Town of Frederick Water Demand Estimate

The following tables may be used to calculate a preliminary water demand analysis.

Disclaimer: All official water demand analyses will be performed by the Town of Frederick Engineering Department and will be based on information provided in approved final plan sets. The information provided here is for approximation purposes only and calculations performed by developers or property owners will not be used to determine the amount of water required for dedication. Town of Frederick Engineering Department will not provide the applicant with a preliminary water demand analysis, but Town will only provide the applicant with the official water demand analysis.

Table 1. Residential Indoor Water Use Calculation

Residential Indoor Water Use			
Use	**Number of Units (from plans)**	**CBT/Unit**	**Number of Units * CBT/Unit**
Single Family Detached ≥ 4 Bedrooms		0.367	=
Single Family Attached		0.333	=
Single Family Detached		0.333	=
Multi-family		0.283	=
Total Residential Indoor Water Use (sum of right column)			

Table 2. Non-Residential Indoor Water Use Calculation

Non-Residential Indoor Water Use				
Use	**SF or Number of Units (from plans)**	**Gal/Unit (from Table 5)**	**CBT/Unit (convert Gal to CBT using Equation 1 found in FAQs below)**	**SF or Number of Units * CBT/Unit**
primary use				=
secondary use				=
other use				=
Total Non-Residential Indoor Water Use (sum of right column)				

Table 3. Outdoor Water Use Calculation

Outdoor Water Use			
Hydrozone	**Acres (from landscape/hydrozone plan)**	**CBT/Acre**	**Acres * CBT/Acre**
Low		1.337	=
Medium		2.674	=
High		4.166	=
Total Outdoor Water Use (sum of right column)			

Table 4. Total Water Demand Calculation

TOTAL WATER DEMAND			
Total Residential Indoor Water Use	**Total Non-Residential Indoor Water Use**	**Total Outdoor Water Use**	**TOTAL WATER DEMAND***
+	+		=

* The water requirement shall be rounded up to the next whole number as fractional CBT units cannot be dedicated to the Town.

Table 5. Non-residential indoor water demand by use

Non-Residential Use	Units	Use (Gal/unit)
Auto Service & Repair	sf	27.13
Assisted Living	unit	78,750.00
Car Wash with Recycling	bay	81,375.00
Childcare	sf	75.00
Church	sf	39.38
Clubhouse/Pool	unit	175,000.00
Fast Food Restaurant	sf	125.00
Grocery Store	sf	48.13
Gas Station w/ Car Wash	sf	1,808.75
Gas Station w/o Car Wash	sf	302.50
Hospital	sf	74.96
Hotel	room	29,457.50
Medical Office	sf	44.63
Office	sf	10.00
Restaurant	sf	250.00
Retail	sf	36.25
School	sf	15.50
Warehouse (Storage Facility)	sf	8.75
Industrial	sf	27.50
For other categories please contact Engineering Staff.		
*Based on Westminster's 2018 Demand Standards with minor adjustments per correspondence with Westminster staff in Nov-2022 and adjustments for CWCWD and water loss.		

Water Demand Analysis Frequently Asked Questions:

1. How much water does 1 CBT unit provide?

   0.6 Acre Feet (MC Sec. 13-2-25(a)(4).)

2. How do you calculate CBT units from gal/unit/?

   Equation 1: $\frac{Gal}{Unit} \times \frac{1\ acre-ft}{325{,}851\ Gal} \times \frac{1\ CBT}{0.6\ acre-ft} = \frac{CBT}{Unit}$