

## **WATER AND UTILITIES**

Management of our water supply, wastewater, and stormwater management plays a critical role in ensuring the health of South Burlington into the future. Alongside these critical water needs, two semi-private utilities, solid waste management and telecommunications, allow our community to remain clean and connected. Climate-resilient and equitable deployment of our community's time and funding resources to support these utilities is required.

### **OBJECTIVES**

- Public infrastructure capital investment accounts for and accommodates anticipated infill development and redevelopment
- Reduce nutrient loading into Lake Champlain to provide a more resilient water supply
  - *NOTE: ADD SPECIFIC TARGET*
- Assure planning and management of water, wastewater, and stormwater systems is done in a manner that protects our most vulnerable populations and distributes focus and funding equitably
- Plan for facilities that meet the needs of a changing climate for all residents in all parts of the City
- Advance all areas of the City to have adequate cell coverage and broadband/cable/fiber internet access, and support competition between carriers for provision of those services.

### **STRATEGIES**

- Seek opportunities for appropriate regionalization and coordination with other entities to provide adequate and efficient services for solid waste and telecommunications
- Seek opportunities for appropriate regionalization and coordination with other entities to provide efficient water services
- Foster choice among telecommunications providers to spur innovation in technology, service alternatives, and cost competitiveness
- Seek opportunities to partner with neighborhoods and businesses in the deployment of stormwater treatment practices
- Support and partner with CSWD to adapt and maintain solid waste management to current standards of waste management, materials sorting, waste reduction, and composting
- Seek opportunities to improve efficiency and lessen impacts of solid waste hauling on quality of life and greenhouse gas emissions
- Utilize stormwater treatment facilities and practices to provide public amenities, where feasible, especially in areas with less park space
- As areas are re-developed or infilled, regulate or invest in sufficient space to allow for multiple carriers
- Construct an additional Water Tank to provide capacity and volume to serve anticipated needs in the High Service Area
- Seek opportunities to reduce potable water use by household, business, and industrial users

## **Public & Regulated Utilities and Services**

Planning, design, installation, and maintenance of public and regulated private utilities reinforces and supports the City's land use and development objectives. The cost, permanence, and role of these utilities warrants strategic planning and cooperation with private sector providers, neighboring municipalities, and the State.

#### INVENTORY, ANALYSIS, AND CHALLENGES

South Burlington residents and businesses have access to the telecommunications services (land line telephone, cell phone, cable television, and broadband internet) from various providers. However, broadband access and reliable mobile access are not universal throughout the City, resulting in gaps that have become increasingly problematic over time. Further, in areas with service, there is often only a single provider which can lead to high consumer costs, limited choice, and poor service. South Burlington joined Essex, Essex Junction, Shelburne, and Williston to form the Chittenden County Communications Union District to harness federal funding and work toward reaching small pockets of residences without broadband internet service.

Maintaining a high-level of service requires continuous upgrades to telecommunications infrastructure. The siting of telecommunications infrastructure should consider issues of aesthetics, safety and efficiency. The use of existing structures, sites and utility corridors is preferred over new development. We must also remain nimble to adjust quickly to new and better technologies that improve service and reduce aesthetic impacts and energy use.

#### **Stormwater**

Management of stormwater runoff is a key component of the City's commitment to water quality and climate change mitigation. Properly capturing and treating stormwater prevents contaminants from flowing into our waterways and into Lake Champlain, reduces flooding, and supports biodiversity and quality of life. Water quality is critical in the face of changing climate conditions and is core to equitably providing basic government services to all.

#### INVENTORY, ANALYSIS & CHALLENGES

Stormwater Runoff. The City of South Burlington contains all or a portion of five streams (Bartlett Brook, Centennial Brook, Englesby Brook, Munroe Brook and Potash Brook) impaired by stormwater runoff. Stormwater impaired watersheds cover approximately 61% of the City. There is also a chloride impairment in streams and Lake Champlain has a phosphorus TMDL. Management of stormwater runoff can help to alleviate the impairments of these streams and help maintain the water quality of other streams and water bodies.

Construction of impervious surfaces (roads, rooftops, parking lots, sidewalks, etc.) prevents rain from soaking into the ground increases the amount of stormwater runoff, resulting in higher stream flows, stream bank erosion, flooding, and flow of chemicals on surfaces into local waterways. Failure of undersized or poorly maintained stormwater management systems exacerbates flooding and inadequate stormwater treatment increases water quality issues. Minimizing impervious surface as appropriate and requiring properly sized and properly maintained stormwater systems are critical.

Stormwater can be managed on a property-by-property basis with on-site structures, facilities, and passive treatment or in a larger centralized treatment facilities that manages runoff from multiple properties. The City has been actively engaged in establishing and maintaining stormwater systems to better manage stormwater runoff and conveyance of streams through drainage infrastructure. The City has encouraged or required on-site stormwater infiltration through Land Development Regulations and through grant funding opportunities for management projects. While some stormwater management techniques support compact development (e.g. reduced pavement widths) others may be contradictory to other land use goals (e.g. using relatively large open areas for stormwater management).

Stormwater Utility. In order to manage the City's stormwater, in 2005, the City established the first stormwater utility in Vermont. The utility identifies and manages stormwater infrastructure. It provides a stable source of revenue to complete required maintenance and manage stormwater related activities. The utility employs full-time staff dedicated to stormwater management and working to develop a comprehensive stormwater program and plan for needed capital improvements.

The City of South Burlington owns and maintains a stormwater system, separate from the sanitary sewer system. The stormwater system includes conveyance piping, storm drains, culverts, stormwater outfalls and stormwater treatment infrastructure. There are approximately 180 miles of pipes, ditches, culverts or other means of stormwater conveyance in South Burlington, of which approximately 100 miles are City-owned. In addition, there are over 6,750 storm drains within the City, approximately 3,400 of which are publicly owned. The City (through the stormwater utility) must continue to upgrade these system as the community grows and as water quality standards evolve. This will involve planning for treatment systems that reduce phosphorus, sediment, and other pollutants flowing to streams and practices that reduce application of chloride to only what is necessary, therefore reducing the loading of these materials into Lake Champlain. Reduction of application of chemicals to private, public, and institutional properties through education and outreach, reduction in lawn sizes, and modification and reduction of existing asphalt to reduce total impervious surface can also reduce the amount of chemicals entering the stormwater system, requiring less treatment before discharge. Currently, the State regulates application of pollutants like pesticides and herbicides, but the City may explore options for use of pollutants in our watersheds.

The stormwater utility manages drainage infrastructure and culverts, assists residents with state permitting, conducts watershed planning, and oversees maintenance of the City's stormwater infrastructure. The stormwater utility also maintains the City's compliance with the Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit is a federally mandated permit administered by the Agency of Natural Resources in Vermont. In 2014, the updated federal MS4 permit was issued, giving the City 20 years to make necessary improvements to its impaired watersheds, by implementing Flow Restoration Plans (FRPs) for Potash, Bartlett, Centennial, Englesby, and Munroe Brooks. All FRP projects must be constructed by December 5, 2032. The City needs to make further improvements to its stormwater management to meet FRP flow reduction targets.

All developed properties in South Burlington are assessed a stormwater utility user fee. Fees for commercial properties are calculated using a careful analysis of impervious surface area. There is a set fee for single-family homes, duplexes and triplexes. All other developed properties are assessed a fee based on the actual amount of impervious surface.

## Potable Water

Reliable potable drinking water is a basic human need and is required for human consumption, commercial use, and for fire suppression. The City needs to continue maintaining, upgrading, and replacing parts of the water treatment and water distribution systems to meet the needs of the City's users. This work must be done equitably and considering the stressors of increased weather variation and drought due to climate change. We also need to support increasing residential density and the development of more residential and commercial use in City Center.

### INVENTORY, ANALYSIS, & CHALLENGES

Water Distribution System. The availability of municipal water is a significant factor in locating new development and the ability to infill with redevelopment in built areas. Planning the water distribution system must balance the demand for new housing with conservation goals to determine where extensions of service lines are and are not appropriate. The Water Department maintains a Master Plan specifying the location and size of future planned water mains to meet future needs.

The City Water Department maintains a water distribution system including almost 100 miles of distribution pipeline. Since 1978, the City has contracted with the Champlain Water District (CWD) to provide management, administration, and operational services for the City's water distribution system. Three small areas do not have City water supply through the distribution system: Queen City Park, some residents in the Bartlett Bay area, and some residents in the Southeast Quadrant. Fire District #1 supplies potable water to approximately 80 households in Queen City Park from a deep rock well and an independent storage tank. Fire service to the Queen City Park area is from a dedicated fire line served from the South Burlington Main Service transmission main.

Water is sourced from the Champlain Water District (CWD) treatment plant, which draws and treats water from Shelburne Bay in Lake Champlain. CWD is a regional water supplier serving 12 municipal water systems. Water is treated at the Peter L. Jacob Water Treatment Plant on Queen City Park Road. This treatment facility has capacity to treat 20 million gallons per day with filtration, disinfection, and corrosion control. CWD assures the safety of the water through multi-barrier approach monitoring and planning for watershed protection to protect its source in Shelburne Bay.

Distribution piping in the water distribution system varies in age and quality. Substantial portions of the infrastructure are beginning to reach replacement age, notably in the neighborhoods built from the 1940s through 1960s. However, in older neighborhoods, relatively compact housing has allowed for greater cost efficiency in maintaining and replacing the water system components than in less compact areas of the City. Efforts to replace old, undersized pipes are important for continued reliability in providing drinking water and water for fire suppression.

Water is stored in the South Burlington West Tanks, a twin set of 0.5-million-gallon welded steel storage tanks north of Allen Road, and in the South Burlington East Tank, a 2.1-million-gallon tank on Dorset Street. Volume and capacity of the West Tanks are at \*\*\*\* as of 2023. Plans for increased capacity in the South Burlington East Tank are underway and necessary to support future development of City Center and surrounding area.

The South Burlington East Tank is operating and has commitments representing 98% of volume and capacity as of 2023. The City is actively working to design additional storage adjacent to the existing tank to meet anticipated needs within the service area. This planned tank is being designed to meet the City's water volume, pressure, and storage needs within this service area for the next 25 years and beyond.

Allocation fees are charged to new development and increased water demand on existing properties. These fees are used to pay for capital upgrades associated with the water distribution system. When new development or increased usage is proposed, developers must provide for water supply with adequate flow and pressure for fire protection, residential use, and standard commercial use. If a water line expansion is required, costs are borne by requestors except in rare cases. Maintenance costs are paid for by user fees.

One example of planned new development is City Center. This area has continued to be developed with multi-family housing and pedestrian-scale commercial development. The City's water supply ordinance has set aside 50,000 gallons per day for the future City Center area. It is estimated that upon final building, this will represent only a portion of the overall need. Regular review of allocations and the water ordinance are needed to assure that sufficient water supply infrastructure is installed to meet future needs. Currently, in 2023, the City is working on a significant revision to the Water Ordinance.

Water Use. As part of an overall strategy to make our potable water system more sustainable, further efforts can be made to reduce potable water use. This could include consumer education, regulation of water usage in new construction, study of the metering system to incentivize reduced use, and incentivization of use of rainwater and other non-potable water for landscaping, lawns, and other uses. However, the water system has operating costs that do not vary based on water use which will remain even with reduced use and places a floor on the reduction in water costs to individual users.

## **Wastewater Treatment**

Adequate wastewater treatment is required for public health and environmental protection. In South Burlington, much of the city is served by a wastewater collection system and two wastewater treatment facilities. Maintaining and upgrading these facilities is critical for limiting our impact on the environment and providing stable public services in the face of climate change stressors. We should also reduce our nutrient loading into the Winooski River and Lake Champlain to further mitigate climate change impacts. Modern wastewater collection and treatment facilities enable housing and other uses to be built more compactly, providing for a more human-scale, bikeable, and pedestrian-friendly built environment. It is a core government service allowing us to meet our land use and redevelopment goals.

### **INVENTORY, ANALYSIS, & CHALLENGES**

South Burlington is required to treat wastewater and discharge treated effluent that meets federal discharge permits and the federal Lake Champlain TMDL (total maximum daily load) for phosphorus. To meet these environmental standards, South Burlington operates two wastewater treatment facilities: Airport Parkway and Bartlett Bay. Airport Parkway, the larger facility, serves approximately 75 % of South Burlington and discharges to the Winooski River. It was upgraded in 2012 to 3.3 million gallons treated per day, 1.0 million gallons per day of which is allocated to Colchester Fire District #1 by an

intermunicipal agreement. An increase in clarifier capacity at this facility was approved by the voters in 2023 and will be constructed in the near future.

Bartlett Bay serves approximately 25 % of South Burlington with a permitted capacity of 1.25 million gallons per day. In 2019, the Eastwood neighborhood, which had been served by wastewater facilities in Burlington, were re-routed to the Bartlett Bay treatment facility, resulting in reduced user fees in South Burlington and new capacity in Burlington's facility. Funding for an upgrade to the Bartlett Bay treatment facility and to nearby pump stations was approved by the voters in 2023 and is in the design stages. Current capacity will meet the needs of the City for the foreseeable future so no significant capacity increases are included in the design plans. Any future sewer main construction will be primarily by private developers and can only be allowed with appropriate improvements to the existing network.

Currently, Airport Parkway treatment facility is permitted to 3.3 million gallons per day (mgd) and Bartlett Bay treatment facility is permitted to 1.25 mgd. Current use (2022) is at 57% of capacity at the Airport Parkway treatment facility and 54% at the Bartlett Bay treatment facility. In concert with State guidelines, capacity improvements should begin when a facility reaches 80% of capacity. At this time, no capacity upgrades are anticipated to be needed within the Capital Improvement Plan's 10-year planning horizon; however the City will continue to track and monitor capacity.

The City has set aside 150,000 gallons per day of capacity for the City Center area. Adding density in this New Town Center designation area relies on the availability of wastewater capacity. As with water supply, the City will continue to monitor and allocating sufficient capacity to support this planned area of growth

There are locations where new sewer service is not appropriate. Sewer connections are not recommended for designated Habitat Blocks, Conservation districts, or currently unserved areas planned for only extremely low density residential use. The limited number of housing units and low densities planned for residential areas not already served by sewer can be served by on-site septic systems if development occurs. Infrastructure lines through these areas should be strictly limited, reserved only for exceptional circumstances.

Planning for sewer service areas also presents an opportunity for thoughtful, coordinated efforts with our neighboring communities and regional partners. Our wastewater collection and treatment systems do not operate in a vacuum. Our neighboring municipalities' discharge treated effluent into the same bodies of water and pull water to treat for drinking water from the same. Shelburne Bay receives treated effluent from the Bartlett Bay treatment plant and Town of Shelburne wastewater treatment facilities, and is also the raw water source for the Champlain Water District. The Winooski River receives sewage plant outfall from several municipalities. The capacity of the Winooski River to receive effluent and remain under water quality standards is limited. The City must continue to collaborate with neighboring municipalities and to reduce the loading in discharged effluent even as water usage increases.

A small number of City homeowners rely on soil-based septic systems. Less than five percent of City residents have on-site septic disposal systems, a majority of which predate infrastructure being located in the area.

## **Telecommunications**

Access to adequate telecommunications services has become a critical component of the community's education, medical care, employment, and day-to-day needs. This reliance brings with it a significant equity challenge in South Burlington. Provision of services accessible to all income levels, English-language levels, and ages must be a priority because the world increasingly relies on information over the internet.

## **Solid Waste**

Solid waste management is a core service that allows our City to remain clean. Reducing the production of solid waste in the community, through incentivization, education, regulation, or other methods, is the first step to a more sustainable solid waste management system.

Solid waste management is handled by the Chittenden County Solid Waste District (CSWD), which includes 18 member municipalities. It collectively provides for the efficient, economical, and environmentally sound management of solid waste. CSWD is governed by its charter, a Waste Management Ordinance, Solid Waste Management Fee Ordinance, and further Regulations.

CSWD delivers solid waste to two transfer stations or directly to lined landfills outside the district. The interim in-district landfill closed in 1995. CSWD identified a site located on Redmond Road in Williston for its proposed regional landfill. However, that site has not been developed and the only operating landfill in Vermont is located in Coventry. Future development of additional facilities in the state, and closer to Chittenden County, will be required for more sustainable solid waste management.

CSWD currently operates a drop-off center at the City's former landfill site on Patchen Road. The drop-off center accepts solid waste, recyclables and special wastes such as tires, scrap metal, leaves and brush. Approximately 1/3 of household waste collected by CSWD is compostable food scraps, which now must be kept out of the trash. Compost is collected at the drop-off center and processed at Green Mountain Compost in Williston.

Waste hauling – trash, recycling, and compost – is entirely undertaken by the private sector today, either by individuals or by professional haulers. The structure does not include any form of allocation of service areas or types. A resulting effect is that several private trash hauling services serve the same streets. This redundancy is referenced in the City's 2022 Climate Action Plan. In 2020, the Cities of Burlington and South Burlington completed a Feasibility Study for Residential Solid Waste Collection Contracts, which explored options for managing allocation. Continuing to study this issue will involve the City, homeowners' associations, and the private sector.