

VIII. Utilities and Communications

Public Utilities and Community Services

Ensuring that community facilities and public services are phased with demand is a major component of any Comprehensive Planning process. Development intensity and location are directly linked to the availability of services. This situation is especially evident in Christiansburg's northwest annexation area where sewer extensions have spawned new development. New growth, however, increases the demand on existing services and facilities. It has the potential to create deficiencies in systems that may already be functioning at their limits. For Christiansburg, the challenge will be to provide the needed infrastructure to meet growth demands while assuring that other public services are maintained at their present, high quality levels.

Public Utilities

Water Service and Treatment

Water is supplied to the citizens of Christiansburg by the Blacksburg-Christiansburg-VPI Water Authority and is drawn from the New River. The Water Authority's filtration plant is west of Christiansburg on Pepper's Ferry Road (Route 114). The Water Authority, which was formed in 1954, has a capacity of 12.5 million gallons per day (MGD) - well above the current demand of approximately 7 million gallons per day.

The Town operates and maintains its distribution system, which is connected in two places to the Water Authority's main transmission lines. Many of the Town's distribution lines were designed and constructed by the Water Division of the Town's Department of Public Works. Private developers, however, have become increasingly involved in recent expansions to serve new subdivisions. Fire hydrants are located in all water service areas. Although the Town does not require its citizens to connect to its water distribution system, very few residents for whom service is available rely on private wells or springs.

Christiansburg's six water tanks are capable of storing more than 3 million gallons of water for use. There are four water pump stations within the Town. The Town operates three and the Water Authority owns one.

According to the Town of Christiansburg 2003 Annual Report, the Town of Christiansburg had 122.5 miles of water line serving citizens and businesses both within and outside its corporate limits, totaling 8,910 water services (8,510 in Town and 400 out of Town). Christiansburg also had a Town system water consumption of 459,853,840 gallons and a Water Authority Main consumption of 108,968,860 gallons, for a total of 568,822,700 gallons consumed. In 1999, the Town of Christiansburg received the Crystal Goblet

Award for having the finest tasting water in the state at the First Annual Water Taste Test at the Virginia Municipal League Annual Conference.

Sewer Service and Treatment

Due to the prevalence of soils within the Town of Christiansburg that are not suitable for septic systems, the availability of public sewer service has been an important determinant of the Town's growth patterns. Domestic and industrial wastewater collection and treatment is available throughout most of the Town and to a limited number of users outside the corporate limits. The Town of Christiansburg constructed its first wastewater treatment plant in 1933. Since that time, two more treatment plants have been constructed, the first in 1962 and the present one in 1980. In 1999, the Town underwent a major expansion of its wastewater treatment plant. The sanitary sewer system also includes sixteen pump stations (with an additional station under construction and two more planned) and 76.01 miles of gravity and force main lines.

The Christiansburg Wastewater Treatment Plant currently has a capacity of 4.0 million gallons per day (MGD). With a present average daily flow (fiscal year 2001-2002) of 2.06 MGD, the plant's excess reserve capacity is 1.94 MGD. The reserve capacity is sufficient for an approximate increase of 18,000 persons or an equivalent flow from non-residential users. This reserve will insure ample treatment capacity for the anticipated needs of the Town within the reasonably near future. When needed, the plant can be expanded to 8.0 MGD.

Pursuant to an April 12, 1977 agreement between the Town and the Montgomery County Public Service Authority, Christiansburg has agreed to accept and treat wastewater collected from certain areas adjacent to the Town. The Authority may deliver wastewater for treatment in an amount up to 12% of the design capacity of the plant and interceptor lines, if sufficient capacity exists in the Town facilities.

Due to the topography of Christiansburg, many drainage areas within the present corporate limits are not tributary to the wastewater treatment plant. Each of these areas is served by a sewage pump station, which conveys wastewater to the transport system leading to the wastewater treatment plant. There are 16 pumping stations with three future pump stations planned. Private development may necessitate the construction of additional pump stations to Town standards on a case-by-case basis.

It is not mandatory for Town residents with existing septic systems to connect to available sewer service lines unless septic system failure occurs. All new development, though, is required to connect to the Town's sewer lines. Upgrades of the sewer system are ongoing, primarily to correct minor infiltration and inflow problems.

According to the Town of Christiansburg 2003 Annual Report, the Town of Christiansburg had 126.88 miles of sewer line serving citizens and businesses both within and outside its corporate limits, and a total of 7,621 sewer services in Town and 35 outside Town limits.

Maintenance and Construction

Christiansburg is one of the first localities in the State to develop a Local Standards and Review Program for Water and Sewer Line Extensions. The program was approved by the Virginia Department of Health and the State Water Control Board in 1983 and enables the Town to design and construct its own sewer line extensions through its Public Works Department.

Christiansburg continually monitors for breaks, leaks, or other deficiencies in its sewer system. An infiltration and inflow analysis conducted in 1984 resulted in a 20.5% reduction of flow into the treatment plant that year. The analysis attributed the problem to leaking manhole lids and service connections as well as to roof drains and storm sewers illegally connected to the Town's system. Since 1990, monitoring efforts have been facilitated by the use of robotic sewer cameras.

Expansion of the waste collection system is currently in progress along and north of Route 460/11 east of the I-81 interchange. Approximately 7 miles of collection lines are planned for this area and is scheduled for completion by 2005. Due to the topography east of the Town's existing corporate limits, future expansions of the sewer system in this direction would be very expensive.

Sludge Disposal and Industrial Waste

As permitted by National Pollution Discharge Elimination System (NPDES) regulations, all liquid sludge generated by the Sewage Treatment Plant is utilized through land application. The Town's Sewer Use Ordinance regulates industrial sewer discharges into the public system.

Solid Waste Disposal

The Town of Christiansburg owns a 40-acre sanitary landfill located west of the downtown area on Wade's Lane. Due to inadequate capacity, the landfill was closed to use in May 1990. In 1994, the Montgomery Regional Solid Waste Authority was formed by the Towns of Blacksburg and Christiansburg, Montgomery County, and the Virginia Polytechnic Institute and State University (Virginia Tech). There is a five member Board for the Authority with each of the four member's governing bodies appointing a member and the four localities governing bodies jointly appointing an at large representative. Participation in the Authority is funded through tipping fees and levies on particular services (which are at the discretion of the members).

The Town provides residential curbside and special leaf and debris collections to residents. The Town of Christiansburg also has a Spring Clean-up and a Fall Clean-up, which last approximately two weeks. During the clean-up weeks, the Town will accept residential brush and trimmings as well as larger items such as appliances.

Recycling Program

In accordance with State mandate, a recycling program has been in operation in Christiansburg since 1992. The program is a voluntary drop-off program. Three Town-wide locations accept newspapers, metal, plastic, and glass. The program currently meets all state mandates for recycling and the Town has no immediate plans for mandatory recycling or the provision of curbside recycling services. Figures for Fiscal Year 2001-2002 indicate that Christiansburg was meeting the state's required recycling rate.

Other Utilities

American Electric Power (AEP) provides electricity to the Town of Christiansburg. AEP's customers enjoy the benefit of lower rates due to the close proximity of the company to Virginia's coal suppliers in the southwest. Natural gas is available in Christiansburg through Atmos Energy.

Landline telephone service is available to the Town's citizens from Verizon Telephone and other suppliers utilizing both underground and fiber optic lines. Fiber optic service is now available throughout the entire Town.

Cellular phone service is available by numerous companies in the area. The Town of Christiansburg allows communication towers and monopoles in designated zoning districts with appropriate permits and approvals. The Town of Christiansburg and neighboring jurisdictions have agreed to make each other aware of potential communications towers and monopoles as part of a coordinated effort to ensure appropriate location. This "Regional Approach to Telecommunications Towers" was developed in 2001 by staff members from the Towns of Christiansburg and Blacksburg, Montgomery and Pulaski County, and the City of Radford.

The Regional Approach encourages collocation to reduce visual impacts of communication towers and monopoles. Through collocation, the siting of new antennae, dishes, etc. is supported on existing structures such as existing communications structures, tall buildings, water tanks, electric transmission towers, signs, and similar structures. This allows for the "highest and best" use of existing structures and sites that could eliminate the need for construction of new communications structures in inappropriate areas.

A uniform approach to the siting of new communications structures involves consideration of surrounding jurisdictions as well as the locality in which the structure is to be located. New communications structures should be built in locations that will provide the least negative impact to the citizens of each jurisdiction. The use of monopoles and "stealth technology" is encouraged for new construction. Preference is given to locations which are in Industrial or Agricultural Districts, as well as non-ridge, vista-preserving locations. Currently cellular antennas are located on two Town water tower tank properties.