

# A Brief History of Our Local Water Supply

The Rivanna Water and Sewer Authority (RWSA) was established in 1973 to provide a safe and reliable water supply to the city of Charlottesville and Albemarle County. In 2006, after conducting a lengthy community process to identify a plan to expand the region's water supply to meet projected growth to the year 2050, the RWSA recommended raising the height of the Ragged Mountain Reservoir (RMR) dam at the Ragged Mountain Natural Area by 45 feet. The RMR is currently filled via a pipeline from the Moorman's River. Responding to substantial public comment relating to the Moorman's River, the plan was modified to include a new 10-mile pipeline from the South Fork Rivanna Reservoir (SFRR) to replace the current pipeline. The estimated cost for the new dam, pipeline and needed upgrades is \$135,000,000.

## A River Runs Through It

In the early 1700s when Virginia was still largely wilderness, British rulers formed large counties and re-formed them as population shifted. In 1728, William Gooch, then governor of Virginia, established a county west of Richmond that he – not surprisingly – named Goochland. By 1744, as population grew and moved westward, Goochland was subdivided to form several smaller counties, among them Albemarle. At its inception, Albemarle included land to the south with the James River running midway through Albemarle (see inset.) Scottsville, centrally located in “Big Albemarle” and strategically situated on the James, was named county seat.

In 1761, population demands necessitated further division of Albemarle with new counties carved out of southern Albemarle and land added to the north. As a result, the James River now formed Albemarle's southern border and the Rivanna River became the main river running through Albemarle. Soon after, the county seat was moved north to the center of the reconfigured county, where a newly chartered town was laid out on 50 acres and named Charlottesville. While Albemarle population grew steadily, Charlottesville remained relatively small with only 300 residents in 1816. However, that would soon change as Mr. Jefferson staked out his educational legacy – the University of Virginia– a move that would lend a much needed boost to the town.

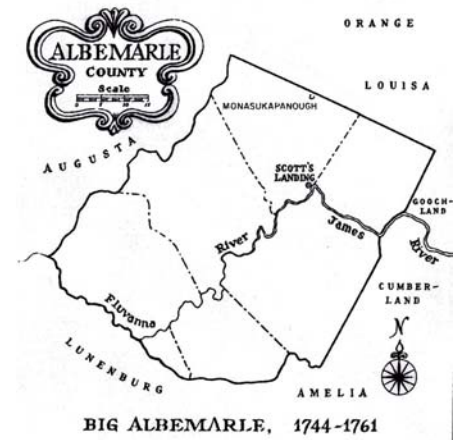
## Early Water Sources

For much of the 19<sup>th</sup> century, citizens in Charlottesville carried their household water from scattered springs and wells. It is said that the town pump was located in the middle of Main Street at the top of Vinegar Hill, near the present day statue of Lewis and Clark.

The first attempt at a consolidated water system was made in the 1850s when the University of Virginia installed a small dam at the foot of Lewis Mountain from which a 2 ½" pipe brought water to an open lake on the Grounds and then by steam pump to a tank in the top of the Rotunda, thence by gravity to the “academical village.” This water was used for all purposes, except drinking.

Charlottesville didn't attempt a municipal waterworks until 1885, when the city (now with nearly 6,000 residents) joined with the University to create a reservoir three miles west of town in the Ragged Mountains. The dam, made of dry-stacked stone that had been mined on site, today serves as the land bridge between the upper and lower reservoir trails at the Ragged Mountain Natural Area. The cost of the project was \$90,000. For a few years Charlottesville enjoyed the luxury of an abundance of water (so much so that in October 1888, the City removed the charge of water for bath tubs.)

By the turn of the century the city faced an impending water shortage, and in 1908 councilors approved the construction of Mayo's Rock Dam, located 2,400 feet downstream from the original Ragged Mountain dam. The new dam, which increased the water capacity to 615 million gallons, cost \$193,000.



In 1744, Albemarle included the counties of Nelson, Buckingham, Fluvanna, Amherst, Appomattox, and parts of Campbell—with the James River running midway through the county. Had Albemarle maintained its original boundaries, the current public water system might have looked very different.

## Problems Arise

Relief would be brief. Due to its small watershed and low stream flow, the new reservoir never fully filled and by 1920, algae growth and an unpalatable taste in the water prompted more action. The city commissioned two engineering studies to investigate additional water sources. Buck Mountain Creek, Ivy Creek, Maury's and Moore's Creek were all deemed to be of insufficient quantity and some of poor quality. Mechums's River was rejected for excessive turbidity and pumping costs. The Rivanna River had the advantage of a large watershed and was close to town, but was far too "muddy" and would need to be pumped "uphill" to the city. The Moorman's River proved unquestionably superior to all others due to its high elevation, heavily wooded and sparsely populated watershed and water that was clear and of high quality.

In 1923, at a cost of \$513,000, a small intake dam was built at the foot of the Blue Ridge Mountains on the Moorman's River and an 18" cast iron pipe was laid 13 ½ miles to a new filtration plant on Observatory Hill. In addition, the pipe allowed water to be diverted into the lower Ragged Mountain Reservoir to augment its water levels. This pipe still carries up to 4 million gallons of water a day to RMR and the treatment plant.

## More Reservoirs are Built

As population grew, so too the need for more water. In 1947, a second dam was installed upstream from the intake on the Moorman's River creating the Sugar Hollow Reservoir (SHR.) This project, which cost \$595,000, increased water storage capacity by 360 million gallons.

In the 1960s, despite the warnings about possible problems, officials installed a dam on the Rivanna River, creating the South Fork Rivanna Reservoir (SFRR.) This reservoir has a very large watershed, which contributes to its value as well as to its problems. Built in 1966, SFRR began experiencing eutrophication as early as 1970, with much of the sedimentation and pollution coming from its many tributaries. In 1980, rezoning for reduced development in the immediate watershed helped to revive the reservoir (and fortuitously, contributed to the effort to preserve more land for the Ivy Creek Natural Area.) However, as anticipated, the SFRR continues to lose 15 million gallons of capacity (1%) each year to sedimentation. Today, the SFRR is the main source of drinking water for the urban service area. Its water is treated at a separate facility located near the dam. In addition, an intake on the North Fork of the Rivanna River provides 2 million gallons per day to the northern reaches of the county urban area and is treated at its own water treatment plant.

## Future Population Growth Demands More

Once again, officials are warning of a future water shortage. While the city's water usage has actually decreased over the last two decades, projected growth in Albemarle County has prompted a call to create more capacity—another 10 million gallons a day—nearly doubling current capacity. Coming full circle, Ragged Mountain – our area's first reservoir – has been selected to meet those needs. The construction of the new dam will inundate 142 acres, flooding most of the current trail system, and much of the visible history such as the homesite on the Peninsula Trail, the 1885 dam (land bridge) and the stone control tower.

The Ivy Creek Foundation is in discussions now with local authorities about the possibility of preserving the area's environmental and recreational benefit to our community.

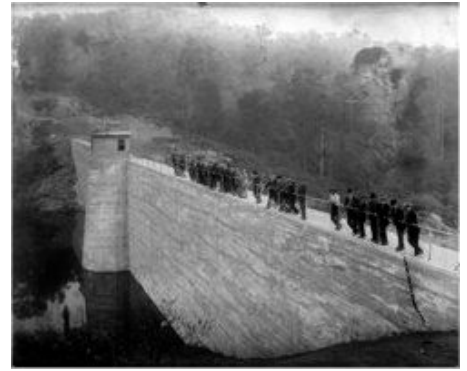
**Sources:** For more information on the past, present and future water supply:

Rivanna Water and Sewer Authority website: <http://www.rivanna.org/community.htm> see [Community Water Supply Project Permit Support Document](#): May 2006 and other documents

[South Fork Rivanna Reservoir and Watershed: Reflecting on 36 years, Anticipating 50 years](#) by Stephen Bowler 2002

[Engineering In the Development of a Municipal Water Supply](#) (author unknown - 1937) from ICF and RWSA files

[Albemarle: Jefferson's County, 1727-1976](#) by John Hammond Moore for Albemarle County Historical Society 1976



Officials had high hopes for the Mayo's Rock Dam at Ragged Mountain in 1908.

Holsinger photo ca. 1908 (UVA)