

Understanding Your Water & Sewer System

Town of Kilmarnock, Virginia



Department of Public Utilities

First in a series

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What makes up your water system?

The Kilmarnock Public water system was created in 1916 by T. Sargeant Brent, R.H. Chilton, Sr. and Dr. W.H. Lowe. It was called the Kilmarnock Water Company and provided a safe water supply for the community.

When Kilmarnock was incorporated in 1930, the water system was turned over to the Town government to own and operate. Since that time a variety of changes have occurred.

The water system itself has three major components: wells, storage towers and piping.

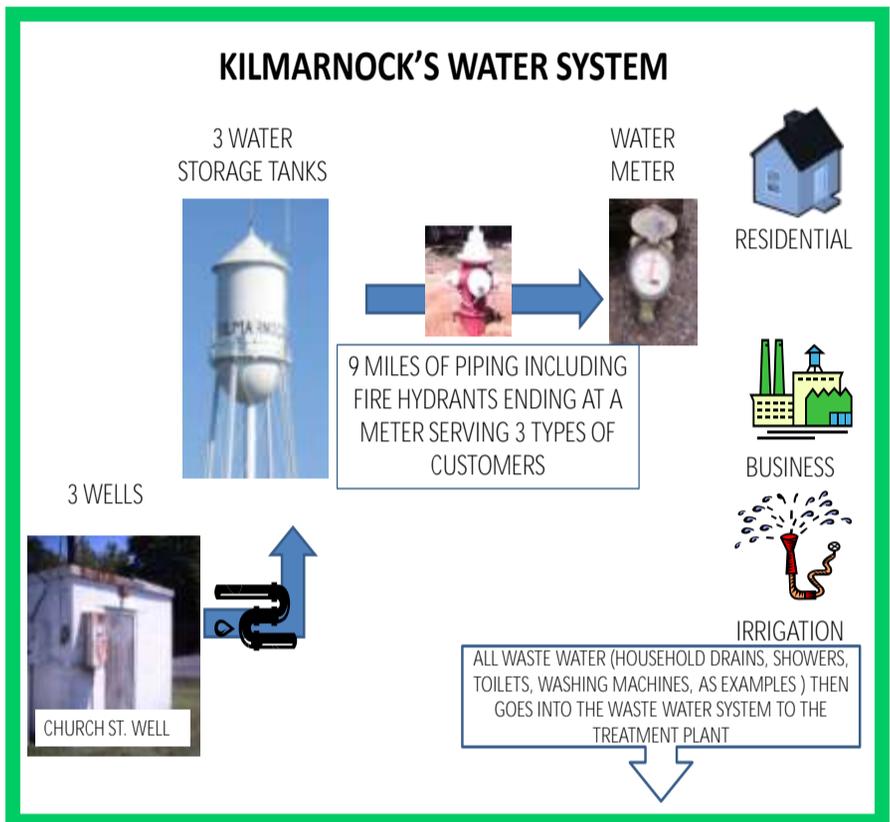
Three wells pump water from aquifers deep underground. The wells are located on Radio Road, Church Street and adjacent to Rappahannock General Hospital.

From the wells, water is pumped to the three large towers used for storing the water until it is needed. Each tower has a nearby production well that fills the tower. Each tower can receive water from any of the wells. The original tower, built in 1949, is off of E. Church Street, the "hospital" tower built in 1978 and the newest tower, off Radio Rd., in 1996.

Gravity moves the water from storage and directs it through piping, under pressure, to residential homes, businesses and irrigation systems.

A meter is installed prior to the water entering a home or business which measures the amount of water that passes through the meter. This amount is called "usage" and determines the amount of the bi-monthly water\sewer bill.

KILMARNOCK'S WATER SYSTEM



Capabilities\Capacities:

- # OF FIRE HYDRANTS: 80
- # OF MAN HOLES FOR ACCESS: 311
- CHURCH ST. WELL DEPTH: 800 FT.
- HOSPITAL WELL DEPTH: 800 FT.
- RADIO RD. WELL DEPTH: 800 FT.
- CHURCH ST. STORAGE TOWER: 60,000 GALLONS
- "HOSPITAL" STORAGE TOWER: 250,000 GALLONS
- RADIO RD. STORAGE TOWER: 250,000 GALLONS

Facts of Interest:

- MILES OF PIPING: 9
- NUMBERS OF WELLS: 3
- SOURCE OF WATER: DEEP AQUIFER
- AVERAGE DAILY USAGE (IN GALLONS): 200,000
- YEAR THE SYSTEM WAS FIRST INSTALLED: 1916

Piping-the "highway" of water

Various types of pipes deliver water throughout Kilmarnock. Think of the pipes acting like a highway system to move water just like a highway moves cars. Where feasible, the piping system is designed in "loops" to ensure water is delivered throughout the system.

The "mains" or largest pipes are like interstates taking large volumes of water from the towers. These are 12" and 10" diameter pipes, made of polyvinyl chloride or PVC. Next comes "State Routes" or the 8 inch and 6 inch pipes that deliver water down a street.

Finally comes the small piping from the line in the street to the meter located in a meter box. This is where the public water system ends. The property owner's equipment begins after the meter and delivers water into the home or business.



What happens to the water that goes down the drain?

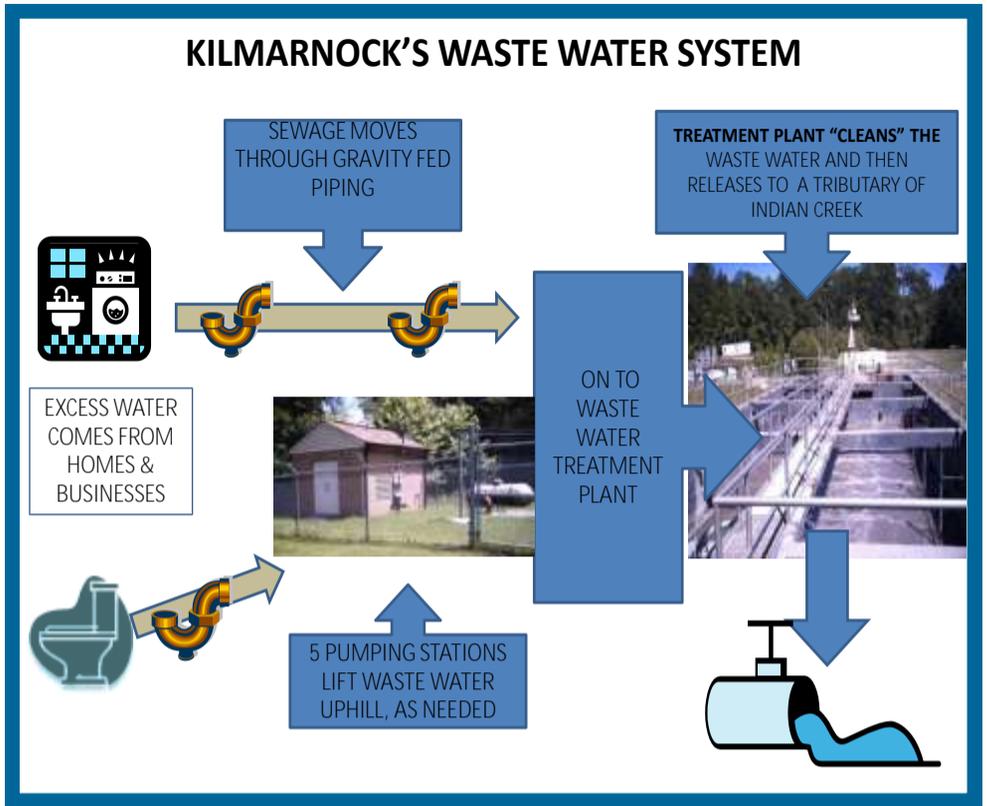
We call that “waste water”.

Whether the water comes from your sinks, showers, or toilets, it all goes into pipes and eventually to the treatment plant to be processed.

Effluent, or sewage, is transported primarily through gravity fed piping, meaning it flows downhill unaided to the treatment plant. Additionally, there are collection points, each served by a lift station, where sewage can be pumped and then gravity fed again to the plant.

At the treatment plant, the waste water is “cleaned” by removing the harmful bacteria, letting the solid matter settle out and the chemical balance is restored to allow the water to be released into a tributary of Indian Creek.

This process is permitted by the VA Dept. of Health and the VA Dept. of Environmental Quality.



Major System Installations:

- 1949: CHURCH ST. WELL & CHURCH ST. STORAGE TOWER (RENOVATED 1996)
- 1978: HOSPITAL WELL & HOSPITAL STORAGE TOWER (RENOVATED 1996); SEWAGE LIFT STATION-WIGGINS RD; WWTP (EXPANSION 1996)
- 1980: SEWAGE LIFT STATION-HARVEY LANE; SEWAGE LIFT STATION-SCHOOL ST.
- 1996: RADIO RD. STORAGE TOWER
- 1997: RADIO RD. WELL
- 1998: SEWAGE LIFT STATION-NORRIS POND
- 2002: SEWAGE LIFT STATION-HILLS QUARTERS

Investments in the water and waste water systems:

As a public utility, these two systems work in tandem and must be kept in compliance with State and Federal laws. There have been a number of modifications and replacements through the years.

However, because of deferred maintenance and the increasing age of these two systems, Kilmarnock is facing an ongoing need to repair, replace and upgrade our equipment to meet State and Federal standards. This will be needed to maintain our compliance with governmental requirements.

In addition, the system must anticipate the infrastructure requirements to support the growth of and service to our customer base.

Clear water leaving the treatment plant



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