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TABLES

2.0 EVALUATION OF EXISTING WATER SUPPLY

2.1 Existing Water Sources

The homes, businesses and other water users in the region receive water from a variety of sources including: public water systems, public and private groundwater wells, stream or river intakes, and reservoirs. As required by the Regulation[1], current information on existing water sources is presented in the following sections.

A map showing the locations of the public community water systems in the MRPDC region is included as Figure 2 (Appendix A).

2.2 Community Water Systems Using Groundwater

2.2.1 Bland County

Many of the community water systems in Bland County, both publicly and privately owned, rely on groundwater. The Bland County Service Authority (BCSA) owns and operates the Bland Community Water Authority and the Rocky Gap/Bastian public community water systems. Deer Run Water Company is the only private community water system using groundwater in Bland County. Each is discussed below.

2.2.1.1 Bland Community Water Authority

The Bland Community Water Authority water system is a public community water system owned and operated by the BCSA. The system consists of two drilled wells connected to a water treatment plant (WTP). No well construction information was available for either well. The two wells have approximate yields of 214 gallons per minute (gpm) and 156 gpm. The groundwater is under the influence of surface water; therefore, the water is piped to the WTP for treatment. The service pumps at the WTP pump treated water to the nearby 150,000 gallon storage tank, where it is then distributed to the system.

The WTP consists of an adsorption clarifier with polypropylene media, a mixed media filter (4 gpm/ft^2), fluoride and chlorine injection, and a 23,400 gallon clearwell located beneath the WTP.

[1] 9 VAC 25-780-70 requires the following information on existing water sources.

The WTP produces approximately 57,000 gallons per day (gpd). The design capacity for this system is 173,000 gpd.

2.2.1.2 Deer Run Water Company

The Deer Run Water Company is a private community water system that provides water to the Deer Run Subdivision. This system consists of a drilled well that is reportedly 525 feet deep. No other well construction or yield information was available. Water is chlorinated and piped to two interconnected 2,000 gallon concrete reservoirs. The design capacity of the system is limited to 18 equivalent residential connections (ERC). The system is currently using 17 connections.

2.2.2 Carroll County

Many of the community water systems in Carroll County, both publicly and privately owned, rely on groundwater. The Carroll County Public Service Authority (CCPSA) owns and operates the following public community water systems utilizing groundwater: Cana Community Water System, Gladeville/Cranberry Water System, Hillcrest Estates, Route 100, and Woodlawn. Private community water systems using groundwater in Carroll County include the following: Brandywine Estates, Cascade Mountain Resort, Chalet High Subdivision, Laurel Meadows Home, Olde Mill Golf Club, Pinebrook Subdivision, and Sunrise Trailer Park. Each is discussed below.

2.2.2.1 Cana Community Water System

Cana Community Water System is a public community water system owned and operated by the CCPSA. The system consists of seven drilled wells, an atmospheric storage tank, and approximately 76,900 feet of water lines ranging from 2-inch diameter to 10-inch diameter.

Well No. 1 was drilled to a depth of 400 feet. No other well construction information was available. The yield is approximately 31 gpm. Well No. 2 was drilled to a depth of 400 feet. No other well construction information was available. The yield is approximately 48 gpm. Well No. 2 is pumped to two 119 gallon hydropneumatic tanks. Two booster pumps rated at 48 gpm deliver water to the distribution system. Well No. 3 was drilled to a depth of 400 feet and has an approximate yield of 10 gpm. No other well construction information was available. Well No. 4

was drilled to a depth of 400 feet and has an approximate yield rate of 20 gpm. No other well construction information was available. There was no well construction information available for Well No. 5; however, the yield was estimated at approximately 17 gpm. Well No. 6 was drilled to a depth of 500 feet and has an approximate yield of 8 gpm. No other well construction information was available. Well No. 7 was drilled to a depth of 305 feet and has a reported yield of 22 gpm. All wells are equipped with submersible pumps matching their respective yield rates and are housed in concrete block buildings. All wells are controlled by a time clock except for Well No. 2, which is be controlled by a pressure switch.

An orthophosphate chemical feed system and chlorination equipment are used for each individual well except for Well No. 3. Water from Well No. 3 is delivered to Well No. 2 for chlorination and sequestration.

The system has a total effective storage of 314,092 gallons. The combined permitted yield for the seven wells is 124,800 gpd.

2.2.2.2 Route 100

The Route 100 water system is a public community water system owned and operated by the CCPSA. The system consists of three drilled wells, one booster pump station, and distribution lines.

The Beaverdam Well was drilled to a depth of 400 feet and cased and grouted at a depth of 57 feet. The yield is approximately 33 gpm. The well is controlled by a pressure switch and pumped to two 119 gallon hydropneumatic storage tanks. Two 33 gpm centrifugal booster pumps deliver the water from the pressure tanks into the distribution system. Metering pumps are used to deliver chlorine solution and orthophosphate for manganese control. Chlorine contact is provided by 200 feet of 12-inch pipe prior to entering the distribution system.

The Island Creek Well was drilled to a depth of 400 feet and is cased and grouted to a depth of 58 feet. The yield is approximately 40 gpm. The well operates similar to the Beaverdam Well, using two 40 gpm booster pumps. The well is chlorinated and orthophosphate is added for manganese control. Chlorine contact is provided by 205 feet of 12 inch pipe prior to entering the distribution system.

The Route 221 Well was drilled to a depth of 350 feet and is cased and grouted to a depth of 51 feet. The yield is approximately 53 gpm. The well operates similarly to the Beaverdam and Island Creek Wells, using two 53 gpm booster pumps. The well is chlorinated and orthophosphate is added for manganese control. Chlorine contact is provided by 72 feet of 24 inch pipe prior to entering the distribution system.

The three wells have a combined yield capacity of 126 gpm or 100,800 gpd. Water is also supplied to the system by a booster pump station that pumps from the Carroll County system tank. The pump station is equipped with two 225 gpm vertical turbine booster pumps. The pumps operate in response to a tank level telemetry system. Storage is provided by a 150,000 gallon elevated tank and a 388,000 gallon ground storage tank. The total effective storage for the system is 538,000 gallons.

The Route 100 system presently serves approximately 173 service connections including the CCPSA's highest volume customer, Magnolia Manufacturing. The design capacity for the Route 100 water system is 0.36 MGD.

2.2.2.3 Gladeville/Cranberry Water System

The Gladeville/Cranberry Water System is a public community water system owned and operated by the CCPSA. This water system consists of five drilled wells, one booster pump station, storage tanks, and distribution lines. The Davis Well was drilled to a depth of 405 feet and was cased and grouted to a depth of 51 feet. The yield is approximately 78 gpm. Wilson Well No. 1 was drilled to a depth of 405 feet and is cased and grouted to a depth of 102 feet. The yield is approximately 18 gpm. Wilson Well No. 2 was drilled to a depth of 405 feet and was cased to a depth of 99 feet. The yield is approximately 82 gpm. The two wells are housed in separate concrete buildings. Each well is equipped with chlorine metering pumps and a 100 gallon solution crock. Water flows by gravity to a wet well where two submersible booster pumps, each with a pumping capacity of 100 gpm, are used. The booster pump station is controlled by a time clock, and a float control system turns the well pumps off.

Summers Well No. 1 was drilled to a depth of 405 feet and is cased and grouted to a depth of 64 feet. The yield is approximately 96 gpm. Summers Well No. 2 is also 405 feet deep and is cased and grouted to a depth of 52 feet. Water flows by gravity to a wet well where three submersible

pumps, each with a capacity rating of 120 gpm, are located in the booster pump station. Any two pumps functioning simultaneously will create a flow of approximately 140 GPM. The station is controlled by a time clock while a float control system operates the well pumps.

The Country Estates hydropneumatic pump station draws water from the Gladeville/Cranberry system and supplies a 25-lot residential subdivision. The pump station includes two 65 gpm centrifugal booster pumps and four 119 gallon hydropneumatic tanks.

The system contains a 500,000 gallon storage tank with a total effective storage volume is 162,217 gallons. The design capacity for the system is 0.30 MGD

2.2.2.4 Hillcrest Estates

Hillcrest Estates water system is a public community water system that is owned and operated by the CCPSA. The system consists of one drilled well. The well was drilled to a depth of 455 feet deep and cased to a depth of 91 feet. The yield is approximately 25 gpm. The well pumps directly to the booster pump station where it is pumped to a 10,000 gallon concrete storage tank. The concrete tank houses two submersible well pumps, each rated at 90 gpm, which direct water to four bladder-type pressure tanks. The design capacity of the system is limited to 19,225 gpd or 48 ERCs.

2.2.2.5 Woodlawn

The Woodlawn water system is a public community water system that is owned and operated by the CCPSA. This system consists of four drilled wells, an atmospheric storage tank, and distribution lines. Each of the wells is chlorinated with a hypochlorination system. The system consists of a metering pump and a 100 gallon solution crock. The well and hypochlorination system are controlled via a time clock

Well No. 1 was drilled to a depth of 400 feet. No other well construction information was available. The yield is approximately 27 gpm. Well No. 2 was drilled to a depth of 250 feet. No other well construction information was available. The yield is approximately 141 gpm. The well pump has a capacity of 125 gpm. The Guynn Well was drilled to a depth of 405 feet and cased and grouted to a depth of 62 feet. The yield is approximately 61 gpm. The Ball Park

Well was drilled to a depth of 550 feet and was cased and grouted to a depth of 50 feet. The yield is approximately 55 gpm.

The combined yield capacity of the four wells is 268 gpm or 214,400 gpd. A 489,000 gallon atmospheric tank is used for storage. The effective storage volume is 215,947 gallons. The design capacity for the system is 0.21 MGD.

2.2.2.6 Brandywine Estates

Brandywine Estates is a privately owned community water system. The system consists of one drilled 12-inch well. The well was drilled to a depth of 210 feet and cased to a depth of 68 feet. The yield of the well is approximately 28 gpm. The design capacity of the system is 16,000 gpd.

2.2.2.7 Cascade Mountain Resort

The Cascade Mountain Resort water supply is a privately owned community water system. The system consists of eight drilled wells which are individually housed. Each well is cased to a depth between 50 and 60 feet. No other well construction or yield information was available.

The system has two separate distribution systems. The first distribution system consists of a pump station, a 75,000 gallon storage tank, a 60,000 gallon storage tank, and a 5,000 gallon storage tank. This distribution system is served by Wells Nos. 1-6. The second distribution system includes a booster pump station, a 25,000 gallon storage tank, and a 50,000 gallon storage tank. This system is served by Well No. 7 and Well No. 8. The two distribution systems are connected.

The total storage capacity for the system is 0.215 MG. The system serves approximately 75 service connections, including an office, restaurant facility, former ski lodge, and residential homes. The design capacity for the system is 0.14 MGD.

2.2.2.8 Chalet High Subdivision

The Chalet High Subdivision is a private community water system. The system consists of five drilled wells. Well No. 1 was drilled to a depth of 395 feet and cased and grouted to a depth of 60.5 feet. No yield information was available. Water is pumped by a 2 HP submersible pump with pump rate of 33 gpm to a 80 gallon hydropneumatic tank and/or a 10,000 gallon

hydropneumatic tank. Tank operation is alternated manually, with the 80 gallon tank used in low use periods and the 10,000 gallon tank used under normal operating conditions.

Well No. 2 was drilled to a depth of 275 feet and cased and grouted to a depth of 70 feet. No yield information was available. Water is pumped at a rate of 23 gpm by a submersible pump that directs water to two pressure tanks, with capacities are 80 gallon and 120 gallons.

Well No. 3 was drilled to a depth of 340 feet and cased and grouted to a depth of 50 feet. The well yield is approximately 4 gpm. A 1 HP submersible pump sends water to a 120 gallon pressure tank inside the well house.

Well No. 4 is no longer in service. Well No. 5 was drilled to a depth of 300 feet and cased and grouted to a depth of 50 feet. The yield is approximately 4 gpm. The water is pumped to a 120 gallon pressure tank.

Well No. 6 was drilled to a depth of 305 feet and cased and grouted to a depth of 50 feet. The yield is approximately 18 gpm. Water is pumped to a 10,152 gallon hydropneumatic pump.

The effective storage capacity is 6,840 gallons. The design capacity for the system is limited to 112 connections.

2.2.2.9 Laurel Meadows Home

Laurel Meadows Home is a private community water system serving a nursing home. The system consists of one well drilled to a depth of 302 feet. No other well construction information was available. The yield is approximately 28 gpm. Chlorination is provided through a metering pump and a 50 gallon tank.

Chlorinated water is delivered to a 11,460 gallon atmospheric type storage tank. Dual 80 gpm centrifugal booster pumps deliver water to a 1,000 gallon hydropneumatic tank. The system contains a 35,000 gallon concrete fire storage tank. This tank is equipped with a low water alarm and a 500 gpm vertical turbine pump. The potable water system and the fire system are interconnected.

The total effective storage capacity is 11,815 gallons. The design capacity of the system is 19,600 gpd or 49 ERCs.

2.2.2.10 Olde Mill Golf Club

Olde Mill Golf Club is a private community water system. The system consists of a one drilled well. The well was drilled to a depth of 405 feet and cased and grouted to a depth of 82 feet. The yield is approximately 14 gpm. The water system contains a polyphosphate feeder system. Water is pumped by a 1.5 HP pump to a 100,000 gallon storage tank.

The system serves the golf clubhouse, restaurant, and residences near the facility. The effective storage capacity is 21,413 gallons. The water system is permitted for a design capacity of 12,000 gpd or 30 ERCs.

2.2.2.11 Pinebrook Subdivision

Pinebrook Subdivision is a private community water system. The system consists of one drilled well. The well was drilled to a depth of 405 feet and cased and grouted to a depth of 62 feet. The yield is approximately 35 gpm. Water is delivered to the 12,500 gallon pressure tank located outside the well house building. From the pressure tank, water is delivered to the 2 inch and 4 inch PVC distribution system, which serves a 14 lot subdivision.

The system has a total storage capacity of 4,167 gallons. The design capacity for the system is 8,333 gpd or 21 ERCs.

2.2.2.12 Sunrise Trailer Park

Sunrise Trailer Park is a privately owned water system. The system consists of one drilled well. The well was drilled to a depth of 200 feet and cased and grouted to a depth of 50 feet. No yield information was available. A 0.5 HP submersible pump directs water into two 80 gallon pressure tanks. The design capacity for the system is limited to 15 existing service connections.

2.2.3 Grayson County

Many of the community water systems in Grayson County, both publicly and privately owned, rely on groundwater. Grayson County does not own or operate a public community water system using groundwater; however, the towns of Troutdale and Independence own and operate

public community water systems utilizing groundwater. Private community water systems in Grayson County include the following: Lawn Acres Trailer Park, Oak Hill Academy, and Sunvalley Trailer Park. Each is discussed below.

2.2.3.1 Town of Troutdale

The Town of Troutdale water system is a public community water system owned and operated by the Town of Troutdale. The system contains three drilled wells, an 84,450 gallon storage tank and distribution system. Well No. 1 (Ross Well) is a 6-inch well drilled to a depth of 405 feet and cased and grouted to a depth of 61 feet. The yield is approximately 7 gpm. The well is equipped with a submersible one HP pump rated at 7 gpm.

Well No. 2 (Westinghouse Well) is a 6-inch well drilled to a depth of 405 feet. No other well construction information was available. The yield is approximately 7.5 gpm. The well is equipped with a 1.5 HP submersible pump with a pump capacity of 7.5 gpm.

Well No. 3 (Mr. Casuals Well) is a 6-inch well drilled to a depth of 205 feet and cased and grouted to a depth of 45 feet. The yield is approximately 28 gpm. The well is equipped with a 10 HP submersible pump with a pump capacity of 31 gpm. The well is being leased to the Town of Troutdale by Rivers Casuals, Inc.

The design capacity for the water system is 34,000 gpd.

2.2.3.2 Town of Independence

The Town of Independence water system is a public community water system owned and operated by the Town of Independence. The system contains seven drilled wells, four storage tanks, and distribution lines.

The Parsons Well was drilled to a depth of 310 feet and cased to a depth of 53 feet. The yield is approximately 83 gpm. The well is equipped with a 15 HP submersible pump.

The Kaiser-Roth Well was drilled to a depth of 290 feet and cased to a depth of 30 feet. The yield is approximately of 29 gpm. The well uses a 2 HP submersible pump.

The Reeves Well was drilled to a depth of 405 feet and cased and grouted to a depth of 50 feet. The Reeves well has an approximate yield of 85 gpm.

The Cassell Well was drilled to a depth of 355 feet and cased and grouted to a depth of 51 feet. The yield is approximately 84 gpm.

The Jail Well was drilled to a depth of 145 feet and cased to a depth of 48 feet. The yield is approximately 40 gpm. The well is equipped with a 40 gpm submersible pump is provided.

The Grayson Garment Well was drilled to a depth of 107 feet and cased to a depth of 43 feet. The yield is approximately 50 gpm. The well is equipped with an electronically driven jet pump rated at 50 gpm.

The Hall Well was drilled to a depth of 136 feet and cased to a depth of 40 feet. The yield of this well is approximately 35 gpm. The Hall Well is equipped with a 35 gpm submersible pump. The well is manually controlled.

This water system has four storage tanks. The Anvil tank is a 110,000 gallon concrete tank, with a total effective volume of 148,057 gallons. The Black Rock tank has an effective volume of 296,434 gallons. The Town of Independence tank is an elevated steel tank that has a volume of approximately 200,000 gallons.

The Town of Independence water system has a storage capacity of 7.55 MG. The design capacity of the seven wells is 406 gpm. The Town has experienced problems with contamination and reduced well yields. Three of the seven wells are currently out of service.

The design capacity of this system is 230,000 gpd.

2.2.3.3 Lawn Acres Trailer Park

The Lawn Acres Trailer Park is a private community water system, which consists of one drilled well and two hydropneumatic tanks. The well was drilled to a depth of 136 feet. No other well construction or yield information was available. A 5 HP submersible pump delivers water to two 160 gallon hydropneumatic tanks. The design capacity is limited to the 23 existing mobile home connections.

2.2.3.4 Sun Valley Trailer Park

The Sun Valley Trailer Park is a private community water system, which consists of single drilled well. No well construction or yield information was available. A submersible pump of unknown size directs water from the well into two 120 gallon pressure tanks. The design capacity is limited to the existing 29 connections.

2.2.3.5 Oak Hill Academy

The Oak Hill Academy water system is a private community water system. The system consists of three drilled wells, a booster pump station, an atmospheric storage tank, and distribution lines.

Well No. 1 was drilled to a depth of 150 feet. No other well construction information was available. The yield of the well is approximately 4.5 gpm. Well No. 3 was drilled to a depth 705 feet and cased and grouted to a depth of 92 feet. The yield is approximately 12 gpm. Well No. 5 was drilled to a depth of 810 feet and cased and grouted to a depth of 51 feet. The yield of the well is approximately 10 gpm.

The chlorination system injects chlorine solution into the inlet line of the storage tank when the wells are pumping. All wells pump directly to the storage tank prior to the distribution system.

A 26,026 gallon steel tank is used for storage. The booster pump station is equipped with two parallel pumping systems. Each system consists of two 115 gpm pumps arranged in series. A single booster pump operates at all times and is manually alternated by the operator. The pumps automatically shut off when the water level in the storage tank drops to within 3 feet of the tank floor.

The design capacity of the system was not available.

2.2.4 Smyth County

There are three known public community water systems in Smyth County that rely on groundwater. Smyth County owns and operates the Hutton Branch water system and the

Watson's Gap water system. In addition, the Town of Saltville owns and operates a public community water system.

2.2.4.1 Hutton Branch

Hutton Branch is a public community water system owned and operated by Smyth County. The system consists of two drilled wells. The Hutton Well is a 6 inch well drilled to a depth of 440 feet and cased to a depth of 100 feet. The yield is approximately 186 gpm. The well is equipped with a 90 gpm pump. The New Well is a 6-inch well drilled to a depth of 513 feet. No other well construction information was available. The yield is approximately 81gpm. The design capacity of the system is 193,000 gpd.

2.2.4.2 Watson's Gap Water System

The Watson's Gap Water System is a public community water system owned and operated by Smyth County. The system consists of one well drilled to a depth of 380 feet and cased to a depth of 51 feet. The yield is approximately 364 gpm. The well is equipped with a 135 gpm pump. The design capacity of the system is 194,400 gpd.

2.2.4.3 Town of Saltville

The Town of Saltville water system is a public community water system owned and operated by the Town. The system consists of two drilled wells. The Cardwell Town Well was drilled to a depth of 900 feet. No other well construction information was available. The yield is approximately 500 gpm. The well is equipped with a 600 gpm pump. Well No. 10 was drilled to a depth of 1,050 feet. No other well construction information was available. The yield of the well is approximately 220 gpm. The well is equipped with a 220 gpm pump. The design capacity is 576,000 gpd.

2.2.5 Washington County

Washington County has one known community water system utilizing groundwater. The Mendota water system is a public community water system owned and operated by the WCSA and is comprised of one drilled well. The well was drilled to a depth of 620 feet and cased to a depth of 129 feet. The yield is approximately 26 gpm and a pump capacity of 26 gpm. The design capacity for the system is 19,600 gpd.

2.2.6 Wythe County

The Speedwell water system and the Ivanhoe/Max Meadows water system are the only public community water systems in Wythe County utilizing a groundwater source. Barren Springs Subdivision is the only private community water system in Wythe County utilizing groundwater. Each is discussed below.

2.2.6.1 Ivanhoe/Max Meadows

The Ivanhoe/Max Meadows is a public community water system owned and operated by Wythe County. Sources for this system include two wells in Max Meadows, two wells in Fort Chiswell, and a small reservoir on Powder Mill Branch in Ivanhoe. Each well is treated by chlorination. Water is generally pumped south towards Ivanhoe through a series of pump stations and hydropneumatic tanks; however, the system has the capability to pump north toward Fort Chiswell if necessary.

The Max Meadows Well No. 1 was drilled to a depth of 220 feet and cased to a depth of 108 feet. The well has an approximate yield and pump capacity of 50 gpm. The Max Meadows Well No. 2 was drilled to a depth of 325 feet and cased to a depth of 72 feet. The well has an approximate yield and pump capacity of 274 gpm. These wells pump water into the distribution system and to two storage tanks. The east tank has the capacity of 200,000 gallons and the south tank has the capacity of 40,000 gallons.

The Fort Chiswell Well No. 1 is a drilled well. The well was drilled to a depth of 490 feet and cased to a depth of 259 feet. It has a yield of approximately 218 gpm and a pump capacity of 190 gpm. Fort Chiswell Well No. 2 was drilled to a depth of 605 feet and cased to a depth of 287 feet. The well has an approximate yield and pump capacity of 210 gpm. These wells pump water into the distribution system and to a 0.25 MG storage tank. The pump station in Fort Chiswell is capable of pumping water from the Max Meadow area to this storage tank if needed. From the Fort Chiswell area, water is pumped toward Ivanhoe through a series of pump stations located in Felts, Piney and SlabTown. Each of these pump stations consist of a 20,000 gallon storage tank and a hydropneumatic tank to maintain pressure throughout the system. These

pump stations also have the capability to pump in the other direction toward Fort Chiswell if needed.

A small reservoir on Powder Mill Branch is the water supply for the Ivanhoe WTP. Water flows by gravity from this impoundment to the WTP. The WTP consists of chemical addition facilities, a flocculation basin, a settling basin, and one high rate sand filter. After chlorination, the treated water is pumped into an aboveground steel clearwell with a capacity of 80,000 gallons. This WTP is not operated when the raw water is highly turbid.

The Ivanhoe WTP has a design capacity of 144,000 gpd and produces approximately 25,000 gpd. On weekends and during holiday periods, the county does not operate the Ivanhoe WTP, but utilizes the well systems in the Fort Chiswell area to supply the Ivanhoe community.

2.2.6.2 Speedwell

The Speedwell water system is a public community water system owned and operated by Wythe County. This system consists of two wells that serve approximately 165 customers.

Well No. 1 is a drilled well and no well construction information was available. The yield is approximately 77 gpm. The water is chlorinated prior to entering the distribution system. Well No. 2 is a drilled well and no well construction information was available. The yield is approximately 51 gpm and produces water with high iron and manganese concentrations. Treatment of this source includes chemical addition, green sand filtration, and chlorination. Chlorine and potassium permanganate are added to oxidize the iron and manganese before the water is filtered. Two 3.5 foot diameter green sand filters remove the iron and manganese prior to final chlorination. Soda ash is added for pH adjustment, along with chlorine for disinfection. Finished water is delivered to an 80,000 gallon storage tank, which is the lower service level tank.

Adjacent to the 80,000 gallon tank is a booster station which pumps water to the higher service level. This zone has a total of 200,000 gallons of storage. The two levels are connected and a pressure reducing valve is used to equalize the two pressure levels.

The Speedwell system has a design capacity of 101,600 gpd or 254 ERCs.

2.2.6.3 Barren Springs Subdivision

The Barren Springs Subdivision is a private community water system owned and operated by the Barren Springs Waterworks, Inc. The system consists of five drilled wells. No well construction information was available for Well No. 1. Well Nos. 2, 3, and 4 were drilled to depths of 485 feet, 300 feet, and 330 feet, repectively. Well No. 5 was drilled to a depth of 510 feet and cased to a depth of 129 feet. No other well construction or yield information was available. The storage for the system consists of hydropneumatic tanks and storage tanks. Since the well yields are unknown and storage facilities are limited, the design capacity of the system is limited to the existing 65 connections.

2.2.7 City of Galax

The City of Galax does not own or operate a community water system using groundwater.

2.2.8 City of Bristol

The City of Bristol does not own or operate a community water system using groundwater.

2.2.9 Scott County

2.2.9.1 Town of Nickelsville

- Five wells - Well No. 1, No. 3, No. 4, No. 5, and No. 6

2.2.9.2 Town of Dungannon

- Two wells - Wells No. 1 and No. 2

2.2.9.3 Town of Clinchport

- Two wells - Wells No. 1 and No. 3

2.2.9.4 East Carters Valley (ECV) (Scott County PSA)

- One well - Lynn Mar Well

2.2.10 Lee County

2.2.10.1 Harvest Baptist Childcare Ministries

- One Well

2.2.10.2 Town of Jonesville

- Wynn Spring

2.2.10.3 Lee County (Lee County PSA) –

- Blue Spring
- KVS Quarry

2.2.11 Wise County

2.2.11.1 Dunbar (Wise County PSA)

- One Well

2.2.11.2 Town of Coeburn

- Jenny Mine

2.2.11.3 Town of Wise

- White Oak Mine Well

2.2.12 Russell County

2.2.12.1 Appalachian Detention Center

- Two wells - Well No. 1 and No. 2

2.2.12.2 Green Valley (Russell County PSA)

- Two wells - Well No. 27A and No. 30C

2.2.12.3 Town of Cleveland

- Two wells - Kiser Well and Tank Hollow Falls Well

2.2.12.4 Town of Honaker

- Four wells - Davis Well, Putnam Well, Joe Bill Well, and New Garden Well

2.2.12.5 Mountain View Retirement Home

- One Well

2.2.12.6 Wallace Manor

- Three wells - Strouth Well No. 1, Strouth Well No. 2 and Purcell Well

2.2.12.7 Russell County Water and Sewer Authority

- Three wells - Crystal Well and Seven Springs Wells No. 1 and No. 2
- Three springs – Sargent Spring, White Spring, and Seven Springs
- Lower Banner Mine Portal

2.2.13 Tazewell County

2.2.13.1 Barkay Estates

- One well - Well No. 1

2.2.13.2 College Estates

- One Well

2.2.13.3 Porter Farm Subdivision Water Association

- Two wells - Hollyfield Well and Byrd Well

2.2.13.4 Claypool Hill (Tazewell County PSA)

- Two wells - Taylor Well and Buskell Well

2.2.13.5 Town of Bluefield

- Dill Springs

2.2.13.6 Town of Pocahontas

- Big Spring (Abbs Creek)

2.3 Community Water Systems Using Surface Water Reservoirs

2.3.1 Bland County

There are no community water systems using surface water reservoirs within Bland County.

2.3.2 Carroll County

There are no community water systems using surface water reservoirs within Carroll County.

2.3.3 Grayson County

There are no community water systems using surface water reservoirs within Grayson County.

2.3.4 Smyth County

There are no community water systems using surface water reservoirs within Smyth County.

2.3.5 Washington County

There are no community water systems using surface water reservoirs within Washington County.

2.3.6 Wythe County

The Ivanhoe/Max Meadows water system is a public community water system owned and operated by Wythe County. The Ivanhoe/Max Meadows water system utilizes a small reservoir on Powder Mill Branch as well as groundwater. The Ivanhoe/Max Meadows water system is discussed in section 2.2.6.1.

2.3.7 City of Galax

The City of Galax does not own or operate a community water system using a surface water reservoir.

2.3.8 City of Bristol

The City of Bristol water system is a community water system owned and operated by the Bristol Virginia Utilities Board (BVUB). The system consists of a conventional surface WTP, five atmospheric storage tanks, and two booster pump stations. The source of raw water is the South Holston Lake. There are three intakes on the lake at three different levels. Dual vertical turbine pumps, each rated at 7,000 gpm are used at this pump station. A potassium permanganate feed system is located in the lower level of the pump station and is added to the water as it leaves the pump station as additional disinfection to the raw water to reduce the chlorine demand.

Water flows from the raw water pump station into the WTP. As it enters the WTP, the water goes into a flash mix basin, which has a volume of 3,016 gallons and allows for a detention time of 26 seconds. Caustic soda, chlorine, carbon, and coagulant are added to the water as it enters the basin.

Two 684,375 gallon sedimentation basins receive the water from the flash mix basin. These sedimentation basins allow for an approximate 3.25 hour detention time when the WTP is running at the design flow of 10 MGD.

The water then moves through dual media filters, consisting of silica sand and anthracite media, at a rate of 4 gpm/ft^2. After water moves through the filters, it goes into the 1.0 MG clearwell. Before water reaches the clearwell, chlorine, fluoride, an orthophosphate based corrosion inhibitor, and caustic soda are added.

Four high service pumps deliver the finished water from the clearwell to the distribution system. Two of the pumps are rated at 3,500 gpm, one at 2,100 gpm, and one at 1,400 gpm. Water is delivered to two reinforced concrete tanks with approximate capacities of 1.0 MG and 2.1 MG. From these tanks, booster stations deliver water into three smaller tanks.

The distribution system has a total combined storage of 5.76 MG. The design capacity for the BVUB community water system is 10 MGD or 25,000 ERCs.

2.3.9 City of Norton

2.3.9.1 City of Norton

- Upper and Lower Reservoirs

2.3.10 Wise County

2.3.10.1 Town of Appalachia

- Ben's Branch Reservoir

2.3.10.2 Town of Big Stone Gap

- Big Cherry Reservoir

2.3.10.3 Town of Wise

- Wise Reservoir

2.3.10.4 Town of Pound

- Pound Reservoir

2.3.11 Tazewell County

2.3.11.1 Greater Tazewell Regional WTP (Tazewell County PSA)

- Lake Witten
- Cox Reservoir

2.3.12 Dickenson County

2.3.12.1 John Flannagan Water Authority

- John Flannagan Reservoir

2.4 Community Systems Using Stream Intakes

2.4.1 Bland County

The BCSA does not own or operate a community water system using a stream intake; however there is one private community water system in Bland County utilizing a steam intake for water supply. The Bland Correctional Center is owned and operated by the Virginia Department of Corrections (VDOC). The VDOC operates a conventional WTP at the facility that can treat up to 360,000 gpd. The source of raw water for the WTP is an intake on Kimberling Creek. Storage consists of two 95,000 gallon tanks. The design capacity for the system is 360,000 gpd, based on the treatment capacity.

2.4.2 Carroll County

The CCPSA does not own or operate a community water system using a stream intake; however, the Town of Hillsville owns and operates a community water system using a stream intake.

2.4.2.1 Town of Hillsville

The Town of Hillsville water system consists of a WTP, a 482,704 gallon storage tank, a 643,485 gallon storage tank, a 100 gpm booster pump station, and distribution system. The source of raw water for the WTP water system is an intake on Little Reed Island Creek. A raw water pump station equipped with two vertical turbine 420 gpm pumps sends water to the WTP through an 8-inch main.

Raw water flows into a flash mix basin upon entering the WTP. Soda ash, chlorine, alum, carbon, and fluoride are added to the raw water. The flash mix basin has a volume of 396 gallons.

After leaving the flash mix basin, water enters three flocculation basins, each with a volume of 4,172 gallons. Two sedimentation basins follow, providing a combined volume of 111,810 gallons. Each basin is equipped with a 14.5 ft weir. Water is filtered through two rapid rate sand filters with a combined capacity of 427 gpm at 2 gpm/ft^2. Filter media consists of anthracite, torpedo sand, sand, and support gravel. Filtered water is stored in a 44,400 gallon clearwell. Dual 417 gpm vertical turbine pumps send water through an 8-inch diameter finished waterline to the distribution system.

The Motley Hill booster pump station is equipped with two 100 gpm centrifugal pumps. The station also includes a 2,500 gallon hydropneumatic tank, a low pressure cut-off switch, and an alarm light on the exterior of the station to inform local residences of a pump station failure.

Water is stored in two atmospheric-type welded steel water tanks. The Motley Hill tank has an effective storage volume of 190,541 gallons. The Route 780 tank has an effective permitted storage volume of 216,940 gallons.

The Town of Hillsville provides bulk water sales to the CCPSA for its Industrial Park system and the Carroll County system on an as needed basis. The design capacity of the system is 600,000 gpd.

2.4.3 Grayson County

Grayson County does not own or operate a community water system using a stream intake; however, the Town of Fries owns a community water system using a stream intake.

2.4.3.1 Town of Fries

The Town of Fries water community water system consists of a conventional surface WTP and a ground storage reservoir. Raw water for the system originates from Eagle Bottom Creek. Water flows by gravity into an intake structure approximately 200 yards north of the WTP. Upon entering the WTP, the raw water is treated with alum, carbon, soda ash, fluoride and chlorine. Alum, carbon, and soda ash are applied to the water by volumetric chemical feeders. Chlorination is provided by duplicated V-notch type chlorinators in combination with 150 pound chlorine cylinders. Fluoride is fed into the water by a fluoride saturator and solution pump paced off the raw water flow meter.

After these chemicals are added, the water enters a baffled flocculation chamber, with a volume of 6,799 gallons. At the design flow rate of 200 gpm, this chamber provides 34 minutes of detention time. Following flocculation, the water enters two rectangular sedimentation basins. At the design flow of 200 gpm, the sedimentation basins provide approximately 10 hours of detention time. After existing the sedimentation basins, water flows into two 100 gpm rated circular filters, with a maximum filtration rate of 2 gpm/ft² each filter. Once filtration is

complete, the water is chlorinated before entering the covered clearwell, with a total volume of 53,407 gallons, located adjacent to the WTP.

Overflow from the distribution system is delivered to a steel ground tank, with an effective volume of 218,542 gallons, located north of town. This water system has a design capacity of 288,000 gpd.

2.4.4 Smyth County

There are two community water systems utilizing stream intakes as well as three community water systems utilizing springs in Smyth County. The Town of Marion and the Thomas Bridge Water Corporation use water from stream intakes and the Chilhowie/WCSA Regional WTP, the Town of Chilhowie and the Rye Valley Water Authority use spring water as a water source.

2.4.4.1 Town of Marion

The Town of Marion water system is a public community water system owned and operated by the Town of Marion. The source of raw water is the Middle Fork of Holston River. The design capacity of the system is 3.0 MGD based on the WTP capacity. No other information regarding the operations of the Town of Marion water system was available.

2.4.4.2 Thomas Bridge Water Corporation

The Thomas Bridge Water Corporation (TBWC) is a private community water system. The TBWC owns and operates a WTP. The raw water source for the WTP is the South Fork of the Holston River and Taylor Spring. Water from Taylor Spring is directed into a spring water holding pond adjacent to the raw water intakes on the river. The water in the pond is then directed into the river intake wet well. Water is pumped from this wet well to the WTP by two vertical turbine type pumps, each rated at 1,400 gpm.

As the water enters the WTP, it is injected with one or more of the following: chlorine, polymer, carbon, alum, fluoride, clay, and caustic soda before passing into the in-line static mixer.

From the static mixer, water flows into two dual upflow solids contact basins. The flocculation and mixing zone of each basin provide a 31 minute detention time at the design flow of 700 gpm. The upflow rate through each basin is 0.91 gpm/ft^2.

Water flows from the basins to two multimedia type filters. Each filter has a surface area of 349.25 ft² with a filtration rate is 2 gpm/ft². The filter media consists of anthracite, silica sand, and garnet.

After filtration, chlorine, fluoride, caustic soda, and sodium hexametaphosphate are injected into the waterline going to the clearwell. The clearwell is a welded steel tank, with an effective storage of 63,448 gallons.

Three high service pumps, each rated at 720 gpm, deliver water into the distribution system. The distribution system consists of three storage tanks and one booster station. The three storage tanks are welded steel tanks, two 142,000 gallon tanks and one 42,000 gallon tank.

The design capacity for the system is 792,000 gpd or 1,982 ERCs.

2.4.4.3 Chilhowie/WCSA Regional WTP

The Chilhowie/WCSA Regional WTP is a public regional WTP owned and operated by the Washington County Service Authority (WCSA) and the Town of Chilhowie. The raw water sources for the WTP are two springs: Coles Spring and Millcreek Spring. Water from Coles Spring is used by the WCSA while water from Millcreek Spring is used by the Town of Chilhowie. The Town of Chilhowie is allotted 1.4 MGD of the 2.5 MGD permitted capacity. No other information regarding the operations of the WTP was available.

2.4.4.4 Rye Valley Water Authority

The Rye Valley Water Authority (RVWA) is a private community water system owned and operated by the RVWA. The system consists of four springs. No other information regarding the operations of the system was available.

2.4.4.5 Town of Chilhowie

The Town of Chilhowie water system is a public community water system owned and operated by the Town. The system consists of two springs, the Jones Spring and the Widener Spring. The design capacity of the system is 1.4 MGD. No other information regarding the operations of the system was available.

2.4.5 Washington County

The WCSA owns and operates a public community water system using a stream intake. The source of the raw water for the WTP comes from the Middle Fork of the Holston River. The design capacity for the WTP is 4.6 MGD. The intake for the pump station includes five wide openings allowing water from the river to flow into the wet well. Water is pumped to the WTP by three vertical turbine pumps, each rated at 2,083 gpm.

Raw water is pumped into the two flash mix basins of the WTP. Fluoride and caustic soda are added to the raw water line before entering the mix basin. Liquid coagulant, polymer and carbon are fed directly into the flash mix basin. Chlorine gas is added to both the raw water in the flash mix basin and the finished water from one ton cylinders. Each of the two flash mix basins provide a detention time of 28 seconds at the design flow rate.

Flow from the flash mix basins is delivered to three flocculation basins arranged to either operate in series or parallel. The combined detention time throughout all flocculation basins is 27 minutes at the design flow.

Water flows from the flocculation basins to three sedimentation basins, with a total volume of 1.2 MG. The detention time provided by the sedimentation basins is 6.1 hours at the design flow rate.

The water then flows into the three dual media filters, each rated at 4gpm/ ft^2. The filters comprise gravel, sand, and anthracite. The total surface area of the filter is 804 ft^2. Filtered water is delivered to the 0.158 MG clearwell. Three vertical turbine pumps, rated at 1,600 gpm, deliver water to the distribution system. Any two pumps running simultaneously will provide the minimum water treatment design flow of 4.6 MGD.

In addition to the intake on the Middle Fork of the Holston River, Reservation Spring is used as a raw water source. The water is disinfected and fluorinated at the source. From the chlorination-fluorination station, the water flows by gravity to the distribution system. The overflow water is sent to the WTP wash water tank used to backwash the dual media filters. The average flow from the spring is approximately 0.908 MGD.

The system is also fed by the Chilhowie/WCSA Regional WTP. The WTP is owned and operated by the Town of Chilhowie and the WCSA. The WTP utilizes by two springs as a raw water source: Coles Spring and Millcreek Spring. Water from Coles Spring is used by the WCSA while water from Millcreek Spring is used by the Town of Chilhowie. The WCSA is allocated 1.1 MGD of the 2.5 MGD permitted capacity. Water flows into the WCSA distribution system through one metered point.

The WCSA distribution system comprise 14 major booster pump stations, 9 small in-line booster pump stations, and 18 large storage tanks. The 18 storage tanks have a total combined storage of 9.13 MG.

The design capacity for the entire system is limited to 6.523 MGD plus a portion of the capacity of the BVUB water system capacity.

2.4.6 Wythe County

There are three public community water systems utilizing a stream intake in Wythe County and one public community water system utilizing a spring.

2.4.6.1 Austinville

The Austinville water system is a public community water system owned and operated by Wythe County. The system has a permitted capacity of 216,000 gpd. Raw water is obtained from the New River through an intake west of the Route 636 Bridge. This intake has series of inlet screens. Within the intake, there are four centrifugal pumps, each rated at 180 gpm, that pump the raw water to the WTP.

A 52,800 gallon circular basin is used to provide pre-settling prior to treatment. Water levels in this basin control the raw water pump operation at the river. A horizontal centrifugal booster pump is used to pump raw water from the pre-settling basin to the flocculation and settling units.

Flash mix flocculation and sedimentation are achieved in one circular basin. This basin uses slotted baffles to achieve rapid mix and flocculation mixing. Alum and soda ash are added at the head of this unit. A spiraling baffle system within the circular tank provides the sedimentation

surface area and loading rate necessary to provide adequate separation. Water from the settling basin flows by gravity to a 10 foot diameter sand filter housed in a steel enclosure.

A clearwell, with a capacity of approximately 11,800 gallons, is located beneath the WTP. Chlorine is added at the rapid mix basin and also in the clearwell using two cylinder mounted chlorinators.

Treated water from this facility is pumped to a 100,000 gallon standpipe adjacent to the WTP. This is the main storage facility for the system. A second tank with a capacity of 10,000 gallons is located farther to the east.

The design capacity for the system is 216 gpd.

2.4.6.2 New River Regional Water Authority

The New River Regional Water Authority (NRRWA) is a public community water system owned by the Town of Wytheville, Wythe County, and CCPSA. The water system consists of an intake on the New River, a raw water line, a conventional WTP, and a finished waterline. The 30 year 1 day low flow (1Q30) for the New River at the intake is 214 cubic feet per second (cfs) or 138 MGD.

The intake includes three intake screen assemblies deliver raw water to the raw water intake wet well. The wet well is equipped with two submersible pumps each rated at 2800 gpm at 226 TDH. The raw water pumps are operated manually onsite or from the WTP.

Raw water enters the WTP and is sampled for turbidity and pH using inline monitoring equipment. The 30 inch raw water line splits into two 12-inch waterlines. Each waterline supplies a pre-filtration treatment train which includes raw water flow metering, static mixing, flocculation, and sedimentation. Each pre-filtration treatment train is designed for a 2.0 MGD flow rate.

Water is filtered using three dual media, gravity flow, high rate filters with a maximum filtration rate of 4 gpm/ft^2. Filter media consists of anthracite, silica sand, and support media. Post-filtration chlorination, pH adjustment and chemical corrosion inhibitor are fed into the filter effluent to the chlorine contact tank. A concrete clearwell is located adjacent to the chlorine

contact tank. The chlorine contact tank and clearwell are each equipped with a single vertical turbine high service pump and vertical turbine backwash pump.

A finished water line sends water to the north side of the New River. Two master meters vaults are used to tie into the existing Austinville water system and the CCPSA.

A series of programmable logic controllers and SCADA systems are provided to control, monitor, and record various operations at the intake, WTP, and the distribution system.

DEQ has issued a Virginia Water Protection Permit to withdraw 4.0 MGD up to a maximum of 10.0 MGD from the intake. The design capacity of the system is 4.0 MGD based on limited intake pump capacity.

2.4.6.3 Town of Wytheville

The Town of Wytheville owns and operates a public community water system utilizing a stream intake. Raw water is obtained from Reed Creek. The Town is permitted to withdraw up to 4.0 MGD from this source.

A coarse bar screen protects the inlet to the raw water pump station. A vertical traveling water screen located at the raw water pump station prevents smaller objects and fish from entering the raw water wet well. Two 20 HP raw water pumps rated at 2,800 gpm send the raw water to the flash mix basin.

The flash mix basin has a volume of approximately 690 gallons. Chlorine and fluoride are added to the raw water line prior to entering the flash mix basin. Liquid alum is added near the eye of the mixer. In the fall season, carbon is added to control taste and odor problems. During the winter season, polymers are added to improve the coagulation/flocculation process.

Water leaving the flash mix basin passes through three basin flocculation chambers. Piping and gates are provided so that the flocculation basins can be operated either in parallel or in series. Typically, the Town operates these units in series reducing the mixing intensity as water proceeds through the basins. Each of the three flocculation basins has a volume of 19,060 gallons, which provides a total detention time of 20 minutes at the 4.0 MGD treatment rate. The flocculators have 1 HP motors and variable speed controls to adjust the mixing intensities.

The water then passes to a two stage sedimentation basin. Water passes into one of two sedimentation compartments, each with a capacity of 178,700 gallons. These units provide a detention time of 1.82 hours at the 4.0 MGD treatment rate. Water is then conveyed through two channels to a second series of sedimentation units which provide an additional two hours of detention time. These units have a capacity of approximately 333,000 gallons.

The water is then treated in one of four high rate rapid sand filters. Each filter has a surface area of 180 square feet and has an approved loading rate of 4.0 gpm/ft². The Town has the capability of feeding carbon, chlorine and polymers to the filter influent line when additional chemicals are required.

Filtered water is stored in a 68,000 gallon clearwell where chlorine is added for disinfection. The Town has four finished water pumps that transport the treated water from the clearwell to the distribution system and storage tanks.

Two lagoons are used to contain backwash and solids residue from the filter backwash and sedimentation basin cleaning processes. Solids are removed from the lagoons and transported to the wastewater treatment plant for dewatering.

Treated water is pumped to the Town's distribution network. The Town of Wytheville has three storage tanks with a combined capacity of approximately 4.0 MG.

The design capacity for the water system is 4.0 MGD.

2.4.6.4 Town of Rural Retreat

The Town of Rural Retreat water system is a public community water system owned and operated by the Town. The system consists of one spring, the Phillippi Spring. There is also an existing well located near the Phillippi spring. Staley spring is not longer being used as a raw water source.

The spring is disinfected by chlorination and fluoride is added at each source. The Town is currently in the process of adding a membrane filtration system at the Phillippi spring. The Town has three storage tanks; two 300,000 gallon tanks and one 500,000 gallon tank.

The permitted capacity of the Phillippi Spring is 500,000 gpd.

2.4.7 City of Galax

The City of Galax owns and operates a public community water system using a stream intake. The system consists of a 4.0 MGD WTP, seven storage tanks, two booster pump stations, and distribution system. The source of the raw water is Chestnut Creek. Water flows by gravity from the intake structure to the raw water pump station. The raw water pump station has three vertical turbine pumps. Two are rated at 1,400 gpm and one is rated at 2,800 gpm.

Raw water is pumped to the flash mix basin where chlorine, alum, lime, soda ash, and polymer are added. After the flash mix basin, water goes to two flocculation basins followed by three rectangular sedimentation basins. Following sedimentation, the water goes to two rapid rate sand filters. Chlorine and fluoride are added after filtration as the water goes to a 280,000 gallon concrete clearwell. Finished water is pumped into the distribution system by three vertical turbine pumps. The distribution system operates in five pressure zones.

The design capacity of the system is 4.0 MGD.

2.4.8 City of Bristol

The City of Bristol does not own or operate a community water system using a stream intake.

2.4.9 Scott County

2.4.9.1 Duffield (Scott County PSA)

- North Fork Clinch River
- Spurlock Branch

2.4.9.2 Moccasin Gap (Scott County PSA)

- Big Moccasin Creek

2.4.9.3 Town of Gate City

- Big Moccasin Creek

2.4.10 City of Norton

- Benges Branch
- Robinette Branch

2.4.11 Wise County

2.4.11.1 Town of St. Paul

- Clinch River

2.4.11.2 Wise County Regional (Wise County PSA)

- Clinch River

2.4.11.3 Town of Pennington Gap

- Powell River

2.4.12 Russell County

2.4.12.1 Town of Lebanon

- Big Cedar Creek

2.4.13 Tazewell County

2.4.13.1 Town of Bluefield

- Bluestone River

2.4.13.2 Town of Richlands

- Clinch River

2.4.13.3 Claypool Hill (Tazewell County PSA)

- Little River

2.4.13.4 Greater Tazewell Regional WTP (Tazewell County PSA)

- Clinch River

2.5 Amount of Ground or Surface Water Purchased from Water Supply Systems Outside the Geographic Boundaries of the Municipality

2.5.1 Bland County

The Rocky Gap/Bastian water system is a public community water system is owned by the BCSA. This system receives water from the Bluefield Valley Water Works in West Virginia. The system is divided into two pressure levels: Rocky Gap and South Gap. The Rocky Gap and South Gap areas are served by the North Gap tank, which has a capacity of 200,000 gallons. A control valve located at South Gap feeds water to Bastian and is served by the Hicksville tank (250,000 gallons) and Bastian tank (100,000 gallons). The design capacity for the system is 230,000 gpd.

2.5.2 Carroll County

2.5.2.1 Carroll County Industrial Park

The Carroll County Industrial Park water system is a public community water system owned and operated by the CCPSA. Water for this system is purchased from the Town of Hillsville through a master meter located adjacent to U.S. Route 58.

The system consists of a 10-inch water line and a 392,106 gallon storage tank. The CCPSA is allotted up to 0.15 MGD by the Town of Hillsville.

2.5.2.2 Tower Road Water Supply

The Tower Road water supply is a public community water supply system owned and operated by the CCPSA. Water for this system is purchased from the Town of Hillsville. The CCPSA is allotted up to 0.15 MGD by the Town of Hillsville.

2.5.3 Grayson County

2.5.3.1 Fairview Water System

The Fairview Water System is a public community water supply owned and operated by Grayson County. The system includes distribution lines, two storage tanks, and a booster pump station. Water for this system is purchased from the City of Galax through a master meter located at the

pump station. Two 30 HP vertical turbine pumps are controlled by a telemetry system and a timer. Each booster pump is rated at 236 gpm.

The system contains two storage tanks. One of the storage tanks is a welded steel storage tank that has an effective volume of 310,000 gallons. The other storage tank has an effective volume of 110,000 gallons. Grayson County is allotted 101,000 gpd, based on the water purchase agreement with the City of Galax.

2.5.3.2 Oldtown Water System

The Oldtown Water System is a public community water supply system owned and operated by Grayson County. Water for this system is purchased from the City of Galax. Grayson County is allotted 101,000 gpd, based on the water purchase agreement with the City of Galax.

2.5.4 Smyth County

There are seven known community water systems in Smyth County that purchase water from water supply systems outside the geographic boundaries of the County. These systems include the following: Atkins Extension, East Hungry Mother, Poor Valley, Saint Clairs Creek, Saint John's Crossing, South Fork, and Walker Creek.

2.5.4.1 Atkins Extension

Atkins Extension is a public community water system owned and operated by Smyth County. Water for this system is purchased from the Town of Marion water supply. The design capacity for this system is 100,000 gpd.

2.5.4.2 East Hungry Mother

East Hungry Mother is a public community water system owned and operated by Smyth County. Water for this system is purchased from the Town of Marion water supply. The design capacity for this system is 100,000 gpd.

2.5.4.3 Poor Valley

Poor Valley is a public community water system owned and operated by Smyth County. Water for this system is purchased from the Town of Saltville water supply. No other information was available regarding the operations of this system.

2.5.4.4 Saint Clairs Creek

Saint Clairs Creek is a public community water system owned and operated by Smyth County. Water for this system is purchased from the Town of Chilhowie water supply. The design capacity of this system is 20,000 gpd.

2.5.4.5 Saint John's Crossing

Saint John's Crossing is a public community water system owned and operated by Smyth County. Water for this system is purchased from the Town of Chilhowie water supply. The design capacity of this system is 15,000 gpd.

2.5.4.6 South Fork

South Fork is a public community water system owned and operated by Smyth County. Water for this system is purchased from the Thomas Bridge Water Corporation. The design capacity of this system is 65,000 gpd.

2.5.4.7 Walker Creek

Walker Creek is a public community water system owned and operated by Smyth County. Water for this system is purchased from the Thomas Bridge Water Corporation. The design capacity of this system is 144,000 gpd.

2.5.5 Washington County

The WCSA owns and operates two public community water systems within the County that purchase water from water supply systems either outside geographic boundaries of the County. These systems include the Clear Creek and Hayter's Gap community water systems, which purchase water from BVUB. The WCSA purchases water from the BVUB through seven metered points. The design capacity is based on the BVUB design capacity of 10 MGD and/or contractual agreement between the WCSA and the BVUB. The current agreement requires the

WCSA to purchase a minimum of 0.40 MGD with no maximum volume established. However, the agreement does require both the Service Authority and the BVUB to initiate plans for expansion of their respective WTPs in the event the WCSA's and BVUB's combined usage of water approaches 80% of each WTP rated capacity.

2.5.6 Wythe County

Wythe County does not purchase water from water supply systems outside the geographic boundaries of the County.

2.5.7 City of Galax

The City of Galax does not purchase water from water supply systems outside the geographic boundaries of the City.

2.5.8 City of Bristol

The City of Bristol does not purchase water from water supply systems outside the geographic boundaries of the City.

2.5.9 Scott County[2]

2.5.9.1 East Carters Valley (ECV) (Scott County PSA)

- Bloomingdale Utility District

2.5.9.2 East Carters Valley (BUD)

- Bloomingdale Utility District

2.5.9.3 Spring Valley Subdivision (BUD)

- Bloomingdale Utility District

[2] Considers only the water available for purchase from sources external to the planning area and in which the purchase agreements represent contractually committed water quantities. Therefore, water available for purchase from within the planning area and the "as available" type purchase agreements have been excluded from consideration. (9 VAC 25-780-70 G/H)

2.5.9.4 Boozy Creek (Scott County PSA)

- Bloomingdale Utility District

2.5.9.5 Cove Creek (Scott County PSA)

- WCSA

2.5.10 Lee County[2]

2.5.10.1 Lee County (Lee County PSA)

- Arthur Shawanee Utility District

2.5.11 Russell County

2.5.11.1 Russell County Water and Sewer Authority

- Town of St. Paul

2.5.12 Tazewell County

2.5.12.1 Bluefield Valley Waterworks

- Bluefield Valley Waterworks

2.5.13 Dickenson County

2.5.13.1 Sandy Ridge (DCPSA)

- Wise County Public Service Authority

2.6 Non-Agricultural, Self-Supplied Users of More than 300,000 Gallons per Month of Surface Water

2.6.1 Bland County

There is only one known non-agricultural user of more than 300,000 gallons per month of surface water in Bland County: Pounding Mill Quarry Corporation. The Pounding Mill Quarry Corporation in Rocky Gap utilizes a stream intake on Wolf Creek.

2.6.2 Carroll County

There are no known non-agricultural users of more than 300,000 gallons per month of surface water in Carroll County.

2.6.3 Grayson County

There are no known non-agricultural users of more than 300,000 gallons per month of surface water in Grayson County.

2.6.4 Smyth County

There are two known non-agricultural user of more than 300,000 gallons per month of surface water in Smyth County: Holston Hills Country Club and the Marion Fish Cultural Station. The Holston Hills Country Club utilizes a stream intake on the Holston River. The name of the water source supplying the Marion Fish Cultural Station was not available.

2.6.5 Washington County

There are two known non-agricultural user of more than 300,000 gallons per month of surface water in Washington County: Old Farm Golf Course and the Virginian Golf Club Course. The Virginian Golf Club Course utilizes a stream intake; however, the name of the stream was not available.

2.6.6 Wythe County

The only known non-agricultural user of more than 300,000 gallons per month of surface water in Wythe County is the Wytheville Fish Hatchery; however, the name of the water source was not available.

2.6.7 City of Galax

There are no known non-agricultural, self-supplied users of more that 300,000 gallons per month of surface in the City of Galax.

2.6.8 City of Bristol

There are no known non-agricultural, self-supplied users of more than 300,000 gallons per month of surface in the City of Bristol.

2.6.9 Scott County

There are no known non-agricultural, self-supplied users of more than 300,000 gallons per month of surface in Scott County.

2.6.10 Lee County

There are no known non-agricultural, self-supplied users of more than 300,000 gallons per month of surface in Lee County.

2.6.11 City of Norton

There are no known non-agricultural, self-supplied users of more than 300,000 gallons per month of surface in the City of Norton.

2.6.12 Wise County

There are no known non-agricultural, self-supplied users of more than 300,000 gallons per month of surface in Wise County.

2.6.13 Russell County

2.6.13.1 Moss #3 Prep Plant

- Chaney Creek

2.6.13.2 Clinch River Power Plant

- Clinch River

2.6.14 Tazewell County (User – Source)

2.6.14.1 Fincastle Country Club

- Bluestone River

2.6.14.2 Richwood Golf Club

- Bluestone River

2.6.15 Dickenson County (User – Source)

2.6.15.1 McClure #1 & Prep Plant

- Caney Creek

2.6.15.2 Paramont Deep Mine 26

- Lick Fork

2.6.15.3 Paramont Deep Mine 35

- Chaney Creek

2.6.16 Buchanan County (User – Source)

2.6.16.1 Vansant Coke Ovens

- Dismal River

2.6.16.2 Vansant #2 Prep Plant

- Dismal River

2.7 Non-Agricultural, Self-Supplied Users of More than 300,000 Gallons per Month of Ground Water

2.7.1 Bland County

Limited water use information was available for the non-agricultural, self-supplied users using groundwater in Bland County. There are four known non-agricultural, self-supplied users using groundwater in Bland County. Table 2.7.1 presents available information for the known non-agricultural, self-supplied users using groundwater in Bland County.

Table 2.7.1: Summary of non-agricultural, self-supplied users using groundwater in Bland County.

Water System	Source	Design Capacity	Well Yield (Approximate)	Well Pump Capacity	Effective Storage Capacity
American Mine Research	Drilled Well	100 Employees	Unknown	Unknown	167 Gallons
ABB Power T & D Company	Drilled Well	400 Employees	10 gpm	Unknown	100,000 Gallons
Big Walker Motel	Drilled Well	Unknown	Unknown	Unknown	Unknown
Wolf Creek Golf Club	Drilled Well	Unknown	Unknown	Unknown	Unknown

2.7.2 Carroll County

Limited water use information was available for the non-agricultural, self-supplied users using groundwater in Carroll County. Table 2.7.2 presents available information for the known non-agricultural, self-supplied users using groundwater in Carroll County.

Table 2.7.2: Summary of non-agricultural, self-supplied users using groundwater in Carroll County.

Water System	Source	Design Capacity	Well Yield (Approximate)	Well Pump Capacity	Effective Storage Capacity
Fancy Gap Elementary School	Drilled Well	10,000 gpd	15 gpm	Unknown	Unknown
Gladesboro Elementary School	Drilled Well	10,000	Unknown	15 gpm	667 Gallons
Laurel Elementary School	Drilled Well	10,000 gpd	12 gpm	Unknown	667 Gallons
Little Treasures Learning Center	Drilled Well	6,048 gpd	4.0 gpm	4.0 gpm	Unknown
Oakland Elementary School	Drilled Well	10,000 gpd	12 gpm	Unknown	Unknown
Tri-area Health Clinic	Drilled Well	Unknown	Unknown	Unknown	Unknown
Alpine Crest	Drilled Well	24,480 gpd	30 gpm	17 gpm	Unknown
Blue Ridge Music Center	Two Drilled Wells	76,320 gpd	Well No. 1 - 18 gpm Well No. 1 - 35 gpm	Well No. 1 - 18 gpm Well No. 1 - 35 gpm	Unknown
Camp Curtain Call	Drilled Well	31120 gpd	23 gpm	23 gpm	Unknown
Cockerham's Food Mart #5	Drilled Well	Unknown	Unknown	Unknown	Unknown
Crooked Creek Wildlife Management Area	Drilled Well	13,600 Gallons	17 gpm	Unknown	5,000 Gallons
Crooked Oak Restaurant	Drilled Well	Unknown	Unknown	Unknown	Unknown
Fancy Gap Cabins & Campground	Drilled Well	9,000 gpd	6.0 gpm	6.0 gpm	Unknown
Fox Trail Campground	Drilled Well	Unknown	Unknown	Unknown	Unknown
Gospel Light Christian Camp	Drilled Well	Unknown	35 gpm	35 gpm	Unknown

Table 2.7.2: Summary of non-agricultural, self-supplied users using groundwater in Carroll County.					
Water System	**Source**	**Design Capacity**	**Well Yield (Approximate)**	**Well Pump Capacity**	**Effective Storage Capacity**
Grace Baptist Church	Drilled Well	Unknown	Unknown	Unknown	Unknown
Groundhog Mountain Picnic Area	Two Drilled Wells	Unknown	Well No. 1 - 1.4 gpm Well No. 2 - 1.3 gpm	Unknown	10,133 Gallons
High Chaparral Inc.	Drilled Well	37,440 gpd	26 gpm	26 gpm	Unknown
Lakeview Motel & Restaurant	Drilled Well	Unknown	4.0 gpm	4.0 gpm	Unknown
Mountain Laurel Restaurant	Drilled Well	Unknown	Unknown	Unknown	Unknown
Mountain Top Motel	Drilled Well	Unknown	Unknown	Unknown	Unknown
Rhudy's Drive In	Drilled Well	Unknown	Unknown	Unknown	Unknown
Treasure Potts	Drilled Well	Unknown	Unknown	Unknown	Unknown
Utts Campground	Drilled Well	Unknown	18 gpm	11 gpm	Unknown

2.7.3 Grayson County

Limited water use information was available for the non-agricultural, self-supplied users using groundwater in Grayson County. Table 2.7.3 presents available information for the known non-agricultural, self-supplied users using groundwater in Grayson County.

Table 2.7.3: Summary of non-agricultural, self-supplied users using groundwater in Grayson County.					
Water System	**Source**	**Design Capacity**	**Well Yield (Approximate)**	**Well Pump Capacity**	**Effective Storage Capacity**
Baywood Elementary School	Drilled Well	Existing students and staff	4.0 gpm	1.5 HP	5,333 Gallons
Bridle Creek Elementary School	Drilled Well	Existing students and staff	Unknown	9.4 gpm	182 Gallons
Mt. Rogers School	Drilled Well	Existing students and staff	Unknown	Unknown	183 Gallons
Providence Elementary School	Drilled Well	Existing students and staff	Unknown	9.4 gpm	Unknown
21 Grocery	Drilled Well	Unknown	Unknown	Unknown	Unknown

Table 2.7.3: Summary of non-agricultural, self-supplied users using groundwater in Grayson County.					
Water System	**Source**	**Design Capacity**	**Well Yield (Approximate)**	**Well Pump Capacity**	**Effective Storage Capacity**
Camp Dickerson	Drilled Well	Unknown	Unknown	Unknown	Unknown
Cheerio Adventures	Drilled Well	Unknown	Unknown	Unknown	Unknown
Comers Rock Picnic Area	Drilled Well	4000 gpd	5 gpm	Unknown	2,213 Gallons
Creeper Trail Campground	Drilled Well	7,920 gpd	5 gpm	5 gpm	Unknown
Grayson Highlands Office	Drilled Well	15,120 gpd	11 gpm	24 gpm	Unknown
Grayson Highlands Stable	Drilled Well	7,200 gpd	5 gpm	5 gpm	Unknown
Grayson Highlands State Park Office	Seven Drilled Wells	Unknown	Unknown	Unknown	81,000 Gallons
Grayson Highlands Picnic Area	Drilled Well	21,600 gpd	15 gpm	15 gpm	Unknown
Grayson Highlands Visitor Center	Drilled Well	12,240 gpd	8 gpm	8 gpm	Unknown
Houndshell Campground	Drilled Well	Unknown	Unknown	Unknown	Unknown
Log House Trading Post & Restaurant	Drilled Well	Unknown	18 gpm	30 gpm	Unknown
Mt. Rogers Volunteer Fire Dept.	Drilled Well	Unknown	Unknown	Unknown	Unknown
New River Campground & Canoe	Drilled Well	Unknown	Unknown	Unknown	Unknown
Patton RV Park	Drilled Well	3,600 gpd	3 gpm	3 gpm	Unknown
Shady Shack Campground	Drilled Well	Unknown	Unknown	Unknown	Unknown
Whitetop Community Center	Drilled Well	46,080 gpd	32 gpm	32 gpm	Unknown
Whitetop Station	Drilled Well	28,800 gpd	20 gpm	24 gpm	Unknown

2.7.4 Smyth County

Limited water use information was available for the non-agricultural, self-supplied users using groundwater in Smyth County. Table 2.7.4 presents available information for the known non-agricultural, self-supplied users using groundwater in Smyth County.

Table 2.7.4: Summary of non-agricultural, self-supplied users using groundwater in Smyth County.

Water System	Source	Design Capacity	Well Yield (Approximate)	Well Pump Capacity	Effective Storage Capacity
A R E Camp	Drilled Well	24,480 gpd	Unknown	Unknown	Unknown
Brushy Mountain ADM SC	Drilled Well	43,200 gpd	30 gpm	Unknown	Unknown
Grindstone Recreation Area	Drilled Well	43,200 gpd	30 gpm	30 gpm	Unknown
Hurricane Recreation Area	Drilled Well	7,200 gpd	5.0 gpm	5.0 gpm	Unknown
Konnarock Community Center	Drilled Well	Unknown	Unknown	Unknown	Unknown
Raccoon Branch	Drilled Well	28,800 gpd	20 gpm	20 gpm	Unknown

2.7.5 Washington County

Limited water use information was available for the non-agricultural, self-supplied users using groundwater in Washington County. Table 2.7.5 presents available information for the known non-agricultural, self-supplied users using groundwater in Washington County.

Table 2.7.5: Summary of non-agricultural, self-supplied users using groundwater in Washington County.

Water System	Source	Design Capacity	Well Yield (Approximate)	Well Pump Capacity	Effective Storage Capacity
Beartree No. 1	Drilled Well	43,200 gpd	30 gpm	Unknown	Unknown
Beartree No. 2	Drilled Well	43,200 gpd	30 gpm	30 gpm	Unknown
Beartree No. 3	Drilled Well	11,520 gpd	8.0 gpm	Unknown	Unknown
Callebs Cove Campground	Drilled Well	Unknown	Unknown	Unknown	Unknown
Riverside Campground	Drilled Well	Unknown	Unknown	Unknown	Unknown
Tumbling Creek	Drilled Well	17280 gpd	25 gpm	12 gpm	Unknown

2.7.6 Wythe County

Limited water use information was available for the non-agricultural, self-supplied users using groundwater in Wythe County. Table 2.7.6 presents available information for the known non-agricultural, self-supplied users using groundwater in Wythe County.

Table 2.7.6: Summary of non-agricultural, self-supplied users using groundwater in Wythe County.

Water System	Source	Design Capacity	Well Yield (Approximate)	Well Pump Capacity	Effective Storage Capacity
Jackson Memorial School	Drilled Well	10,000 gpd	36 gpm	19 gpm	617 Gallons
Deer Trail Park Campground	Drilled Well	Unknown	Unknown	Unknown	Unknown
Foster Falls Campground	Drilled Well	Unknown	Unknown	Unknown	Unknown
Hussey Mountain	Drilled Well	14,400 gpd	6.0 gpm	Unknown	Unknown
Shot Tower State Park	Drilled Well	62,000 gpd	43 gpd	43 gpd	Unknown
Stony Fork Recreation Area	Drilled Well	37,440 gpd	Unknown	Unknown	Unknown
Trail Motel	Drilled Well	Unknown	Unknown	Unknown	Unknown
Wytheville Fish Hatchery	Drilled Well	64,800 gpd	45 gpm	45 gpm	80 Gallons

2.7.7 City of Galax

There are no known non-agricultural, self-supplied users of more than 300,000 gallons per month of groundwater within the City of Galax service area.

2.7.8 City of Bristol

There are no known non-agricultural, self-supplied users of more than 300,000 gallons per month of groundwater within the City of Bristol service area.

2.7.9 Scott County

There are no known non-agricultural, self-supplied users of more than 300,000 gallons per month of groundwater within the Scott County service area.

2.7.10 Lee County

There are no known non-agricultural, self-supplied users of more than 300,000 gallons per month of groundwater within the Lee County service area.

2.7.11 City of Norton

There are no known non-agricultural, self-supplied users of more than 300,000 gallons per month of groundwater within the City of Norton service area.

2.7.12 Wise County

There are no known non-agricultural, self-supplied users of more than 300,000 gallons per month of groundwater within the Wise County service area.

2.7.13 Tazewell County (User – Source)

2.7.13.1 Coal Creek No. 3 Prep Plant

- Tiller Mine Well No. 1

2.7.14 Dickenson County (User – Source)

2.7.14.1 Nora Prep Plant

- One Well

2.7.15 Buchanan County (User – Source)

2.7.15.1 Luke Prep Plant

- Well No. 1

2.8 Agricultural Users Who Utilize More than 300,000 Gallons per Month, Estimate of Total Agricultural Usage by Source, Irrigation vs. Non-Irrigation and Source[3]

2.8.1 Bland County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in Bland County.

[3] 9 VAC 25-780-70 I.

2.8.2 Carroll County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in Carroll County.

2.8.3 Grayson County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in Grayson County.

2.8.4 Smyth County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in Smyth County.

2.8.5 Washington County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in Washington County.

2.8.6 Wythe County

The only known agricultural, self-supplied user using more than 300,000 gallons per month of surface or groundwater in Wythe County is the Wytheville Fish Hatchery. The Wytheville Fish Hatchery utilizes two springs for water supply. The annual average water usage for Boiling Springs is approximately 566 MG. The annual average water usage for West Springs is approximately 785 MG.

2.8.7 City of Bristol

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in the City of Bristol.

2.8.8 City of Galax

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in the City of Galax.

2.8.9 Scott County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in Scott County.

2.8.10 Lee County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in Lee County.

2.8.11 City of Norton

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in the City of Norton

2.8.12 Wise County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in the Wise County.

2.8.13 Tazewell County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in Tazewell County.

2.8.14 Dickenson County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in Dickenson County.

2.8.15 Buchanan County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in Buchanan County.

2.8.16 Russell County

There are no known agricultural, self-supplied users using more than 300,000 gallons per month of surface or groundwater in Russell County.

2.9 Residences and Businesses that are Self-Supplied and Individual Wells Withdrawing less than 300,000 Gallons per Month

To estimate the residences and businesses that are self-supplied and served by individual groundwater wells withdrawing less than 300,000 gallons per month, the population served by both public and private community water systems was determined. Population served by public community water systems was provided by each jurisdiction. Population served by private community water systems was provided by VDH. The total population for each jurisdiction was provided by the 2000 US Census Bureau.

A summary of the population served by individual wells by jurisdiction is included in Table 2.9. The population served by individual wells was estimated by subtracting the population served by public and private community water systems from the total population. It is important to note that the total county populations do not include the towns within the respective county. In addition, many of the towns serve areas in their respective county that are outside the city/town limits. The population served by the respective public community water system outside the city/town limits and in the respective county is included in the 'Population Served by Public CWS' for the respective county. For example, the total population for the Town of Chilhowie in 2000 was approximately 1,827 people. The Town of Chilhowie public community water system serves approximately 4,482 people. The additional 2,655 people served by the Town of Chilhowie public community water system are located Smyth County and were included in the 'Population Served by Public CWS' for Smyth County in Table 2.9.

Table 2.9: Estimated Population Served by Individual Residential Wells by Jurisdiction.

Jurisdiction	Total Population	Population Served by Public CWS	Estimated Population Served by Private CWS	Estimated Population Served by Individual Wells
Bland County	5,048	2,706	791	1,551
Carroll County*	26,638	9,068	902	16,668
Grayson County*	15,102	805	324	13,973
Smyth County*	22,701	11,527	4,776	6,398
Washington County*	40,968	39,873	0	1,095
Wythe County*	18,445	8,843	146	9,456
City of Bristol	17,367	17,347	0	20
City of Galax	6,837	6,700	0	137

Town of Abingdon	7,780	7,780	0	0
Town of Chilhowie	1,827	1,827	0	0
Town of Damascus	981	981	0	0
Town of Fries	614	614	0	0
Town of Glade Spring	1,374	1,374	0	0
Town of Hillsville	2,607	2,607	0	0
Town of Independence	971	971	0	0
Town of Marion	6,349	6,349	0	0
Town of Rural Retreat	1,350	1,350	0	0
Town of Saltville	2,204	2,204	0	0
Town of Troutdale	1,230	188	0	1,042
Town of Wytheville	7,804	7,804	0	0
Total	**188,197**	**130,918**	**6,939**	**50,340**
* Total county population does not include the towns within the respective county.				
** City/Town serves areas in respective county outside city/town limits. The population served by the respective public CWS is included in the 'Population Served by Public CWS' for the respective county.				

2.9.1 Scott County[4]

- 41,130 Residential, 20 Non-residential

2.9.2 Lee County[5]

- 2,300 Residential

2.9.3 Wise County[5]

- 4,400 Residential

2.9.4 Tazewell County[5]

- 5,360 Residential, 60 Non-residential

[4] The estimated number of self-supplied users has been determined by subtracting the number of connections reportedly served by community water systems from the total number of reported housing units and business establishments in each county/city. (9 VAC 25-780-70 J)

2.9.5 Dickenson County[5]

- 920 Residential, 5 Non-residential

2.9.6 Buchanan County[5]

- 4,000 Residential, 40 Non-residential

2.9.7 Russell County[5]

- 5,910 Residential, 45 Non-residential

2.10 Summary of Findings and Recommendations from Source Water Assessment Plans and Wellhead Protection Plans[5]

There are no known Source Water Assessment Plans (SWAPs) and/or Wellhead Protection Plans in the MRPDC region for the counties of Bland, Carroll, Grayson, Smyth, Washington, and Wythe; the cities of Bristol and Galax, and the towns of Abingdon, Chilhowie, Damascus, Fries, Glade Spring, Hillsville, Independence, Marion, Rural Retreat, Saltville, Troutdale, and Wytheville. In addition, there are no known SWAPs or Wellhead Protection Plans in the Cumberland Plateau PDC region for the counties of Buchanan, Dickenson, Russell, and Tazewell and the towns of Grundy, Clinchco, Clintwood, Haysi, Cleveland, Honaker, Lebanon, Bluefield, Cedar Bluff, Pocahontas, Richlands, and Tazewell or in the LENOWISCO region for the counties of Lee, Scott, and Wise; the City of Norton; and the towns of Jonesville, Pennington Gap, St. Charles, Appalachia, Big Stone Gap, Coeburn, Pound, St. Paul, Wise, Clinchport, Duffield, Dungannon, Gate City, Nickelsville, and Weber City.

**Need to update this section to include SWAPs for Rural Retreat, Rye Valley Water Authority, and Saltville.

[5] 9 VAC 25-780-70 K.