UTILITIES
Providing Safe, Reliable Public & Private Utilities to Your Front Door

GOAL
Provide all properties within the Town’s service area with adequate and reliable public and private utility infrastructure and services, including water, wastewater, stormwater management, solid waste management, recycling, power, and telecommunications, to meet demand needs in a customer service-oriented manner that promotes economic opportunities and a high quality of life.

Sustainability Goal
Provide the above mentioned utility infrastructure and services, plus access rights, through safe, environmentally sensitive, and cost-efficient methods. Partner with state and local governments, utility franchises, and other public and private entities to incorporate best management practices of new technologies.

Citizen Involvement
There are multiple Council-appointed committees that address utility issues, which involve citizen participation: Blacksburg-Christsiansburg-VPI-Water Authority, Blacksburg-VPI Sanitation Authority, the Montgomery Regional Solid Waste Authority and any related task forces, such as the Stormwater Utility Stakeholders Advisory Group. Citizens are also encouraged to comment on proposed capital improvement projects and rate hearings. Citizens are encouraged to participate in the Blacksburg Citizens Institute to learn more about Town operations in general.

OVERVIEW
Public utilities available within the Town include water, wastewater, solid waste collection, electrical, natural gas, and telecommunications services (telephone, cable television, and internet access). The Town provides both infrastructure and services for the water, wastewater and solid waste collection in conjunction with regional service authorities. Private companies under franchise with the Town provide infrastructure and services for electrical, natural gas, technology and telecommunications services. This chapter is divided into Town Provided Services and Privately Provided Services to accurately reflect how public utilities are provided within the Town of Blacksburg.
TOWN PROVIDED UTILITY SERVICES

Public Water System
The Town of Blacksburg purchases treated water from the Blacksburg-Christiansburg-VPI Water Authority. The Water Authority’s plant is located along State Route 114 in Montgomery County. There is inter-jurisdictional cooperation with the Town of Christiansburg and Virginia Tech on the water treatment and distribution system through Water Authority membership. Discussions are ongoing between current Water Authority members and Montgomery County officials about the County joining the Water Authority.

The water source for the water authority is the New River. The capacity of the plant is approximately 12 million gallons per day (MGD). Current daily use by all members is approximately 6.5 million gallons per day, of which 3 million gallons per day is used by Blacksburg customers and 1.2 million gallons per day by Virginia Tech. Combining current water usage rates with new water-efficient appliances installed during renovations and new water-efficient building construction standards leaves significant treatment plant capacity available for projected water demand. The water treatment and distribution system is in compliance with all state and federal regulations, as documented in annual water quality reports.

Water reuse is becoming an important component of water resources management. Water reuse can include collection and use of stormwater, reuse of gray water in homes and businesses, and reuse of treated wastewater. Water can be reused for irrigation, vehicle washing, toilet flushing, and industrial purposes. The Town supports water reuse, particularly as a regulatory framework is developed to protect human health and the environment and as public acceptance of this practice grows. Water reuse is consistent with the Town’s environmental and sustainability goals.

The Town's water service area includes areas outside the corporate limits. The Town and the Montgomery County Public Service Authority (PSA) have water service area agreements in place that establish the boundaries of the Town's service area outside the corporate limits. Any new areas outside the corporate limits that desire water service must request a boundary line adjustment and become a part of the Town prior to water service being provided.

The Town of Blacksburg and the Town of Christiansburg adopted a Regional Water Supply Plan in 2011 as mandated by the State. The plan covers the two Towns, plus Virginia Tech since the campus receives its water supply via the Town of Blacksburg’s water system, which is detailed below. The New River Valley Planning District Commission has compiled a water supply plan for other localities in the area. The plan governing the Towns of Blacksburg and Christiansburg includes existing water resource information, existing water use information, existing resource information, water demand management, drought response and contingency plan, projected water demand, and statement of need based on existing and future water sources and demands. As part of the plan, the Town adopted an Emergency Water Resource Management Ordinance in case of a significant drought or emergency that threatens the Town water supply.
The Town’s water system consists of two separate zones: the “high” elevation zone and the “low” elevation zone. The “high” elevation zone is located along the northern and eastern ridgelines of the Town and serves areas of Town that are at an elevation of 2,190 feet or greater. The “low” elevation system serves the majority of the Town and serves areas that are at an elevation lower than 2,200 feet, including the Virginia Tech campus.

A water storage supply and delivery system equal to 48 hours of use is necessary to enable interim emergency water provisions to be in place. As of 2011, current water storage tanks will provide service for approximately 43 hours in the event of an interruption in supply.

As discussed in the Public Safety & Community Facilities Chapter, the Volunteer Blacksburg Fire Department serves all areas of Town utilizing a combination of fire hydrants and tanker trucks to supply water in emergencies. As waterlines are upgraded or are extended into areas of Town not currently served by public water, fire hydrants are installed as a part of the project.

Town staff is responsible for administration of the Cross Connection Control program that protects the public water supply from backflow conditions caused by backsiphonage and backpressure. The program requires all water connections to have backflow protection and testing, based on the degree of hazard the water connection poses to the water supply. The Town will continue to use technology and mailings to educate the public on backflow prevention.
**Public Wastewater System**

The Blacksburg-VPI Sanitation Authority treats the Town of Blacksburg’s and Virginia Tech’s wastewater. The Sanitation Authority Plant is located where Stroubles Creek crosses Prices Fork Road southwest of Town. The current design capacity of the Sanitation Authority Plant is 9 million gallons per day (MGD), which provides adequate treatment capacity for growth projections. The plant has the ability to expand to 12-MGD treatment capacity if necessary for the future. Current flows from Blacksburg, Virginia Tech, and several areas in Montgomery County total 5.5 MGD at the plant.

The Sanitation Authority Plant uses best management practices to prevent further impairment of local creeks and is part of the Virginia Department of Environmental Quality’s (DEQ) Environmental Management System (EMS) plan. Additionally, through DEQ’s “Virginia Environmental Excellence Program,” the Sanitation Authority Plant has an Extraordinary Environmental Enterprise (E4) certification. While not mandated, the plant also has a nitrification/denitrification process to help improve the quality of the wastewater discharge. This process provides a benefit to Stroubles Creek, the receiving stream, by helping to preserve its existing stream biology. Sludge removed during the treatment process is incinerated. The Town, in partnership with the Authority, administers the industrial pretreatment program, which is effective in protecting the integrity of the wastewater collection system and the treatment plant process.

The Town of Blacksburg owns, operates, and maintains the public wastewater collection system within the Town limits. As of 2011, this infrastructure includes more than 150 miles of gravity collection lines ranging in diameter from 8 to 24 inches, 12 Septic Tank Effluent Pumping systems (STEP), 148 Septic Tank Effluent Gravity systems (STEG), and 25 wastewater pumping stations. Virginia Tech owns and operates the wastewater lines on the Virginia Tech Campus. Wastewater from Blacksburg and Virginia Tech flows into larger interceptor lines that are jointly owned and operated by the Blacksburg-VPI Sanitation Authority.

Public wastewater service is unavailable to the majority of the land area west of the Route 460 Bypass, including most of Toms Creek Basin. The Town supports an environmentally sensitive public wastewater service for these areas so that construction does not increase rates to the rest of Town. In these areas, the STEP/STEG systems are used and connect downstream to public sewage. This alternative wastewater system is proposed to serve future population growth in designated areas approved by Town Council.

Blacksburg has obtained new wastewater service areas both within Town and out of Town through negotiations with the County. In addition, service is provided to existing areas in Town through capital improvement and cost-share projects.

The Town is undertaking several approaches to evaluate more effective ways to provide new services while operating and maintaining the wastewater infrastructure as it ages and expands. This includes implementing Environmental Protection Agency (EPA) Utility Infrastructure Asset Management Principles. To meet these principles, a town-wide data logging program and hydraulic model has been developed to evaluate the effect of rainfall-derived Infiltration and Inflow (I/I) on the system and to develop a strategy to increase capacity within the existing infrastructure.
Additionally, the Town has proactively embraced the EPA’s Capacity, Management, Operations, and Maintenance (CMOM) Program for municipal wastewater systems. The CMOM program seeks to evaluate and correct excessive I/I in the wastewater collection system through enhanced management practices such as root-control and rehabilitating aged or damaged pipes. Town staff works with homeowners to develop alternative discharge points for roof drains and sump pumps and to remove other inappropriate connections that impact the system’s limited capacity.
Stormwater Management System

Just as public water and wastewater is planned for and provided, stormwater must be thought of as a utility to be managed comprehensively to meet state and federal mandates that protect the environment locally and regionally while promoting the quality of life in Blacksburg. Please refer to the Environmental Chapter for additional information on the Town’s watersheds, maps, floodplains and MS4 Program Plan.

To begin addressing this concept, in the spring of 2008, Town council created the Stormwater Management Task Force to study, define, and recommend the stormwater management programs and practices to resolve and avoid problems, to improve the water quality in Town streams and waterways, and to ensure the health, safety, and welfare of current and future citizens of Blacksburg.

After addressing sediment and erosion control efforts, the Task Force’s final recommendations were made to Council in May 2010. The Task Force recognized the differences and similarities of each watershed and some shared goals and opportunities, plus the need and opportunity for:

- Public outreach and education;
- Modeling of the stormwater infrastructure to facilitate future repair, improvement and expansion;
- Compliance with the Town’s required Municipal Separate Stormwater Sewer System (MS4) Permit;
- Compliance with required Total Maximum Daily Load (TMDL) on Stroubles Creek and Cedar Run Creek;
- Implementation of current and future regulations;
- Regional Best Management Practices (BMPs) to facilitate future economic growth in our heavily commercial areas; and
- Development of “stormwater parks” and regional recreational amenities such as greenways that also manage stormwater volume and quality.

The Stormwater Management Task Force also focused on the financial requirements for the implementation of these stormwater management requirements and opportunities. The current level of funding would support a very minimal level of basic compliance only. Further funding research analysis led to a recommendation to adopt a Stormwater Utility Fee. Town Council appointed a Stormwater Stakeholders Advisory Group in August 2012 to continue work on the utility fee as well as to engage and educate the public, further develop the Stormwater Program, recommend spending priorities, and advise Council. The stormwater program would need to continually manage stormwater of the Town in order to improve the health of the waterways and their ecosystems and to provide for additional community amenities.

In January 2014, the Stakeholders Advisory Group completed its work, recommending to Town Council to adopt a Stormwater Utility, with a stormwater fee based upon the amount of impervious surface controlled by landowners. The Stakeholders Group analyzed GIS to determine that the median impervious area for single family development in Blacksburg was 3300 square feet. This value is recommended to be the unit of billing for the Stormwater Utility, where single residences would all pay a nominal fee for one billing unit. Commercial and non-
single family development would pay a charge based upon multiple billing units. The group recommended a delayed January 2015 implementation start date that has been approved by Town Council.
Solid Waste Management & Recycling
Blacksburg is progressive in waste reduction efforts and is environmentally conscious. As part of the Town’s Environmental Management Program and its commitment to a sustainable environment, the Town itself strives to reduce waste and increase recycling. Please refer to the A Sustainable Community Chapter for more information on the Town’s Environmental Management Program.

The Town is a member of the Montgomery Regional Solid Waste Authority (MRSWA), which was created in December 1994. Member jurisdictions are Blacksburg, Christiansburg, Montgomery County, and Virginia Tech. Through DEQ’s Virginia Environmental Excellence Program, MRSWA has an E3 Certification as an Exemplary Environmental Enterprise (E3) community.

Funding for the MRSWA is provided solely through tipping fees and recycling revenues. The MRSWA is a member of a regional landfill and has constructed a transfer station at the former landfill site. Solid waste is disposed of at the New River Resource Authority in Pulaski County. MRSWA has constructed a regional recycling facility that has the capability to accept and process materials from the New River Valley and beyond. A higher quality of product, price, and market reliability can be obtained with higher quantities of materials to recycle.

Efforts to educate the general public about waste reduction and recycling to achieve a higher level of environmental awareness and environmental protection are emphasized in the Town and regionally. Source reduction is the first step, followed by reuse, and then recycling. As part of the Authority, the four jurisdictions have combined processing and marketing of recycling products to strengthen their representation in the recycling industry and enable larger volumes of materials to be batched. This economy of scale creates better marketability and a more regional coordination of programs, which improves cost effectiveness.

The Town currently provides curbside recycling for residential customers. Apartment complexes are required by ordinance to provide recycling opportunities similar to those provided curbside and contract privately for these services. In 2011, the Town revised regulations to proactively promote recycling in residential apartment complexes.

The Town provides temporary recycling at major street festivals such as Steppin’ Out and is seeking to provide recycling on a daily basis to residents and visitors Downtown. However, providing solid waste collection and recycling for Downtown, especially to businesses, is challenging. The majority of merchants contract privately for refuse and recycling service, and there is no requirement for recycling. Cleaning up alleyways while providing for safe and effective refuse and recycling solutions is a top priority for improving the aesthetic appearance of the area. In conjunction with community partners such as Sustainable Blacksburg and Downtown Blacksburg, Inc., the Town is developing innovative recycling programs for Downtown businesses. A variety of potential solutions are being considered that include consolidating recycling sites managed by the Town or public/private partnerships.
The Town has partnered with the YMCA at Virginia Tech to create a residential electronics re-use and recycling program at the YMCA Thrift Store. The program helps ensure that end-of-life electronics are properly recycled and/or disposed of in the landfill. Businesses must dispose of their electronics in accordance with DEQ regulations.

The Town has an adopted policy to formalize a longstanding internal recycling program within all Town government operated-facilities to reuse or recycle 50% of the solid waste stream. Additionally, Public Works is constructing an inert debris fill site at its facility, which will be used for long-term hauling of construction debris—concrete, pavement and dirt that cannot be recycled. This material would otherwise be hauled to MRSWA and would come at a significant cost to the Town in tipping fees. Additionally, as part of the Town’s Emergency Management Plan, the Town’s goal is to certify this site with DEQ for hauling debris after events. A critical first response after any event is to clear debris that may endanger public health and safety from public rights-of-way.
PRIVATELY PROVIDED UTILITY SERVICES

All utilities are placed in the street, in rights-of-way, or in public easements held by the Town in trust for the use of the public. These are finite assets that interest multiple users. The value of rights-of-way as a public asset has increased as more utility and communications providers have become interested in serving Blacksburg residents. The Town has an obligation to charge fair compensation for the use and restoration of this asset. The Town also has the duty to manage its rights-of-way and easement assets wisely for the public good. This duty includes, but is not limited to, adopting reasonable regulations for utility separation, the timing and coordination of work in the right-of-way, safety rules and regulations, and preservation of the streets in a condition to best serve the traveling public.

Electrical Power & Natural Gas Service

American Electric Power (AEP) Company and Virginia Tech Electric Service (VTES) provide electric service to Blacksburg. Generally, VTES serves the central area of Town, including the Virginia Tech campus, the Corporate Research Center (CRC), the Gables Shopping Center, and several neighborhoods as detailed on the following map. The rest of Town is served by AEP.

Atmos Energy currently has a franchise agreement to provide natural gas to customers in most areas of Blacksburg, which is detailed on the following map. Virginia Tech has its own heating system, based on a coal power plant for heating campus buildings.

The Town government and residents both desire to maintain low electric and natural gas rates. There is community interest in diversifying energy sources to reduce the need for traditional fossil fuel-generated centralized electricity. The Town is currently researching decentralized solar and wind generated power regulations to govern future uses at residences, businesses and Town facilities. Until then, electrical and natural gas distribution and service lines are constructed underground in new developments. The Town supports the replacement of all overhead utility lines, including power lines, with underground utility lines.

VTES or AEP owns the streetlights, which are leased to the Town. Streetlights are required to be installed as developments are constructed on collector and arterial streets. Additional streetlights can be requested to be installed at a later date to address safety concerns. These streetlights may be installed as funds are available and with adherence to the Town’s Streetlight policy that balances the needs of crime prevention, maintaining the character of the neighborhood and the Town’s Dark Sky policy. The Town must continually review the cumulative impact of all existing streetlights, making corrections as needed to increase safety, yet function within the Town’s Dark Sky policy.
Telecommunications & Technology
Just as the Town’s transportation and other utility infrastructure networks are carefully designed, maintained and expanded, the Town’s telecommunications and technology infrastructure needs to be designed, expanded and maintained.

Today’s telecommunications infrastructure includes telephones, wireless communications (radio, cellular, satellite television, etc.), the internet, cable TV systems, and network systems (public and private). Issues of security, privacy, right-of-way management, funding, governance, availability, service providers and economic development are of critical importance as the Town plans for new technology initiatives such as broadband (high-speed Internet access) and wireless facilities. Applications for telecommunication continue to evolve, especially in the wireless arena. It is important to understand that all wireless systems at some point require a wired connection; this is why community conduit and fiber optic systems are critical.

Citizen expectations for government services customized to their individual needs continue to increase, creating demand for more internet services available 24 hours a day, 7 days a week, not just during the traditional business Monday-Friday workweek. In addition, the demand for faster and more available internet access (broadband) for our community has increased staff focus and planning on this issue. Providing equal access and technology support to all Town staff is challenging due to the dispersed government office locations throughout Town. Siting of wireless telecommunication towers for public and private use is another issue the Town must address.

Fitting the dynamic nature of technology into the traditional infrastructure planning process is a challenge. Nonetheless, technology needs to be on the priority check list for review of development application as investments in broadband infrastructure, including conduit, are no more a luxury than planning for roads, water, stormwater, electrical, and sewer systems.

This holistic management approach to telecommunication and technology infrastructure planning is just one example of the Town’s innovative achievements that complements the Town’s economic development and environmental sustainability goals. Another is the Town’s participation in the 2015 Task Force that seeks to address the best combination of public and private partnerships for providing broadband infrastructure and service. Please refer to the Jobs & Housing Chapter for additional information.

Town Telecommunication System
Expansion opportunities of the Town’s broadband infrastructure network can occur through public, public/private or private development projects. The Town government views any project as a partnership opportunity. In the more urban areas of Town, site design for new development and redevelopment present unique opportunities and challenges to expand the Town’s broadband network.

The Telecommunication Corridor Map that follows on the next page illustrates existing and future fiber and conduit locations within the Town of Blacksburg. The Telecommunications Corridor Priority Construction Chart, located in the Blacksburg Administrative Manual, details key connections needed to complete the fiber infrastructure network within the Town.
Any proposed development within the Town should be reviewed and evaluated for conformance, as well as for possible network expansion opportunities as illustrated in the Telecommunications Corridor Map and detailed in the Telecommunications Corridor Priority Construction Chart.
**Wireless Facilities**

The increased use of wireless technology requires the construction of many new wireless facilities throughout the Town and in adjacent areas in Montgomery County. Telecommunications towers are difficult to locate, often creating conflicts between citizens and wireless providers; however, the services and technology access provided via the wireless facilities are important to the future of the Town and are discussed further in the *Jobs & Housing Chapter*, with siting location factors detailed below.

To help mitigate the impact of wireless facilities, the Town encourages companies to develop new and innovative ways to provide these wireless services by constructing low-impact facilities. These facilities should always seek out every opportunity to co-locate on existing structures. These locations may be public structures such as water tanks, light or power poles, or private buildings and structures. These facilities should be inconspicuous in nature, so that citizens are not able to reasonably differentiate between an existing structure and the facilities integrated into them. Other options for placement include within flagpoles and church steeples or fake trees.

Some wireless facilities are utilized solely for public use, promoting the health, welfare, and safety of the general public. If a wireless facility is proposed for public use, due consideration should be given to this factor that is balanced with the Town’s desire for construction of low-impact facilities. Every effort should be made to first co-locate public facilities on existing public or private facilities.

In conjunction with Montgomery County and other New River Valley localities, a regional approach to telecommunication and broadcasting facilities has been developed. This regional approach was initiated by Montgomery County to help local governments address the increasing demand for wireless facilities and their associated towers. The key items that are addressed in this regional approach are:

1. Uniform definition and approach to **co-location**;
2. Uniform and consistent **notification** procedures;
3. Uniform approach to **siting** of new towers;
4. Uniform **mapping** of tower sites; and
5. Consistent use of **consultants** to assist jurisdictions in review of requests.

1. **Co-location** refers to the siting of new antennas, microwave dishes, etc. on existing structures. This allows for the best use of existing structures and sites that can eliminate the need for construction of a new tower in an inappropriate area. Potential sites that provide co-location possibilities include, but are not limited to, the following:
   - Existing telecommunication or broadcasting towers
   - Buildings
   - Water tanks and other public facilities
   - Electric transmission towers
   - Signs
   - Parks and ball field lights
   - Industrial parks
2. **Notification** of intent to construct a telecommunication or broadcasting facility refers to the written notification required for public hearings pursuant to § 15.2-2204 of the Virginia Code. In addition, the counties of Montgomery and Pulaski, City of Radford, and Towns of Blacksburg and Christiansburg have agreed to provide written notification to the Planning Commission of each jurisdiction upon receipt of a request for a new communication tower to allow for review and input from neighboring jurisdictions. Comments received from each jurisdiction will be considered by the jurisdiction having authority over the request during the public hearing process.

3. **Siting** of new telecommunication or broadcasting towers in a jurisdiction should be reviewed for its potential effects on surrounding jurisdictions as well as the jurisdiction in which the structure is to be located. Newly constructed towers should be built in locations that will provide the least negative impact to the citizens of each jurisdiction. The Town of Blacksburg encourages the use of "stealth towers" for new sites that require new construction or "new builds." The following locations are listed from most to least preferable when considering the siting of a telecommunication or broadcasting tower:
   1. Property zoned Industrial, Research and Development, or University
   2. Property zoned General Commercial
   3. Property zoned Downtown Commercial
   4. Property zoned primarily for high density residential uses
   5. Property zoned primarily for low density residential uses
   6. Agricultural, Conservation, or Ridgeline areas

4. **Regional Map** - Each jurisdiction has agreed to contribute information necessary to compile a regional map showing all tower/antenna sites and providers using those sites within each jurisdiction. Thus, each jurisdiction will be able to access current information on tower location to better assess the possibilities for alternative sites. This map may also include all government-owned property that may be available for co-location opportunities.

5. **Consultants** may be used from time to time by the jurisdictions to evaluate the possible alternatives and potential impacts of the request on the jurisdiction and the surrounding areas. Wherever possible, the jurisdictions will share resources and collaborate on the request to provide the most beneficial and economically feasible use of a consultant.
UTILITIES
Objectives and Policies

Public Water System
U.1. Provide an adequate and reliable water distribution system throughout the Town that meets Town water specifications and standards that strive to limit water loss. This includes construction of new facilities plus maintenance and upgrades of existing facilities.

U.2. Extend waterlines and upgrade all properties to provide fire protection service, ensuring waterlines are extended and fire hydrants are installed as part of any new development projects that occur in areas of Town not currently served by public water. Ensure that fire hydrants are installed within all existing developments in accordance with Town Code.

U.3. Ensure the public water system provides adequate water storage facilities to serve Town residents.
   - Provide water storage supply equal to 48 hours of service to all areas within the Town and its service area.
   - Construct an additional water storage facility at the south end of Town, with screening equal to or exceeding existing tanks and with accommodations for telecommunication antennas.
   - Acquire and construct water storage facilities on the high system in the areas of North Main Street, Brush Mountain, and Harding Avenue and on the low system in the areas of Laurel Ridge, Price Mountain, and Brush Mountain that minimize impacts to the surrounding viewshed while also accommodating numerous telecommunication antennas.

U.4. Ensure that all residents within Town limits are served by public utility services that provide adequate and reliable water and wastewater services. Areas outside the corporate limits will not be eligible for Town provided utility services unless a boundary line adjustment is requested and approved and the property becomes a part of the Town prior to services being provided.

U.5. Require new developments to utilize pipe design and construction of the water system in accordance with Town Code and development standards.

U.6. Plan regionally with local jurisdictions and authorities for public water needs, infrastructure, and utility extensions across jurisdictions.
   - Work cooperatively with other jurisdictions in the New River Valley to promote water conservation and to supply clean water to residents in the region without degrading the quality or quantity of the Town’s water supply.
   - Continue to participate in the Blacksburg-Christiansburg-VPI Water Authority on drinking water issues.

U.7. Encourage water reuse, including collection and reuse of stormwater and reuse of graywater.
Public Wastewater System
U.8. Provide a resilient, sustainable and cost-effective public wastewater service that is in conformance with all state and federal regulations.
   - Decrease the amount of inflow and infiltration (I/I) within the system before peak flows exceed pipe capacity.
   - Employ renewable engineering strategies to extend the life of existing wastewater assets.
   - Encourage industrial process water recycling to reduce wastewater volumes and treatment demand.
   - Document existing environmental and ecological conditions prior to the construction of any wastewater system to provide baseline ecological information on any affected creek.
   - Encourage reuse.

U.9. Continue an ongoing inspection and maintenance program as identified in the CMOM Program for the existing public wastewater system.
   - Use Capital Improvement Program funds to upgrade and replace existing wastewater lines to reduce I/I.
   - Maintain a cleaning and root-cutting program to prevent stoppages.
   - Reduce I/I by disconnecting sump pumps and roof drain spouts from wastewater collection lines and utilizing other best management practices.
   - Explore the feasibility of establishing a program to require inspection of roof drains and sump pumps at the time of real estate property transfers.

U.10. Plan regionally with other local jurisdictions and authorities for public wastewater needs, infrastructure, and utility extensions across jurisdictions. Participate with the Sanitation Authority to evaluate the region’s rate of development and project treatment facility upgrade needs.

Stormwater Management System
U.11. Develop a Comprehensive Stormwater Management Program, including a Stakeholder Advisory Committee to implement the Stormwater Management Task Force recommendations.

Solid Waste Management & Recycling

U.13. Develop a comprehensive Environmentally Preferable Purchasing Policy for all Town government operations to encourage purchase of less toxic, more environmentally friendly items, for example, reduced packaging that contains recycled materials that can be reused locally.

U.14. Continue to develop and promote long-term waste management and disposal strategies that explore alternatives to landfilling, including food composting and yard debris recycling.
U.15. As regional waste collection practices become more uniform, contract regionally for collection services to increase cost effectiveness.

U.16. As technology allows, consider development of a pay-as-you-throw program for refuse disposal whereby fees are based upon the amount of waste generated.

**Electrical Services & Natural Gas**

U.17. Support the development and maintenance of a highly reliable, efficient, and environmentally sound electrical infrastructure.

U.18. Regarding underground utilities:
- Require that new installations of utilities in developments be constructed underground.
- Emphasize conversion to underground utilities during all franchise negotiations and encourage Virginia Tech Electric Service and American Electric Power Company to convert overhead lines to underground on a continual basis.
- Convert utility lines to underground service in Town road improvement projects and lay conduit in all Town projects in the right-of-way to provide for future utility relocations.

U.19. Adopt or maintain reasonable regulations for utility separation, timing and coordination of work in the right-of-way, safety rules and regulations, and preservation of the streets in a condition to best serve the traveling public.

U.20. Encourage all utility franchisees to implement and maintain Best Available Technology (BAT) practices and infrastructure.

U.21. During all utility franchise negotiations, include a requirement that all utility companies report service disruptions on an annual basis to the Town of Blacksburg.

U.22. Support programs for public and private entities to become more energy efficient and utilize alternative energy sources such as solar, wind, or other decentralized technologies.
- Promote the use of Demand Side Management (DSM) to reduce energy use through efficiency improvement devices.
- Review and amend the Zoning Ordinance to incorporate clear standards.

U.23. Coordinate with Virginia Tech Electric Service and American Electric Power Company to ensure a seamless electrical power supply to all areas of the Town and encourage planning and cost-share projects between the Town and utility companies.

U.24. Provide cost-effective, energy-efficient street lighting in Town and on the Virginia Tech campus and VDOT-maintained roads that is appropriate to the use and character of the area and that promotes the Dark Sky initiatives.
U.25. Accept alternate street lighting within neighborhoods that is appropriate to the character of the area, available through the electric utility, and where any excess cost is paid by the neighborhood residents or commercial property owners.

U.26. Support the development and expansion of natural gas service that is reliable, cost effective, properly maintained, and responsive to customer needs. Require the best available safety measures and practices in franchise negotiations and encourage the expansion of natural gas service to new developments in a manner that accommodates anticipated commercial and industrial growth.

**Telecommunications and Technology**

U.27. Establish and maintain a vision of and goals for the Town’s globally competitive telecommunications infrastructure and technology-related services.

U.28. Establish public and private partnerships to undertake projects connecting any major public or private facility with fiber optic services.

U.29. Apply infrastructure and applications to make the municipal workplace and technology services better, faster, or less expensive; and to provide services that cannot be provided any other way.

U.30. Regularly assess the Town’s IT situation, monitor performance of infrastructure and services, and adjust activities as necessary.

U.31. Continue the transition toward paperless communications for all Town of Blacksburg processes, including website upgrades to implement the latest technology advances for online registration, payment and tracking of applications for all Town services and programs.

U.32. Pursue technology initiatives to provide additional access to Town and County services, including an upgrade for online virtual Town Hall meetings and additional meeting space designed for digital recording.

**Wireless Facilities**

U.33. Continue to implement the regional approach to siting wireless facilities. Encourage Virginia Tech to carefully consider and restrict the placement of wireless facilities on-campus and at the Corporate Research Center.