unit in the submittal of a regional water supply plan to the State Board; and

Whereas, Town of Alberta in conjunction with the Southside Planning District Commission wishes to participate in a regional effort to coordinate and develop a district-wide Water Supply Plan; and

Whereas, the Southside Planning District Commission will serve as applicant and project coordinator in the preparation of the Southside Regional Water Supply Plan which is to be developed as a multi-year project;

Now Therefore Be It Resolved that Gail P. Moody is authorized to sign and submit the necessary documentation to the Department of Environmental Quality (DEQ) related to application and implementation of this project;

Be It Further Resolved that the Town of Alberta hereby agrees to provide information towards this Phase I application.

Adopted this 11th day of July 2011 by the Alberta Town Council.

Melissa Parrish

Melissa Parrish, Mayor

ATTEST:

Linda Kelm

Phone: (434) 949-7443
Fax: (434) 949-0643
Email: alberta@meckcom.net

Park Drive, Lawrenceville Va. 23868 or by submitting a request to info@fiberight.com. Written comments may be submitted at any time during the comment period via e-mail to the following address: info@fiberight.com. Alternatively, written comments can be mailed to: Fiberight 853 Industrial Park Drive, Lawrenceville, Va 23868. Comments must include the name and address of the person commenting as well as a brief statement regarding the interest of the person commenting and how the operation of the facility may affect the citizen.

6/292tp

PUBLIC NOTICE
NOTICE OF PUBLIC HEARING

The Alberta Town Council and the Alberta Planning Commission will hold a joint public hearing on Monday, July 11, 2011 at 6:45 p.m. at the Alberta Town Office to solicit input on the request for a Conditional Use Permit to allow a two family dwelling at 101 East Third Avenue submitted by Sherry Howerton.

Further Information can be secured by contacting the Town of Alberta, 136 W. First Avenue, Alberta, Virginia, 434-949-7443. 6/292tc

PUBLIC NOTICE
TOWN OF ALBERTA
PUBLIC NOTICE

Notice is hereby given that the Alberta Town Council will hold a Public Hearing on Monday, July 11, 2011, at 7:15 p.m. at the Alberta Town Office to consider the following:

To receive public comments and take action

PUBLIC NOTICE

concerning a proposed resolution and drought ordinance for the Lake Country Regional Water Supply Plan, under regulation Title 9 VAC 25-780 of the Virginia State Water Control Board.

A copy of the proposed ordinance is available for review during normal business hours at the Alberta Town Office located at 136 W. First Ave, Alberta, Va. For further information contact the Alberta Town Office 434-949-7443. 6/292tc

478-9630. www.progressiveauctionsva.com <http://www.progressiveauctionsva.com> (7/6)IM

HELP WANTED

Personal Care Agency is seeking a caring RN who enjoys working with the elderly and making a difference in their lives by completing scheduled in home assessments. The RN candidate will be available to complete assessments in the Mecklenburg, Brunswick and surrounding areas. For more information about how you can help elderly people in your area and get paid please call Cindy at 689-3032. 6/292tc

OUTSIDE SALES. QUALITY LEADS PROVIDED. Average $150-$300/day. Overnight travel required. 513-942-0391.6/294tm

stores.com or mail via: Mid-Atlantic Convenience Stores, 1011 Boulders Spring Drive, Richmond, VA 23225, Att: Debbye Mahan, Sr. Human Resources Manager (6/224tpIM

Mentor (Part Time) UMFS seeking part time mentors to provide one-on-one mentoring services to male youth. Teaches and models social skills, anger management, and independent living skills. Provides therapeutic recreation. A Bachelor's degree in a human services field. Clients are in and around South Hill. For more information or to apply, visit www.umfs.org. Resumes can be submitted online or faxed to (804) 239-1076. EOE (WS6/29p

NOW HIRING. SELL AVON. START TODAY. Call 434-532-5479.6/292tpIM

apartment upstairs, strong traffic count and excellent visibility from US 58. $65,000 or best offer. Will be sold Sunday, June 26, 2011 to the highest bidder. Call 434-953-8794 6/222tpsh

2 OFFSHORE LOTS - with 2 DW's; 3BR/2BA each, deeded water rights to Lake Gaston rec area for swimming/boat ramp. $49,900 - $74,900. 252-586-2114. (7/13wcc)

BUY SELL TRADE

The Improvement Association Head Start Hiring

Teacher: Responsibilities include planning and implementing learning experiences that advance the intellectual and physical development of children ages 3-5 years, including their understanding of early math, literacy, and science skills. Applicant must have at least an Associate's Degree in Early Childhood Education or a related field with 2 years experience working with pre-schoolers. Baccalaureate Degree Preferred.

Teacher Assistant: Provide assistance to teacher in planning and implementing learning experiences that advance the intellectual and physical development of children ages 3-5 years, including their understanding of early math, literacy, and science skills. Applicant must have at least a Child Development Associate Credential or enrolled in a program leading to an associates or baccalaureate degree.

Cook/Custodian: Responsibilities include, planning and preparing daily meals and snacks according to USDA guidelines, clean and sanitize food preparation areas and monitoring inventory. Minimum requirements include a High School Diploma or GED and experience in food preparation. ServSafe Certification Preferred.

Submit resume by July 8, 2011 to:
The Improvement Association
Attn: Human Resource Officer
1750 East Atlantic Street
Emporia, VA 23847
rmaitland@impassoc.org

EOE
Drug Free Workplace

1ST PART

Town of Brodnax Program Documents:

Adopted Ordinance

Resolution of plan approval

Public Hearing record/notice

A Two County Town

Town of Brodnax

Incorporated 1915

Mayor
Garland W. Baird

Town Manager
M. Wayne Tanner

Clerk-Treasurer
J. Woodrow Kidd

AN ORDINANCE TO AMEND CERTAIN SECTIONS OF THE CODE OF THE TOWN OF BRODNAX, VIRGINIA

AN AMENDMENT

BE IT ENACTED by the Town Council of the Town of Brodnax, Virginia, in regular Session assembled that:

Chapter 86 Utilities be amended by adding the following language to Article II. Water.

Division 5. Drought Response

Sec. 86-118, Short Title.

This Ordinance shall be known and may be cited as the Lake Country Regional Drought Response Ordinance. (Ord. No. 2011-2)

Sec. 86-119. Purpose.

The purpose of this Ordinance is to provide for the voluntary and mandatory restriction of use of the Roanoke River Service Authority public water supply system during declared water shortages or water emergencies.

Sec. 86-120. Scope.

This Ordinance shall apply to all Town of Brodnax residents and businesses, which are served by
the public water system.

Sec. 86-121. Drought Response Plan.

The Town Council shall adopt by resolution the Lake Country Regional Water Supply Plan, which includes the Lake Country Regional Drought Response and Contingency Plan.

A Two County Town

Town of Brodnax

Incorporated 1915

Mayor
Garland W. Baird

Town Manager
M. Wayne Tanner

Clerk-Treasurer
J. Woodrow Kidd

Sec. 86-122 Drought Indicators.

Upon determination that drought indicator(s) exceed the threshold of a drought stage, as set forth in Lake Country Regional Drought Response and Contingency Plan as outlined in Chapter 7 and Section B and Section C of the Lake Country Regional Water Supply Plan, the Council may declare a specific drought stage.

Sec. 86-123. Drought Stages.

The drought stages shall be Drought Watch, Drought Warning, and Drought Emergency, as determined by the Council, pursuant to the Lake Country Regional Drought Response and Contingency Plan and State Water Control Board regulation 9 VAC 25-120.

Sec. 86.124. Declaration

Upon notification to the Council that a drought stage exists, the Council may issue a declaration of a drought stage. The Town may declare a drought stage in the absence of a declaration by the Commonwealth of Virginia.

Sec. 86-125. Drought Stage Responses.

Upon declaration by the Council of a Drought Watch or Drought Warning, voluntary conservation measurers will be requested of residents and businesses as set forth in the Lake Country Regional Drought Response and Contingency Plan. Upon declaration of a Drought Emergency, mandatory restrictions shall apply as set forth in the Plan.

Sec. 86-126. Waiver of Restrictions.

Upon prior written request by an individual, business, or other water user, the Council, or its designee, may permit less than full compliance with any drought restrictions if good cause can be shown, including evidence that the applicant is affected in a substantial manner not common to other businesses or persons generally. No waiver shall be granted by the Council or its designee unless the Council or its designee determines that the public health, safety, and welfare will not be adversely affected by the waiver. All waivers granted by the Council of its designee shall be reported at the Council's next regular or special meeting.

28 Main Street • P. O. Box K • Brodnax, Virginia 23920
434-729-3191 • Fax: 434-729-3192

Town of Brodnax

Incorporated 1915

A Two County Town

Mayor
Garland W. Baird

Town Manager
M. Wayne Tanner

Clerk-Treasurer
J. Woodrow Kidd

Sec. 86-127. Penalties.

Any violation of this ordinance shall constitute a misdemeanor, punishable by a fine of not less than one hundred dollars ($100) and not more than five hundred dollars ($500). Each act or each day's continuation of the violation shall be considered a separate offense.

Done in the Town of Brodnax, Virginia this 3rd day of August, 2011.

By: _____
Garland W. Baird, Mayor

ATTEST: _____
J. Woodrow Kidd, Clerk-Treasurer

TOWN OF BRODNAX
INCORPORATED
1915
VIRGINIA

28 Main Street • P. O. Box K • Brodnax, Virginia 23920
434-729-3191 • Fax: 434-729-3192

Town of Brodnax

Incorporated 1915

A Two County Town

Mayor
Garland W. Baird

Town Manager
M. Wayne Tanner

Clerk-Treasurer
J. Woodrow Kidd

A RESOLUTION APPROVING THE LAKE COUNTRY REGIONAL WATER SUPPLY PLAN

WHEREAS, Virginia State Water Control Board Regulation 9 VAC 25-780, Local and Regional Water Supply Planning, requires all counties, cities and towns in the Commonwealth of Virginia to prepare and submit a water supply planning program to the Department of Environmental Quality (DEQ); and

WHEREAS, the following elements must be included in all local or regional water supply programs:

A description of existing water sources in accordance with 9VAC25-780-70;
A description of existing water use in accordance with the requirements of VAC25-780-80;
A description of existing water resource conditions in accordance with the requirements of 9VAC25-780-90;
An assessment of projected water demand in accordance with the requirements of 9VAC25-780-100;
A description of water management actions in accordance with the requirements of 9VAC25-780-110 and 9VAC-780-120;
A statement of need in accordance with the requirements of 9VAC25-780-130;
An alternatives analysis that identifies potential alternatives to address projected deficits in water supplies in accordance with the requirements of 9VAC25-780-130;
A map or maps identifying important elements of the program that may include existing environmental resources, existing water sources, significant existing water uses, and proposed new sources;
A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter;
A resolution approving the plan from each local government that is party to the plan; and
A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received; and

WHEREAS, the Town of Brodnax is part of the Lake Country Regional Water Supply Plan which
includes Brunswick and Mecklenburg Counties and the towns of Alberta, Brodnax, Boydton, Chase City,
Clarksville, LaCrosse, Lawrenceville and South Hill; and

Town of Brodnax

Incorporated 1915

A Two County Town

Mayor
Garland W. Baird

Town Manager
M. Wayne Tanner

Clerk-Treasurer
J. Woodrow Kidd

WHEREAS, the Lake Country Regional Water Supply Plan was developed in accordance with Virginia Regulations 9 VAC 25-780-70 through 9 VAC 25-780-130; and

WHEREAS, on August 3, 2011 the Town of Brodnax held a public hearing to accept public comment on the Lake Country Regional Water Supply Plan and all written comments submitted have received a written response as required; and

NOW, THEREFORE BE IT RESOLVED that the Council of the Town of Brodnax hereby adopts the
Lake Country Regional Water Supply Plan and the Regional Drought Response and Contingency Plan; and

BE IT FURTHER RESOLVED that the Council of the Town of Brodnax intends that the Lake Country Regional Water Supply Planning Program shall be revised to reflect changes in relevant data at least once every five years and shall be revised and resubmitted to DEQ every ten years in accordance with the regulation and sound planning practice.

Adopted this 3rd day of August, 2011 by the Town Council of Brodnax, Virginia.

Garland W. Baird, Mayor

Attest:

J. Woodrow Kidd, Clerk-Treas.

TOWN OF BRODNAX INCORPORATED 1915 VIRGINIA

28 Main Street • P. O. Box K • Brodnax, Virginia 23920
434-729-3191 • Fax: 434-729-3192

twenty-one (21) days of the date of sale.

The buyer shall be furnished a trustee's deed conveying the property by Special Warranty of Title and the Trustee shall pay the real estate taxes to the date of settlement and the grantor's tax thereon.

For Further Information Contact:
James A. Butts, III, Sole Acting Trustee, Butts & Butts, Attorneys, P.O. Box 446, South Hill, Virginia 23970 (434) 447-7155 e-mail: buttslaw@valegal.net (WO7/20c

LEGALS

VIRGINIA: IN THE CIRCUIT COURT OF THE COUNTY OF BRUNSWICK

ELLA M. MAJETTE, Plaintiff vs.

ROBERT CARSON, if he be living, and if not, the heirs at law of ROBERT CARSON, deceased, who are proceeded against as "Parties Unknown"

HELEN MAJETTE, ANGELA CARSON, SHIRLEY ROWE, FRANCINE BUGG, SHERRYL CARSON

ROBERT CARSON, JR., if he be living, and if not, the heirs at law of ROBERT CARSON, JR., deceased, who are proceeded against as "Parties Unknown", Defendants

ORDER OF PUBLICATION

The object of this suit is to effect a partition among the owners by sale or otherwise of the real property consisting of 9.3 acres, situate in Totaro Magisterial District, being

LEGALS

Public Hearing Notice

A Public Hearing will be held at 7:30 P.M. on August 3, 2011 at the Municipal Building in the Town of Brodnax located at 28 Main Street, Brodnax, Virginia 23920 to hear comments regarding the Lake Country Water Supply Plan and The Town's proposed Drought Response Ordinance as required by the Virginia State Water Control Board. The Plan and Ordinance may be reviewed at the Clerk's Office in the Municipal Building by Contacting J. Woodrow Kidd, Clerk-Treasurer. (WO7/27c

LEGALS

NOTICE OF FORECLOSURE
LOTS 33R AND 34R, PEA HILL SHORES
POWELLTON MAGISTERIAL DISTRICT,
BRUNSWICK COUNTY

SALE DATE: Friday, August 12, 2011 @ 10:00 A.M.

TRUSTEE'S SALE OF PROPERTY described as Lots 33R and 34R, Pea Hill Shores, Brunswick County, Virginia, being described as 1.25 acres and 0.90 acres on the plat of Crutchfield & Associates, Inc., dated March 12, 1992, recorded in Plat Book 12, Page 265; and further identified for tax purposes as tax map number: 101-P-2-33 & 34.

In execution of a certain Deed of Trust dated March 10, 2004, recorded in

SOUTH HILL ENTERPRISE 7-20-11

Town of Lawrenceville Program Documents:

Adopted Ordinance

Resolution of plan approval

Public Hearing record/notice

ARTICLE ___. DROUGHT RESPONSE

Sec. ___. Short title.

This Article shall be known and may be cited as the Lake Country Regional Drought Response Ordinance.
(Ord. No. _____)

Sec. ____. Purpose.

The purpose of this Article is to provide for the voluntary and mandatory restriction of use of the Lawrenceville public water system during declared water shortages or water emergencies.

Sec. ____. Scope.

This Article shall apply to all Lawrenceville residents and businesses, which are served by the public water system.

Sec. ____. Drought Response Plan.

The Town Council shall adopt by resolution the Lake Country Regional Water Supply Plan, which includes the Lake Country Regional Drought Response and Contingency Plan.

Sec. ____. Drought Indicators.

Upon determination that drought indicator(s) exceed the threshold of a drought stage, as set forth in Lake Country Regional Drought Response and Contingency Plan as outlined in Chapter 7 and Section B and Section C of the Lake Country Regional Water Supply Plan, the Town Council may declare a specific drought stage.

Sec. ____. Drought Stages.

The drought stages shall be Drought Watch, Drought Warning, and Drought Emergency, as determined by the Town Council, pursuant to the Lake Country Regional Drought Response and Contingency Plan and State Water Control Board regulation 9 VAC 25-120.

Sec. ____. Declaration.

Upon notification to the Town Council that a drought stage exists, as defined in Sec. ___ of this Ordinance, the Council may issue a declaration of a drought stage. The *Town of Lawrenceville* may declare a drought stage in the absence of a declaration by the Commonwealth of Virginia.

Sec. ____. Drought Stage Responses

Upon declaration by the Town Council of a Drought Watch or Drought Warning, voluntary conservation measurers will be requested of residents and businesses as set forth in the Lake Country Regional Drought Response and Contingency Plan. Upon declaration of a Drought Emergency, mandatory restrictions shall apply as set forth in the Plan.

Sec. ____. Waiver of Restrictions.

Upon prior written request by an individual, business, or other water user, the Town Council, or its designee, may permit less than full compliance with any drought restrictions if good cause can be shown, including evidence that the applicant is affected in a substantial manner not common to other businesses or persons generally. No waiver shall be granted by the Town Council or its designee unless the Council or its designee determines that the public health, safety, and welfare will not be adversely affected by the waiver. All waivers granted by the Council of its designee shall be reported at the Council's next regular or special meeting.

Sec. ____. Penalties.

Any violation of this ordinance shall constitute a misdemeanor, punishable by a fine of not less than one hundred dollars ($100) and not more than five hundred dollars ($500). Each act or each day's continuation of the violation shall be considered a separate offense.

Adopted by Lawrenceville Town Council on June 14, 2011

Alice B Talbert Clerk

Alice B. Talbert

A RESOLUTION APPROVING THE LAKE COUNTRY REGIONAL WATER SUPPLY PLAN

WHEREAS, Virginia State Water Control Board Regulation 9 VAC 25-780, Local and Regional Water Supply Planning, requires all counties, cities and towns in the Commonwealth of Virginia to prepare and submit a water supply planning program to the Department of Environmental Quality (DEQ); and

Whereas, the following elements must be included in all local or regional water supply programs:

- A description of existing water sources in accordance with 9VAC25-780-70;
- A description of existing water use in accordance with the requirements of 9VAC25-780-80;
- A description of existing water resource conditions in accordance with the requirements of 9VAC25-780-90;
- An assessment of projected water demand in accordance with the requirements of 9VAC25-780-100;
- A description of water management actions in accordance with the requirements of 9VAC25-780-110 and 9VAC780-120;
- A statement of need in accordance with the requirements of 9VAC25-780-130;
- An alternatives analysis that identifies potential alternatives to address projected deficits in water supplies in accordance with the requirements of 9VAC25-780-130;
- A map or maps identifying important elements of the program that may include existing environmental resources, existing water sources, significant existing water uses, and proposed new sources;
- A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter;
- A resolution approving the plan from each local government that is party to the plan; and
- A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received, and

WHEREAS, the Town of Lawrenceville is part of the Lake Country Regional Water Supply Plan which includes Brunswick and Mecklenburg Counties and the towns of Alberta, Brodnax, Boydton, Chase City, Clarksville, La Crosse, Lawrenceville and South Hill; and

WHEREAS, the Lake Country Regional Water Supply Plan was developed in accordance with Virginia Regulation 9 VAC 25-780-70 through 9 VAC 25-780-130; and

WHEREAS, on June 14, 2011, the Town of Lawrenceville held a public hearing to accept public comment on the Lake Country Regional Water Supply Plan and all written comments submitted have received a written response as required; and

NOW, THEREFORE BE IT RESOLVED that the Town Council of the Town of Lawrenceville hereby adopts the Lake Country Regional Water Supply Plan and the Regional Drought Response and Contingency Plan; and

BE IT FURTHER RESOLVED that the Town Council of the Town of Lawrenceville intends that the Lake Country Regional Water Supply Planning Program shall be revised to reflect changes in relevant data at least once every five years and shall be revised and resubmitted to DEQ every ten years in accordance with the regulation and sound planning practice.

PASSED, APPROVED AND ADOPTED by the Town Council of the Town of Lawrenceville at a meeting held on June 14, 2011.

Douglas R. Pond, Mayor

ATTEST:

Alice B. Talbert, Clerk

Robyn

Classifieds

PUBLIC NOTICE

Notice is hereby given for a public hearing of the Lawrenceville Town Council in the Council Chambers on Tuesday, June 14, 2011, at 7:30 p.m. at 400 North Main Street, Lawrenceville, Virginia, to receive public comment on the Proposed Lake Country Regional Drought Response Ordinance and Lake Country Regional Water Supply Plan.

The Proposed Ordinance and Water Supply Plan are available for review at the Town Office, Monday – Friday during regular business hours of 8:30 a.m. to 5 p.m. 5/252tc

PUBLIC NOTICE

PUBLIC NOTICE

Notice is hereby given that a public hearing will be held Wednesday, June 15, 2011, at 7:00 p.m., or shortly thereafter, by the Brunswick County Board of Supervisors to consider the following:

1. Adoption of the Lake Country Water Supply Plan and Conservation and Drought Response Plan. The purpose of this plan is to:
Ensure that adequate and safe drinking water is available;
Encourage, promote and protect all other beneficial uses of water; and
∑ Promote conservation.

2. Adoption of the Drought Response Ordinance to become a part of the Code of the County of Brunswick Virginia. The purpose of this ordinance is to identify the conditions under which conservation measures should be implemented and the level of response needed based on the drought severity.

The public hearings will be held in the basement auditorium of the County Government Building located at 100 Tobacco Street, Lawrenceville, Virginia. Copies of the above referenced plan and ordinance are available for public inspection during the normal business hours (Monday through Friday, 8:30 a.m. until 5:00 p.m.) at the County Planning Director's Office, County Government Building, Room 102

PUBLIC NOTICE

information, contact the Alberta Town Office, 434-949-7443. 6/12tc

PUBLIC NOTICE

W236AD POST-FILING ANNOUNCEMENT

On May 12, 2011, an application for license renewal was filed by Positive Alternative Radio, Inc. with the Federal Communications Commission for FM Translator Station W236AD at Lawrenceville, Virginia.

The W236AD transmitting location is located at geographical coordinates north latitude 36 ˚ 45 ˚ 21; west longitude 77 ˚ 51 ˚ 05. W236AD operates on Channel 236 with an effective radiated power of 250 watts.6/11tc

BIDS REQUESTED

The Town of Alberta is accepting bids for grass cutting for the 2011/2012 fiscal year, beginning July 1, 2011. Please stop by the Town office for a list of locations. All bidders must be insured and provide a copy of their insurance certificate.

Bid deadline:
June 8, 2011
by 2:00 p.m.

Contact:
434-949-7443
for information.

Auction

Absolute Auction Selling the contents of Terry's Auto Service 1610 Main Street Victoria VA 23974

Saturday May 28, 2011 * 9:30 AM

HELP WANTED

proficiency, strong organizational and motivational skills, college degree preferred. Location: Emporia. Full-Time w/ Salary, Health Insurance & Benefits. Forward resume to Human Resources, Email: hrmhiring@aol.com EEOC/DFW 4tpcc

Part-Time Maintenance/ Custodial Worker

Maintenance/ Custodial Worker will perform general repairs to the Head Start facilities and offices throughout the service area. Will be responsible for cleaning the Head Start facilities and

FOR SALE

2 1/2 ton air conditioner and a 3 ton air handler. Good condition, Both for $200 or best offer. 434-848-1549 5/25enc

ITEMS FOR SALE - 16' drywall lift $225; 10" Delta mitresaw 65 10" craftsman tablesaw $125; wallmount gas heater $125; new free standing gas heater $250. Call weekend 252-537-2394 or 757 562-2243.6/1 pd LGG_O

FREE HEAT AND HOT WATER. Eliminate monthly heating bills with Classic Outdoor Wood Furnace from Central Boiler. Call today: 804-469-3478 (6/1)IM

FOR RENT

5 bedrooms, 3 baths South Hill - $1099/ month with security deposit, selling price $240,000. Rent to own option available. 757-286-6322 (WS6/1p

Church for Rent - seats 100, 2693 Highway 47 South Hill, Virginia - $125.00 weekly, includes utilities. 757-636-0672. (Wstfnp

Mecklenburg County Program Documents:

Adopted Ordinance

Resolution of plan approval

Public Hearing record/notice

DROUGHT RESPONSE ORDINANCE

Sec. 1. Short title.

This Article shall be known and may be cited as the Lake Country Regional Drought Response Ordinance.

Sec. 2. Purpose.

The purpose of this Article is to provide for the voluntary and mandatory restriction of use of the Roanoke River Service Authority public water supply system during declared water shortages or water emergencies.

Sec. 3. Scope.

This Article shall apply to all Mecklenburg County residents and businesses, which are served by the public water system.

Sec. 4. Drought Response Plan.

The Board of Supervisors shall adopt by resolution the Lake Country Regional Water Supply Plan, which includes the Lake Country Regional Drought Response and Contingency Plan.

Sec. 5. Drought Indicators.

Upon determination that drought indicator(s) exceed the threshold of a drought stage, as set forth in Lake Country Regional Drought Response and Contingency Plan as outlined in Chapter 7 and Section B and Section C of the Lake Country Regional Water Supply Plan, the Board of Supervisors may declare a specific drought stage.

Sec. 6. Drought Stages.

The drought stages shall be Drought Watch, Drought Warning, and Drought Emergency, as determined by the Board of Supervisors, pursuant to the Lake Country Regional Drought Response and Contingency Plan and State Water Control Board regulation 9 VAC 25-120.

Sec. 7. Declaration.

Upon notification to the Board of Supervisors that a drought stage exists, as defined in Sec. 6 of this Ordinance, the Board may issue a declaration of a drought stage. The County of Mecklenburg may declare a drought stage in the absence of a declaration by the Commonwealth of Virginia.

Sec. 8. Drought Stage Responses

Upon declaration by the Board of Supervisors of a Drought Watch or Drought Warning, voluntary conservation measurers will be requested of residents and businesses as set forth in the Lake Country Regional Drought Response and Contingency Plan. Upon declaration of a Drought Emergency, mandatory restrictions shall apply as set forth in the Plan.

Sec. 9. Waiver of Restrictions.

Upon prior written request by an individual, business, or other water user, the Board of Supervisors, or its designee, may permit less than full compliance with any drought restrictions if good cause can be shown, including evidence that the applicant is affected in a substantial manner not common to other businesses or persons generally. No waiver shall be granted by the Board or its designee unless the Board or its designee determines that the public health, safety, and welfare will not be adversely affected by the waiver. All waivers granted by the Board of Supervisors of its designee shall be reported at the Board's next regular or special meeting.

Sec. 10. Penalties.

Any violation of this ordinance shall constitute a misdemeanor, punishable by a fine of not less than one hundred dollars ($100) and not more than five hundred dollars ($500). Each act or each day's continuation of the violation shall be considered a separate offense.

Mecklenburg County Board of Supervisors

Post Office Box 307 • Boydton, Virginia 23917

H. Wayne Carter III
County Administrator
Emergency Services Director

A RESOLUTION APPROVING THE LAKE COUNTRY REGIONAL WATER SUPPLY PLAN

WHEREAS, Virginia State Water Control Board Regulation 9 VAC 25-780, Local and Regional Water Supply Planning, requires all counties, cities and towns in the Commonwealth of Virginia to prepare and submit a water supply planning program to the Department of Environmental Quality (DEQ); and

Whereas, the following elements must be included in all local or regional water supply programs:

- A description of existing water sources in accordance with 9VAC25-780-70;
- A description of existing water use in accordance with the requirements of 9VAC25-780-80;
- A description of existing water resource conditions in accordance with the requirements of 9VAC25-780-90;
- An assessment of projected water demand in accordance with the requirements of 9VAC25-780-100;
- A description of water management actions in accordance with the requirements of 9VAC25-780-110 and 9VAC780-120;
- A statement of need in accordance with the requirements of 9VAC25-780-130;
- An alternatives analysis that identifies potential alternatives to address projected deficits in water supplies in accordance with the requirements of 9VAC25-780-130;
- A map or maps identifying important elements of the program that may include existing environmental resources, existing water sources, significant existing water uses, and proposed new sources;
- A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter;
- A resolution approving the plan from each local government that is party to the plan; and
- A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received, and

WHEREAS, Mecklenburg County is part of the Lake Country Regional Water Supply Plan which includes Brunswick and Mecklenburg Counties and the towns of Alberta, Brodnax, Boydton, Chase City, Clarksville, La Crosse, Lawrenceville and South Hill; and

WHEREAS, the Lake Country Regional Water Supply Plan was developed in accordance with Virginia Regulation 9 VAC 25-780-70 through 9 VAC 25-780-130; and

WHEREAS, on June 13, 2011, Mecklenburg County held a public hearing to accept public comment on the Lake Country Regional Water Supply Plan and all written comments submitted have received a written response as required; and

NOW, THEREFORE BE IT RESOLVED that the Board of Supervisors of Mecklenburg County hereby adopts the Lake Country Regional Water Supply Plan and the Regional Drought Response and Contingency Plan; and

BE IT FURTHER RESOLVED that the Board of Supervisors of Mecklenburg County intends that the Lake Country Regional Water Supply Planning Program shall be revised to reflect changes in relevant data at least once every five years and shall be revised and resubmitted to DEQ every ten years in accordance with the regulation and sound planning practice.

PASSED, APPROVED AND ADOPTED by the Board of Supervisors of Mecklenburg County at a meeting held on June 13, 2011.

Clerk

South Hill Enterprise

PROOF OF PUBLICATION

PUBLIC HEARING

NOTICE IS HEREBY GIVEN, that a Public Hearing will be held on Monday, June 13, 2011, beginning at 7:00 PM by the Mecklenburg County Board of Supervisors. This meeting will take place in the Board Meeting Room, Goode Bank Building, located at 350 Washington Street, Boydton, VA. This meeting will be to consider the following:

A drought response ordinance which implements the Drought Management Plan which is part of the overall Water Supply Plan.

Additional information is available in the County Administrator's Office, 350 Washington Street, Boydton, VA. Telephone 434-738-6181.

(WS8/1c

This is to certify that the order of publication hereto attached was published in The South Hill Enterprise, a newspaper covering Mecklenburg and Brunswick Counties with an office in South Hill, Virginia for 2 issues, beginning with the issue of May 29, 2011 and ending with the issue of June 1, 2011.

Total Cost $ 78.75

Barbara Arthur
Office Manager

RECEIVED JUN 0 3 2011

Town of Boydton Program Documents:

Adopted Ordinance

Resolution of plan approval

Public Hearing record/notice

ARTICLE IV

DROUGHT RESPONSE

Sec. 34.450 Title.

This Article shall be known and may be cited as the Lake Country Drought Response Ordinance.

Sec. 34.451 Purpose.

The purpose of this Article is to provide for the voluntary and mandatory restriction of use of Boydton public water supply system serving the Town of Boydton during declared water shortages or water emergencies.

Sec. 34.452 Scope.

This article shall apply to all Boydton residents and Businesses which are served by the public water system.

Sec. 43.453 Drought Response Plan.

The Town Council shall adopt by resolution the Lake Country Regional Water Supply Plan, which includes the Lake Country Regional Drought Response and Contingency Plan.

Sec. 34.454 Drought Indicators.

Upon determination that drought indicator(s) exceed the threshold of a drought stage, as set forth in the Lake Country Regional Drought Response and Contingency Plan as outlined in chapter 7, Section B and Section C of the Lake Country Regional Water Supply Plan, the Council may declare a specific drought stage.

Sec. 34.455 Drought Stages.

The drought stages shall be Drought watch, Drought Warning, and Drought Emergency, as determined by the Council, pursuant to the Lake Country Regional Drought Response and Contingency Plan and State Water Control Board regulation 9 VAC 25-120.

Sec. 34.456 Declaration.

Upon notification to the Council that a drought stage exists, as defined in Sec. 34.455 of this Ordinance, the Council may issue a declaration of a drought stage. The Town of Boydton may declare a drought stage in the absence of a declaration by the Commonwealth of Virginia.

Sec. 34.457 Drought Stage Responses.

Upon declaration by the Council of a Drought Watch or Drought Warning, voluntary conservation measurers will be requested of residents and businesses as set forth in the Lake Country Regional Drought Response and Contingency Plan. Upon declaration of a Drought Emergency, mandatory restrictions shall apply as set forth in the plan.

Sec. 34.458 Waiver of Restrictions.

Upon prior written request by an individual, business, or other water user, the Council, or its designee, may permit less than full compliance with any drought restrictions if good cause can be shown, including evidence that the applicant is affected in a substantial manner not common to other business or persons generally. No waver shall be granted by the Council, or its designee unless the Council, or its designee determines that the public health, safety, and welfare will not be adversely affected by the waver. All wavers granted by the Council, or its designee shall be reported at the Council's next regular or special meeting.

Sec. 34.459 Penalties.

Any person who shall violate any of the provisions of this Article shall, upon conviction thereof, be fined not less than one hundred dollars ($100.00), nor more than five hundred dollars ($500.00) as set forth in Sec. 1.14 Boydton Code.

A RESOLUTION APPROVING THE LAKE COUNTRY REGIONAL WATER SUPPLY PLAN

WHEREAS, Virginia State Water Control Board Regulation 9 VAC 25-780, Local and Regional Water Supply Planning, requires all counties, cities and towns in the Commonwealth of Virginia to prepare and submit a water supply planning program to the Department of Environmental Quality (DEQ); and

Whereas, the following elements must be included in all local or regional water supply programs:

- A description of existing water sources in accordance with 9VAC25-780-70;
- A description of existing water use in accordance with the requirements of 9VAC25-780-80;
- A description of existing water resource conditions in accordance with the requirements of 9VAC25-780-90;
- An assessment of projected water demand in accordance with the requirements of 9VAC25-780-100;
- A description of water management actions in accordance with the requirements of 9VAC25-780-110 and 9VAC780-120;
- A statement of need in accordance with the requirements of 9VAC25-780-130;
- An alternatives analysis that identifies potential alternatives to address projected deficits in water supplies in accordance with the requirements of 9VAC25-780-130;
- A map or maps identifying important elements of the program that may include existing environmental resources, existing water sources, significant existing water uses, and proposed new sources;
- A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter;
- A resolution approving the plan from each local government that is party to the plan; and
- A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received, and

WHEREAS, The Town of Boydton is part of the Lake Country Regional Water Supply Plan which includes Brunswick and Mecklenburg Counties and the towns of Alberta, Brodnax, Boydton, Chase City, Clarksville, La Crosse, Lawrenceville and South Hill; and

WHEREAS, the Lake Country Regional Water Supply Plan was developed in accordance with Virginia Regulation 9 VAC 25-780-70 through 9 VAC 25-780-130; and

WHEREAS, on June 14, 2011, The Town of Boydton held a public hearing to accept public comment on the Lake Country Regional Water Supply Plan and all written comments submitted have received a written response as required; and

NOW, THEREFORE BE IT RESOLVED that the Boydton Town Council of the Town of Boydton hereby adopts the Lake Country Regional Water Supply Plan and the Regional Drought Response and Contingency Plan; and

BE IT FURTHER RESOLVED that the Boydton Town Council of the Town of Boydton intends that the Lake Country Regional Water Supply Planning Program shall be revised to reflect changes in relevant data at least once every five years and shall be revised and resubmitted to DEQ every ten years in accordance with the regulation and sound planning practice.

PASSED, APPROVED, AND ADOPTED by the Boydton Town Council of the Town of Boydton at a meeting held on June 14, 2011.

Gerald W. Wrenn, Mayor

Attest:
Shirley S. Bowen, CMC
Clerk of Council

NOTICE OF PUBLIC HEARING

Town of Boydton Regional Water Supply Plan

Virginia Regulation 9 VAC 25-780, requires that all counties, cities and towns in the Commonwealth, prepare a water supply plan. A regional plan has been developed, which includes Brunswick and Mecklenburg Counties and the towns of Alberta, Brodnax, Boydton, Chase City, Clarksville, LaCrosse, Lawrenceville, and South Hill. The regulation also requires that each locality hold a public hearing for public comment before adopting the plan. Each locality has approved to hold a Public Hearing and announced their intent to adopt the Regional Water Supply Plan.

The Public Hearing for the Town of Boydton will be held on Tuesday, July 14, 2011, at 7:30 P.M. in the Council Chambers of the Boydton Town Hall.

A copy of the plan is available at the Town Hall, Boydton, VA between the hours of 9:00 A.M. – 4:00 P.M. or you may contact Gerald W. Wrenn, Mayor at 434-738-6344, Ext. 23.

Town of Chase City Program Documents:

Adopted Ordinance

Resolution of plan approval

Public Hearing record/notice

TITLE 5

WATER AND SEWER
CHAPTER 1A

ARTICLE A. DROUGHT RESPONSE

Sec. 5-1A-1. Short title

This Article shall be known and may be cited as the Lake Country Regional Drought Response Ordinance, which will be on file in Town of Chase City's Municipal Building vault.

Sec. 5-1A-2. Purpose

The purpose of this Article is to provide for the voluntary and mandatory restriction of use of the public water supply system serving the Town of Chase City during declared water shortages or water emergencies.

Sec. 5-1A-3. Scope

This Article shall apply to all Chase City residents and businesses, which are served by the public water system.

Sec. 5-1A-4. Drought Response Plan

The Town Council shall adopt by resolution the Lake Country Regional Water Supply Plan, which includes the Lake Country Regional Drought Response and Contingency Plan.

Sec. 5-1A-5. Drought Indicators

Upon determination that drought indicator(s) exceed the threshold of a drought stage, as set forth in Lake Country Regional Drought Response and Contingency Plan as outlined in *Chapter 7 and Section B and Section C* of the Lake Country Regional Water Supply, the Council may declare a specific drought stage.

Sec. 5-1A-6. Drought Stages

The drought stages shall be Drought Watch, Drought Warning and Drought Emergency, as determined by the Council, pursuant to the Lake Country Regional Drought Response and Contingency Plan and State Water Control Board regulation 9 VAC 25-120.

Sec. 5-1A-7. Declaration

Upon notification to the Council that a drought stage exists, as defined in Sec. 5-1A-6 of this Ordinance, the Council may issue a declaration of a drought stage. The Town of Chase City may declare a drought stage in the absence of a declaration by the Commonwealth of Virginia.

Sec. 5-1A-8. Drought Stage Responses

Upon declaration by the Council of a Drought Watch or Drought Warning, voluntary conservation measurers will be requested of residents and businesses as set forth in the Lake Country Regional Drought Response and Contingency Plan. Upon declaration of a Drought Emergency, mandatory restrictions shall apply as set forth in the Plan.

Sec. 5-1A-9. Waiver of Restrictions

Upon prior written request by an individual, business, or other water user, the Town Council, or its designee, may permit less than full compliance with any drought restrictions if good cause can be shown, including evidence that the applicant is affected in a substantial manner not common to other businesses or persons generally. No waiver shall be granted by the Council or its designee unless the Council or its designee determines that the public health, safety, and welfare will not be adversely affected by the waiver. All waivers granted by the Council of its designee shall be reported at the Council's next regular or special meeting.

Sec. 5-1A-10. Penalties.

Any violation of this ordinance shall constitute a misdemeanor, punishable by a fine of not less than one hundred dollars ($100) and not more than five hundred dollars ($500). Each act or each day's continuation of the violation shall be considered a separate offense.

Town of Chase City

319 North Main Street
Chase City, Virginia 23924
(434) 372-5136
Fax: (434) 372-2587

A RESOLUTION APPROVING THE LAKE COUNTRY REGIONAL WATER SUPPLY PLAN

WHEREAS, Virginia State Water Control Board Regulations 9 VAC 25-780, Local and Regional Water Supply Planning, requires all counties, cities and towns in the Commonwealth of Virginia to prepare and submit a water supply planning program to the Department of Environmental Quality (DEQ); and

WHEREAS, the following elements must be included in all local or regional water supply programs:

- A description of existing water sources in accordance with 9VAC25-780-70;
- A description of existing water use in accordance with the requirements of 9VAC25-780-80;
- A description of existing water resource conditions in accordance with the requirements of 9VAC25-780-90;
- An assessment of projected water demand in accordance with the requirements of 9VAC25-780-100;
- A description of water management actions in accordance with the requirements of 9VAC25-780-110 and 9VAC780-120;
- A statement of need in accordance with the requirements of 9VAC25-780-130;
- An alternatives analysis that identifies potential alternatives to address projected deficits in water supplies in accordance with the requirements of 9VAC25-780-130;
- A map or maps identifying important elements of the program that may include existing environmental resources, existing water sources, significant existing water uses and proposed new sources;
- A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter.
- A resolution approving the plan from each local government that is party to the plan; and
- A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received, and

WHEREAS, the Town of Chase City is part of the Lake Country Regional Water Supply Plan which includes Brunswick and Mecklenburg Counties and the towns of Alberta, Brodnax, Boydton, Chase City, Clarksville, LaCrosse, Lawrenceville and South Hill; and

WHEREAS, the Lake Country Regional Water Supply Plan was developed in accordance with Virginia Regulation 9 VAC 25-780-70 through 9 VAC 25-780-130; and

WHEREAS, on June 13, 2011, the Town of Chase City held a public hearing to accept public comment on the Lake Country Regional Water Supply Plan and all written comments submitted have received a written response as required; and

NOW, THEREFORE BE IT RESOLVED that the Town Council of the Town of Chase City here adopts the Lake Country Regional Water Supply Plan and the Regional Drought Response and Contingency Plan; and

BE IT FURTHER RESOLVED that the Town Council of the Town of Chase City intends that the lake Country Regional Water Supply Planning Program shall be revised and resubmitted to DEQ every ten years in accordance with the regulation and sound planning practice.

PASSED, APPROVED AND ADOPTED by the Town Council of the Town of Chase City at a meeting held on June 13, 2011.

J. Eddie Bratton

J. Eddie Bratton, Mayor

ATTEST:

Cynthia G. Gordon

Cynthia G. Gordon, Clerk of Council

June 13, 2011

Date

Gmail

Cynthia Gordon <ccclerk@gmail.com>

PUBLIC HEARING

1 message

Cynthia Gordon <ccclerk@gmail.com> **Wed, May 25, 2011 at 9:15 AM**
To: Pam <pam@thenewsprogress.com>

Pam,

Please run the following in a small display ad on WEDNESDAY, JUNE 8, 2011.

Thank you!

Cyndi

PUBLIC HEARING

NOTICE IS HEREBY GIVEN, that a Public Hearing will be held on Monday, June 13, 2011, beginning at 6:45PM by the Chase City Town Council. This public hearing will take place in the Council Chambers of the Municipal Building located at 319 North Main Street, Chase City, VA. This public hearing will be to consider the following:

A drought response ordinance which implements the Drought Management Plan, which is part of the overall Water Supply Plan.

Additional information is available in the Town Manager's Office, 319 North Main Street, Chase City, VA. Telephone 434-372-5136.

--

Cynthia G. Gordon
Clerk of Council/Administrative Assistant
Town of Chase City
319 North Main Street
Chase City, VA 23924
(434)372-5136 (Work)
(434)372-2587 (Fax)

PUBLIC HEARING HELD JUNE 13, 2011

The Council of the Town of Chase City, Virginia met for a Public Hearing on Monday night, June 13, 2011 at 6:52PM (was scheduled for 6:45PM in the Council Chambers of the Municipal Building. Those in attendance were the Honorable J. Eddie Bratton, mayor presiding and members of Council: Mrs. Lisa A. Gillispie and Ms. Brenda Hatcher and Messrs: Winthy Hatcher, Jr., James Bohannon and Munsey Moore. Absent: Mr. Charles Willis.

The hearing was opened and called to order by Mayor Bratton who also gave the invocation. Mayor Bratton stated the purpose of the hearing was for citizens to voice comments on the Lake Country Regional Water Supply and Lake Country Regional Drought Response ordinance and resolution.

There being no comments the hearing was adjourned at 6:55PM.

_____

J. Eddie Bratton, Mayor

_____

Cynthia G. Gordon, Clerk of Council

REGULAR COUNCIL MEETING HELD JUNE 13, 2011

The Council of the Town of Chase City, Virginia met in Regular Session on Monday night, June 13, 2011 at 7:00PM in the Council Chambers of the Municipal Building. Those in attendance were the Honorable J. Eddie Bratton, mayor presiding and members of Council: Mrs. Lisa A. Gillispie and Ms. Brenda Hatcher and Messrs: Winthy Hatcher, Jr., James Bohannon and Munsey A. Moore. Absent: Mr. Charles Willis.

The meeting was opened and called to order by Mayor Bratton who also gave the invocation. Mayor Bratton stated he had been receiving a lot of concern from water customers about the water rate increase. He stated that the Town should have been hooked on in January and then it was changed to May so the new rate change was put into effect. For several reasons the hook up was not done and it is uncertain when the final hook up will be completed. Therefore, motion was made by Lisa A. Gillispie seconded by Winthy Hatcher, Jr. to suspend

Town of Clarksville Program Documents:

Adopted Ordinance

Resolution of plan approval

Public Hearing record/notice

Title V Chapter 55 DROUGHT RESPONSE

Sec.55.01. Short title.

This Article shall be known and may be cited as the Lake Country Regional Drought Response Ordinance.

Sec. 55.02. Purpose.

The purpose of this Article is to provide for the voluntary and mandatory restriction of use of the Clarksville Public Water System during declared water shortages or water emergencies.

Sec. 55.03 Scope.

This Article shall apply to all Town of Clarksville residents and businesses, which are served by the public water system.

Sec. 55.04. Drought Response Plan.

The Town Council shall adopt by resolution the Lake Country Regional Water Supply Plan, which includes the Lake Country Regional Drought Response and Contingency Plan.

Sec. 55.05. Drought Indicators.

Upon determination that drought indicator(s) exceed the threshold of a drought stage, as set forth in Lake Country Regional Drought Response and Contingency Plan as outlined in Chapter 7 and Section B and Section C of the Lake Country Regional Water Supply Plan, the Town Council may declare a specific drought stage.

Sec. 55.06. Drought Stages.

The drought stages shall be Drought Watch, Drought Warning, and Drought Emergency, as determined by the Town Council, pursuant to the Lake Country Regional Drought Response and Contingency Plan and State Water Control Board regulation 9 VAC 25-120.

Sec. 55.07. Declaration.

Upon notification to the Town Council that a drought stage exists, as defined in Sec.55-05 of this Ordinance, the Council may issue a declaration of a drought stage. The *Town of Clarksville* may declare a drought stage in the absence of a declaration by the Commonwealth of Virginia.

Sec. 55.08. Drought Stage Responses

Upon declaration by the Town Council of a Drought Watch or Drought Warning, voluntary conservation measurers will be requested of residents and businesses as set forth in the Lake Country Regional Drought Response and Contingency Plan. Upon declaration of a Drought Emergency, mandatory restrictions shall apply as set forth in the Plan.

Sec. 55.09. Waiver of Restrictions.

Upon prior written request by an individual, business, or other water user, the Town Council, or its designee, may permit less than full compliance with any drought restrictions if good cause can be shown, including evidence that the applicant is affected in a substantial manner not common to other businesses or persons generally. No waiver shall be granted by the Town Council or its designee unless the Council or its designee determines that the public health, safety, and welfare will not be adversely affected by the waiver. All waivers granted by the Council of its designee shall be reported at the Council's next regular or special meeting.

Sec. 55.10. Penalties.

Any violation of this ordinance shall constitute a misdemeanor, punishable by a fine of not less than one hundred dollars ($100) and not more than five hundred dollars ($500). Each act or each day's continuation of the violation shall be considered a separate offense.

A RESOLUTION APPROVING THE LAKE COUNTRY REGIONAL WATER SUPPLY PLAN

WHEREAS, Virginia State Water Control Board Regulation 9 VAC 25-780, Local and Regional Water Supply Planning, requires all counties, cities and towns in the Commonwealth of Virginia to prepare and submit a water supply planning program to the Department of Environmental Quality (DEQ); and

Whereas, the following elements must be included in all local or regional water supply programs:

- A description of existing water sources in accordance with 9VAC25-780-70;
- A description of existing water use in accordance with the requirements of 9VAC25-780-80;
- A description of existing water resource conditions in accordance with the requirements of 9VAC25-780-90;
- An assessment of projected water demand in accordance with the requirements of 9VAC25-780-100;
- A description of water management actions in accordance with the requirements of 9VAC25-780-110 and 9VAC780-120;
- A statement of need in accordance with the requirements of 9VAC25-780-130;
- An alternatives analysis that identifies potential alternatives to address projected deficits in water supplies in accordance with the requirements of 9VAC25-780-130;
- A map or maps identifying important elements of the program that may include existing environmental resources, existing water sources, significant existing water uses, and proposed new sources;
- A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter;
- A resolution approving the plan from each local government that is party to the plan; and
- A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received, and

WHEREAS, the Town of Clarksville is part of the Lake Country Regional Water Supply Plan which includes Brunswick and Mecklenburg Counties and the towns of Alberta, Brodnax, Boydton, Chase City, Clarksville, La Crosse, Lawrenceville and South Hill; and

WHEREAS, the Lake Country Regional Water Supply Plan was developed in accordance with Virginia Regulation 9 VAC 25-780-70 through 9 VAC 25-780-130; and

WHEREAS, on June 21, the Town of Clarksville held a public hearing to accept public comment on the Lake Country Regional Water Supply Plan and all written comments submitted have received a written response as required; and

NOW, THEREFORE BE IT RESOLVED that the Town Council of the Town of Clarksville hereby adopts the Lake Country Regional Water Supply Plan and the Regional Drought Response and Contingency Plan; and

BE IT FURTHER RESOLVED that the Town Council of the Town of Clarksville intends that the Lake Country Regional Water Supply Planning Program shall be revised to reflect changes in relevant data at least once every five years and shall be revised and resubmitted to DEQ every ten years in accordance with the regulation and sound planning practice.

PASSED, APPROVED AND ADOPTED by the Town Council of the Town of Clarksville at a meeting held on June 21, 2011.

Water Supply Plan – Resolution and First Reading of Ordinance

Town Manager Moran stated the Town is mandated to adopt a Water Supply Plan and the Town agreed to participate in the regional plan covering the Southside Planning District. She stated the Town needs to adopt a resolution to approve and adopt the Lake Country Regional Water Supply Plan. Town Manager Moran stated the Town is also required to adopt a Drought Response Ordinance. She stated this ordinance is presented for a first reading this month. She stated it will be presented for a public hearing and second reading next month.

Council member Clarke motioned to adopt the resolution to approve and adopt the Lake Country Regional Water Supply Plan, seconded by Council member Jurczyk, and approved by all.

Mecklenburg County IDA – Kinderton Technology Campus

Town Manager Moran stated the Council has been talking about the Mecklenburg County IDA making application to the Tobacco Commission for funding of the Kinderton Technology Campus project. She stated in order for the County to develop the project, the Town would be needed to provide utilities which involves improvements to the Hwy 15/58 pump station and the force main along Hwy 15. She stated an estimate to make the necessary improvements to the pump station and force main is $866,000 from Dewberry & Davis. She stated the County has approached the Tobacco Commission about allocating some of the funding for this project for this purpose. Town Manager Moran stated the County has a meeting with the Tobacco Commission tomorrow for their decision about the funding for the project. She stated since the Town has worked with the Tobacco Commission, the requirements have changed for funding projects. Town Manager Moran stated the Town is now required to provide a 10% local government match because a significant portion of the grant is proposed to be for the improvements to the Town system. She stated the match has been negotiated to $75,000. Town Manager Moran stated the Town needs to decide whether to move forward with the project knowing that the 10% local government match is required. Council member Nunn feels the Town cannot afford not to agree to provide the match. Council member Jurczyk stated he feels the Town needs more information as to what the County match is as well as all the information regarding the project before agreeing to pay the $75,000 local match. Town Manager Moran stated the County has to get approval from the Tobacco Commission to move ahead with the project and the County cannot move ahead on the project without agreement from the Town to provide utilities. She reiterated that the County is meeting with the Tobacco Commission tomorrow and she has to let the County Administrator know the Town Council's decision in the morning. Council member Clarke questioned what type of loan the Town would get. Town Manager Moran stated the Town would seek quotes from the local banks. Council member Hite stated the Town was under the impression that the County was going to pay the entire cost and now that has changed. Council member Clarke stated he feels the Town has a sound enough budget to get a loan for the match.

Council member Hite motioned to inform Mecklenburg County and the Tobacco Commission that the Town agrees to provide no more than the $75,000 match contingent upon the Town being able to secure financing that is within the budget constraints, seconded by Council member Jurczyk, and approved by all.

Other Issues

Council member Hite stated at the April Council Workshop, it was discussed and agreed that all employees inform the Town Council of all training and registrations for training prior to attending. She stated the Town Council wants to know how the training or meeting will benefit the Town and who is requiring the employee to attend the event. She stated also, the Town Council wants a report after the training. She stated she feels a substantial amount has been spent this year and the Council needs to review it. Mayor Allgood questioned if any of the travel/training is over budget. Council member Hite stated some of the categories are over budget.

Council member Hite motioned to adopt the attached resolutions as required by VRS and also to repeal Town Code section 30.06 Line of Duty Ordinance, seconded by Vice-Mayor Torres, and approved by all.

Water Supply Plan – Public Hearing and Second Reading of Ordinance

Town Manager Moran stated the Town adopted a resolution to approve and adopt the Lake Country Regional Water Supply Plan. Town Manager Moran stated the Town is also required to adopt a Drought Response Ordinance and this ordinance is presented for a second reading and public hearing this month.

Mayor Allgood read the Drought Response Ordinance. Mayor Allgood opened the public hearing and asked for any public comment. There was no public comment on the ordinance and he closed the public hearing.

Council member Hite motioned to adopt the Drought Response Ordinance, seconded by Vice-Mayor Torres, and approved by all.

FY 11/12 Budget – Second Reading and Public Hearing

Treasurer Tara Murphy provided a brief overview of the proposed 2011-2012 Budget . Treasurer Murphy stated the total proposed General Fund revenues are $1,398,683. Treasurer Murphy stated no ad volorem tax rates are proposed to increase this year. She stated the lodging tax is proposed to increase from 5% to 5.5%, which yields an additional $7,000. She stated any other increases in the line items are based on receipts during the year. Treasurer Murphy stated the Law Enforcement Assistance, the HB 599 funds, were reduced 10% during the recent General Assembly session.

Treasurer Murphy stated the retirement and group life insurance contribution rates stayed the same this year as well as the Anthem Blue Cross Blue Shield insurance premiums. She stated there is an increase in the Streets/Sidewalks operating supplies of $5,500 to purchase 20 barrels, 10 road barricades, and 8 sign stands. Treasurer Murphy stated $2,000 was budgeted to purchase a tamper and lawn edger under Streets/Sidewalks equipment purchases. She stated $5,100 is budgeted to replace the motor in the Fire truck used to wash the streets and flush the sewer lines. She stated this expense is split between the Streets/Sidewalks equipment maintenance and the Line Maintenance equipment maintenance line items. Treasurer Murphy stated $2,350 is budgeted to purchase a welder for the Town Shop. She stated the total proposed expenditures for 2011-12 is $1,349,828 with $48,855 in general fund contingency.

Treasurer Murphy stated the water and sewer rates are proposed to increase 3.5%. She stated the increase is needed due to the fact that the current year budget figures will not be met as consumption has decreased by 11%. She stated the increase will change the minimum bi-monthly bill from $130.50 to $134.50 every two months for in-Town customers. She stated the minimum bill for out-of-Town customers will change from $246.75 to $255.00 every two months. Treasurer Murphy stated the total proposed Water fund revenues is $1,073,650.

She stated the retirement and group life insurance contribution rates and the medical insurance premiums stayed the same. Treasurer Murphy stated $10,000 was budgeted to purchase a termite backhoe under line maintenance equipment purchases. Treasurer Murphy stated under Water Plant equipment purchases, $7,000 is budgeted to replace 2 of the 4 GLI meters. She stated $4,000 has been budgeted to seal the driveway and $2,800 to replace 7 windows at the Water Plant. Treasurer Murphy stated $3,500 is budgeted for maintenance to the Waste Plant parking lot, $1,000 for outside lights and $1,500 for painting inside the Wastewater Treatment Plant. She stated under lift station maintenance, $10,000 is budgeted to replace a pump. Treasurer Murphy stated $3,000 is budgeted to replace the roof at the KCC lift station and $8,800 is budgeted to continue to purchase the alarms needed at the lift stations. She stated the debt service line item decreased to reflect the change in the VRA loan payment amount as the industrial park portion of the financing will be paid off within the next fiscal year. Treasurer Murphy stated the total proposed Water Fund expenditures is $1,046,152 with a contingency of $27,498.

Public Hearing Notice

The Town of Clarksville Town Council will hold a public hearing and second reading of the Drought Response Ordinance at their Regular Meeting on Tuesday, June 21, 2011 as mandated by the Virginia General Assembly. The Council is expected to take action on adopting the Ordinance at the close of the public hearing. A copy of the Ordinance is available for review at the Town Hall, 321 Virginia Ave, Clarksville, VA 23927.

Town of La Crosse Program Documents:

Adopted Ordinance

Resolution of plan approval

Public Hearing record/notice

ARTICLE III. DROUGHT RESPONSE

Sec. 27-20. Short title.

This Article shall be known and may be cited as the Lake Country Regional Drought Response Ordinance.

Sec. 27-21. Purpose.

The purpose of this Article is to provide for the voluntary and mandatory restriction of use of the Roanoke River Service Authority public water supply system during declared water shortages or water emergencies.

Sec. 27-22. Scope.

This Article shall apply to all Town of La Crosse residents and businesses, which are served by the public water system.

Sec. 27-23. Drought Response Plan.

The Town Council shall adopt by resolution the Lake Country Regional Water Supply Plan, which includes the Lake Country Regional Drought Response and Contingency Plan.

Sec. 27-24. Drought Indicators.

Upon determination that drought indicator(s) exceed the threshold of a drought stage, as set forth in Lake Country Regional Drought Response and Contingency Plan as outlined in Chapter 7 and Section B and Section C of the Lake Country Regional Water Supply Plan, the Council may declare a specific drought stage.

Sec. 27-25. Drought Stages.

The drought stages shall be Drought Watch, Drought Warning, and Drought Emergency, as determined by the Council, pursuant to the Lake Country Regional Drought Response and Contingency Plan and State Water Control Board regulation 9 VAC 25-120.

Sec. 27-26. Declaration.

Upon notification to the Council that a drought stage exists, as defined in Sec. 27-24 of this Ordinance, the Council may issue a declaration of a drought stage. The Town of La Crosse may declare a drought stage in the absence of a declaration by the Commonwealth of Virginia.

Sec. 27-27. Drought Stage Responses

Upon declaration by the Council of a Drought Watch or Drought Warning, voluntary conservation measurers will be requested of residents and businesses as set forth in the Lake Country Regional Drought Response and Contingency Plan. Upon declaration of a Drought Emergency, mandatory restrictions shall apply as set forth in the Plan.

Sec. 27-28. Waiver of Restrictions.

Upon prior written request by an individual, business, or other water user, the Council, or its designee, may permit less than full compliance with any drought restrictions if good cause can be shown, including evidence that the applicant is affected in a substantial manner not common to other businesses or persons generally. No waiver shall be granted by the Council or its designee unless the Council or its designee determines that the public health, safety, and welfare will not be adversely affected by the waiver. All waivers granted by the Council of its designee shall be reported at the Council's next regular or special meeting.

Sec. 27-29. Penalties.

Any violation of this ordinance shall constitute a misdemeanor, punishable by a fine of not less than one hundred dollars ($100) and not more than five hundred dollars ($500). Each act or each day's continuation of the violation shall be considered a separate offense.

A RESOLUTION APPROVING THE LAKE COUNTRY REGIONAL WATER SUPPLY PLAN

WHEREAS, Virginia State Water Control Board Regulation 9 VAC 25-780, Local and Regional Water Supply Planning, requires all counties, cities and towns in the Commonwealth of Virginia to prepare and submit a water supply planning program to the Department of Environmental Quality (DEQ); and

Whereas, the following elements must be included in all local or regional water supply programs:

- A description of existing water sources in accordance with 9VAC25-780-70;
- A description of existing water use in accordance with the requirements of 9VAC25-780-80;
- A description of existing water resource conditions in accordance with the requirements of 9VAC25-780-90;
- An assessment of projected water demand in accordance with the requirements of 9VAC25-780-100;
- A description of water management actions in accordance with the requirements of 9VAC25-780-110 and 9VAC780-120;
- A statement of need in accordance with the requirements of 9VAC25-780-130;
- An alternatives analysis that identifies potential alternatives to address projected deficits in water supplies in accordance with the requirements of 9VAC25-780-130;
- A map or maps identifying important elements of the program that may include existing environmental resources, existing water sources, significant existing water uses, and proposed new sources;
- A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter;
- A resolution approving the plan from each local government that is party to the plan; and
- A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received, and

WHEREAS, the Town of La Crosse is part of the Lake Country Regional Water Supply Plan which includes Brunswick and Mecklenburg Counties and the towns of Alberta, Brodnax, Boydton, Chase City, Clarksville, La Crosse, Lawrenceville and South Hill; and

WHEREAS, the Lake Country Regional Water Supply Plan was developed in accordance with Virginia Regulation 9 VAC 25-780-70 through 9 VAC 25-780-130; and

WHEREAS, on July 11, 2011, the Town of La Crosse held a public hearing to accept public comment on the Lake Country Regional Water Supply Plan and all written comments submitted have received a written response as required; and

NOW, THEREFORE BE IT RESOLVED that the Town Council of the Town of La Crosse hereby adopts the Lake Country Regional Water Supply Plan and the Regional Drought Response and Contingency Plan; and

BE IT FURTHER RESOLVED that the Town Council of the Town of La Crosse intends that the Lake Country Regional Water Supply Planning Program shall be revised to reflect changes in relevant data at least once every five years and shall be revised and resubmitted to DEQ every ten years in accordance with the regulation and sound planning practice.

PASSED, APPROVED AND ADOPTED by the Town Council of the Town of La Crosse at a meeting held on July 11, 2011.

Willis A. Woodall, Mayor

Attest:

Ernestine T. Evans, Clerk

South Hill Enterprise

PROOF OF PUBLICATION

PUBLIC HEARING

A Public Hearing will be held at 7:00 p.m. on Monday, July 11, 2011 by the La Crosse Town Council at the La Crosse Volunteer Fire Department meeting room, 202 Carolina Street, La Crosse, VA. This public hearing will be to hear comments regarding the Lake Country Water Supply Plan and the Town's proposed Drought Response Ordinance as required by the Virginia State Water Control Board. The Plan and Ordinance may be reviewed at the La Crosse Town Office, 115 South Main Street, La Crosse, VA. The regular town council meeting will immediately follow this public hearing. (WO6/29c

This is to certify that the order of publication hereto attached was published in The South Hill Enterprise, a newspaper covering Mecklenburg and Brunswick Counties with an office in South Hill, Virginia for 2 issues, beginning with the issue of June 22, 2011 and ending with the issue of June 29, 2011.

Barbara Arthur

Barbara Arthur
Office Manager

Total Cost $70.00

No comments from public or Council -

Town of South Hill Program Documents:

Adopted Ordinance

Resolution of plan approval

Public Hearing record/notice

AN ORDINANCE TO AMEND CERTAIN SECTIONS OF THE CODE OF THE TOWN OF SOUTH HILL, VIRGINIA

AN AMENDMENT

BE IT ENACTED by the Town Council of the Town of South Hill, Virginia, in regular session assembled that:

Chapter 86 Utilities be amended by adding the following language to Article II. Water.

Division 5. Drought Response

Sec. 86-118. Short Title.

This Ordinance shall be known and may be cited as the Lake Country Regional Drought Response Ordinance. (Ord. No. 2011-2)

Sec. 86-119. Purpose.

The purpose of this Ordinance is to provide for the voluntary and mandatory restriction of use of the Roanoke River Service Authority public water supply system during declared water shortages or water emergencies.

Sec. 86-120. Scope.

This Ordinance shall apply to all Town of South Hill residents and businesses, which are served by the public water system.

Sec. 86-121. Drought Response Plan.

The Town Council shall adopt by resolution the Lake Country Regional Water Supply Plan, which includes the Lake Country Regional Drought Response and Contingency Plan.

Sec. 86-122. Drought Indicators.

Upon determination that drought indicator(s) exceed the threshold of a drought stage, as set forth in Lake Country Regional Drought Response and Contingency Plan as outlined in Chapter 7 and Section B and Section C of the Lake Country Regional Water Supply Plan, the Council may declare a specific drought stage.

Sec. 86-123. Drought Stages.

The drought stages shall be Drought Watch, Drought Warning, and Drought Emergency, as determined by the Council, pursuant to the Lake Country Regional Drought Response and Contingency Plan and State Water Control Board regulation 9 VAC 25-120.

Sec. 86-124. Declaration.

Upon notification to the Council that a drought stage exists, the Council may issue a declaration of a drought stage. The Town may declare a drought stage in the absence of a declaration by the Commonwealth of Virginia.

Sec. 86-125. Drought Stage Responses.

Upon declaration by the Council of a Drought Watch or Drought Warning, voluntary conservation measurers will be requested of residents and businesses as set forth in the Lake Country Regional Drought Response and Contingency Plan. Upon declaration of a Drought Emergency, mandatory restrictions shall apply as set forth in the Plan.

Sec. 86-126. Waiver of Restrictions.

Upon prior written request by an individual, business, or other water user, the Council, or its designee, may permit less than full compliance with any drought restrictions if good cause can be shown, including evidence that the applicant is affected in a substantial manner not common to other businesses or persons generally. No waiver shall be granted by the Council or its designee unless the Council or its designee determines that the public health, safety, and welfare will not be adversely affected by the waiver. All waivers granted by the Council of its designee shall be reported at the Council's next regular or special meeting.

Sec. 86-127. Penalties.

Any violation of this ordinance shall constitute a misdemeanor, punishable by a fine of not less than one hundred dollars ($100) and not more than five hundred dollars ($500). Each act or each day's continuation of the violation shall be considered a separate offense.

Done in the Town of South Hill, Virginia this 13th day of June 2011.

By: Earl O. Horne, Mayor

ATTEST:

Anna B. Cratch, Town Clerk

You'll like the view from
South Hill

Town of South Hill

Incorporated 1901

ADMINISTRATION

CODE COMPLIANCE OFFICIAL

PUBLIC WORKS

(434) 447-3191

A RESOLUTION APPROVING THE LAKE COUNTRY REGIONAL WATER SUPPLY PLAN

WHEREAS, Virginia State Water Control Board Regulation 9 VAC 25-780, Local and Regional Water Supply Planning, requires all counties, cities and towns in the Commonwealth of Virginia to prepare and submit a water supply planning program to the Department of Environmental Quality (DEQ); and

WHEREAS, the following elements must be included in all local or regional water supply programs:

- A description of existing water sources in accordance with 9VAC25-780-70;
- A description of existing water use in accordance with the requirements of 9VAC25-780-80;
- A description of existing water resource conditions in accordance with the requirements of 9VAC25-780-90;
- An assessment of projected water demand in accordance with the requirements of 9VAC25-780-100;
- A description of water management actions in accordance with the requirements of 9VAC25-780-110 and 9VAC780-120;
- A statement of need in accordance with the requirements of 9VAC25-780-130;
- An alternatives analysis that identifies potential alternatives to address projected deficits in water supplies in accordance with the requirements of 9VAC25-780-130;
- A map or maps identifying important elements of the program that may include existing environmental resources, existing water sources, significant existing water uses, and proposed new sources;
- A copy of the adopted program documents including any local plans or ordinances or amendments that incorporate the local program elements required by this chapter;
- A resolution approving the plan from each local government that is party to the plan; and
- A record of the local public hearing, a copy of all written comments and the submitter's response to all written comments received; and

WHEREAS, the Town of South Hill is part of the Lake Country Regional Water Supply Plan which includes Brunswick and Mecklenburg Counties and the towns of Alberta, Brodnax, Boydton, Chase City, Clarksville, La Crosse, Lawrenceville and South Hill; and

WHEREAS, the Lake Country Regional Water Supply Plan was developed in accordance with Virginia Regulation 9 VAC 25-780-70 through 9 VAC 25-780-130; and

WHEREAS, on June 13, 2011 the Town of South Hill held a public hearing to accept public comment on the Lake Country Regional Water Supply Plan and all written comments submitted have received a written response as required; and

NOW, THEREFORE BE IT RESOLVED that the Council of the Town of South Hill hereby adopts the Lake Country Regional Water Supply Plan and the Regional Drought Response and Contingency Plan; and

BE IT FURTHER RESOLVED that the Council of the Town of South Hill intends that the Lake Country Regional Water Supply Planning Program shall be revised to reflect changes in relevant data at least once every five years and shall be revised and resubmitted to DEQ every ten years in accordance with the regulation and sound planning practice.

Adopted this 13th day of June, 2011, by the Town Council of South Hill, Virginia.

Earl O. Horne, Mayor

Attest:

Anna B. Cratch, Town Clerk

6. PUBLIC HEARINGS

A. Kim Callis – Lake Country Regional Water Supply Plan and Drought Response Ordinance

Kim Callis opened the Public Hearing for comments for and against the proposed Lake Country Regional Water Supply Plan and the Drought Response Ordinance. The Virginia State Water Control Board regulations require all local governments in the Commonwealth of Virginia to prepare and submit a water supply planning program to DEQ. The Lake Country Regional Water Supply Plan has been prepared by the SPDC and includes Mecklenburg and Brunswick Counties and the towns located in those counties. As part of the Plan, staff must also enact a Drought Response Ordinance which provides for voluntary and mandatory water restrictions during declared water shortages or water emergencies.

There were no speakers in favor of or against the proposal.

A motion was made by Councilwoman Bracey, second by Councilwoman Feggins-Boone, to adopt the Resolution approving the Lake Country Regional Water Supply Plan and the Regional Drought Response and Contingency Plan as required by DEQ. A **roll-call vote** was requested and voiced as follows:

Councilman Barbour-Absent	Councilwoman Feggins-Boone-Aye
Councilwoman Bracey-Aye	Councilman Harper-Aye
Councilman Kidd-Aye	Councilman Luster-Aye
Councilman Moody-Aye	Councilman Sasser-Aye.

A motion was made by Councilwoman Bracey, second by Councilwoman Feggins-Boone, to adopt the amendment to the Code of the Town of South Hill authorizing the Lake Country Regional Drought Response Ordinance (Ord. No. 2011-2). A **roll-call vote** was requested and voiced as follows:

Councilman Barbour-Absent	Councilwoman Feggins-Boone-Aye
Councilwoman Bracey-Aye	Councilman Harper-Aye
Councilman Kidd-Aye	Councilman Luster-Aye
Councilman Moody-Aye	Councilman Sasser-Aye.

B. Charles Hudson – SE 2011-5, Request by Barbara Jean Coles for a Retail Automobile Dealership at 1524 W. Danville Street

Charles Hudson opened the Public Hearing for comments for and against Barbara Jean Coles' request for a special exception permit under Article IV, Section 94.1-76 of the Town Zoning Ordinance to utilize 1524 West Danville Street as a retail automobile dealership. The property is owned by William T. Stanley, Jr. and is zoned Commercial C-2.

At the Public Hearing held on May 2, 2011, the South Hill Planning Commission voted to recommend that Council approve the special exception request.

Ms. Coles was present to answer questions. Alphonso Jiggetts spoke in favor of the request stating he planned to have around 10 cars for sale. One bay will be present for washing and one for customers to come when they want to buy. There were no speakers against the request.

PUBLIC HEARING NOTICE

A Public Hearing will be held at 7:00PM on June 13, 2011 at the South Hill Town Hall, 211 S. Mecklenburg Avenue, South Hill, VA to hear comments regarding the Lake Country Water Supply Plan and the Town's proposed Drought Response Ordinance as required by the Virginia State Water Control Board. The Plan and Ordinance may be reviewed at the Town Hall by contacting Anna Cratch, Town Clerk.