

Base Rates for Additional Meter Sizes

Per the AWWA M1 Manual, it is recommended that base rates be set in a way to cover fixed costs of the water system. To do this equitably, the maximum operating capacity of the various meters is used to determine an individual meter's potential impact on the water system, as most fixed costs are associated with the infrastructure required to meet this potential demand. In the rate study completed last year, this approach was used to determine the theoretical base rates for existing customers, as seen in the table below.

Meter Size in "	Decimal Size	Number of Meters	AWWA Safe Maximum Operating Cap. (GPM)	Max Demand (GPM)	% of Max Demand by Meter Size	Total Fixed Costs Allocated by Meter Size	Theoretical Base Rate by Meter Size per M
A	B	C	D	E= D * C	F= % of total	G= % * total	H=G/C/12
5/8"	0.625	0	20				
3/4"	0.750	845	30	25,350	59.38%	\$986,968	\$97.33
1"	1.000	118	50	5,900	13.82%	\$229,709	\$162.22
1.5"	1.500	28	100	2,800	6.56%	\$109,014	\$324.45
2"	2.000	34	160	5,440	12.74%	\$211,799	\$519.12
3"	3.000	10	320	3,200	7.50%	\$124,588	\$1,038.23
Total		1035		42,690	100.00%	\$1,662,078	

Please note, the above table looks at the *theoretical* base rate, which would have all fixed costs in the system covered only by base rates. Due to the high costs of the base rates, and the reduced ability for individuals to control their utility bill, the board elected to move forward with lower base rates that are a percentage of the theoretical rates.

The rate analysis calculated rates only for customers that are entered into the model, as such it did not calculate base rates for any meters not currently in the water system. To determine base rates for future customers that may require a meter size not listed above, an additional calculation was done following the guidance used to determine the theoretical base rate.

The base rates for customers have been calculated based on the safe operating capacity of the meter sizes, similar to the AWWA methodology used in the rate study. To determine the new base rates, the percentage capacity of each meter size is compared to the most common meter size (3/4"). This is used to calculate a ratio, represented as a percentage, between each meter size with the most common size. For example, a 4" meter has a maximum operating capacity of 500 gallons per minute (GMP) and a 3/4"

meter has a maximum operating capacity of 30 GPM. From this, it is calculated that the 4" meter has a maximum operating capacity that is 1667% of the ¾" meter. This ratio can then be applied to the ¾" base rate of \$38.50, resulting in a base rate for the 4" meter of \$641.67.

Meter Size (Inches)	AWWA Safe Maximum Operating Cap. (GPM)	% Capacity of Most Common Meter Size	Proposed Base Rate (based on ¾" Base Rate)
Enter current rate for ¾" meters here:			\$38.50
5/8"	20	67%	\$25.67
¾"	30	100%	\$38.50
1"	50	167%	\$64.17
1.5"	100	333%	\$128.33
2"	160	533%	\$205.33
2.25"		0%	\$0.00
2.5"	300	1000%	\$385.00
3"	320	1067%	\$410.67
4"	500	1667%	\$641.67
6"	1000	3333%	\$1,283.33
8"	1600	5333%	\$2,053.33
10"	3800	12667%	\$4,876.67
12"	5000	16667%	\$6,416.67

This method can also be utilized in future years as the base rate for ¾" customers changes. By entering the base rate for these customers into the designated yellow cell, the calculations will be automatically updated. The spreadsheet has been locked for protection, but no password is required for future edits. It should be noted that information for the 2.25" meters was not available, and thus, they have been excluded from the calculations.