

### **Trash Pick-up**

Curb-side collection is proposed for the PRD refuse and recycling. Each townhome unit will be supplied with trash and recycling carts, with collection and fees managed by a Homeowners Association or serviced by Town provided refuse collection. Refuse and recycling will be collected from the alleys for alley-loaded units. A screened staging area for carts has been provided for the four townhome units that are on a short dead-end alley. Street-loaded units will be collected from the street.

### **Other Utilities**

Utility connections such as power, phone, cable television, gas, and any other miscellaneous utilities serving this community shall be located underground. Coordination with Virginia Tech Electric Service and the other private utility companies will be necessary to limit or avoid impacts to the adjacent residential areas.

## **IV. Public Utilities**

All utilities will be constructed to Town standards, and where appropriate, be dedicated to the Town. Public utility easements will be dedicated along water distribution and sewer collection lines outside of the road right-of-way. According to Town staff, there is adequate water capacity for this project. A sewer flow estimate has been provided within this section for Town staff to determine the available capacity for the proposed sewer flows.

### **Water and Sanitary Sewer**

All water systems shall be installed according to Town standards. Fire hydrants shall be located at all intersections more than 400 feet apart, at the end of all dead-end streets more than 400 feet in length, and the maximum distance between any structure and the nearest fire hydrant shall not exceed 200 feet. New water mains shall be looped where possible, and dead-end line lengths shall be 400 feet maximum. Each townhome unit shall be individually metered. The Town's Engineering Department was contacted to ensure there is adequate pressure and flow in existing waterlines which will be confirmed by the Town Water Resources Department at the time of site plan development.

All sanitary sewer systems shall be installed according to Town standards. The Town's Engineering Department was contacted to verify adequate capacity in the existing downstream sanitary sewer. A portion of the receiving sanitary sewer system downstream of the proposed development is currently at or above capacity, thus infrastructure improvements will be required as part of or prior to development of the subject property. Specifics of these improvements and the timing shall be coordinated with the Town Engineering Department.

Based on Town of Blacksburg Standards and Virginia Department of Health Standards, an average daily flow is estimated for the proposed uses below.

### **RESIDENTIAL USE**

Residential Housing: Maximum of 73 total units  
*Design Assumptions and Calculations:*

1. Water and Sewer usage for residential use is 170 gal/day per unit = 12,410 gal/day
2. Length of new sewer pipe +/- 2,870' x 1.5 gpd/ft infiltration factor = 4,305 gal/day

**TOTAL ESTIMATED WATER USAGE BY PROPOSED DEVELOPMENT = 12,410 gallons per day**

**TOTAL ESTIMATED SEWER USAGE BY PROPOSED DEVELOPMENT = 16,715 gallons per day**

Applicant will construct or cause to be constructed at no expense to the Town all water/sewer mains and appurtenances on the Property and will connect the water/sewer mains to publicly owned water/sewer mains. All water mains and sewer mains will be constructed to the standards of the Town, will comply with the regulations and standards of the Town and will comply with the regulations and standards of all other applicable regulatory authorities. All water mains and appurtenances and sewer mains will be dedicated to public use unless otherwise directed by the Town of Blacksburg. Any water mains and appurtenances and/or sewer mains that must be relocated as part of the development will be relocated by the applicant at no cost to the Town unless otherwise agreed to by the Town and the Applicant.

### **Water Quality & Stormwater Management Standards**

#### **Pre-Development Summary**

In the pre-development condition prior to initial redevelopment, the site contained a high school building with parking lots and other impervious areas. There were no existing stormwater management BMPs serving the high school site. Runoff from the site was collected by various storm sewer inlets which converged into storm drains running along the Patrick Henry Drive entrance to the site and ultimately was discharged through manmade and natural conveyance systems on the southwest side of Patrick Henry Drive. The Limit of Analysis has been set at the storm drain crossing to the southwest side of Patrick Henry Drive, encompassing a drainage area of approximately 62 acres to include the entire rezoned area.

A Stormwater Concept Plan and Narrative has been submitted with the application that addresses the Town and State stormwater quantity and quality requirements. At a minimum, the 1-Year, 2-Year and 10 Year post-development runoff rates will be less than or equal to the 1-Year, 2-Year and 10-Year pre-development runoff rates.

#### **Post-Development Summary**

In the post-development condition, the site will be graded to capture site runoff via sheet flow, roof drains, curb inlets, and stormwater piping. Runoff will be collected in a storm drain system that will discharge to the same existing storm drains near the Patrick Henry Drive entrance. Since the proposed development accomplishes a significant reduction in impervious area, no stormwater management BMPs are required to achieve the minimum channel and flood protection requirements.