



Pagosa Area Water and Sanitation District
 100 Lyn Ave. / P.O. Drawer 4610, Pagosa Springs, CO 81157
 PHONE: (970) 731-2691 FAX: (970) 731-2693

Location Number: _____
 Account Number: _____
 Permit Number: _____

2017 COMMERCIAL WATER METER SIZING WORKSHEET

Date: _____
 Name of Property Owner: _____
 Name of Contact Person: _____
 Name of Business (if applicable): _____

Work: _____
 Cell: _____

Property Location
 Street Address: _____
 Subdivision: _____ Block: _____ Lot: _____

| Type of Fixture | Current Water Fixtures In Bldg | + | Water Fixtures Added to Bldg | - | Water Fixtures Removed from Bldg. | = | Total Fixtures | x | Fixture Unit Multiplier (choose ONE per row) | | = | Total Fixture Unit Value |
|------------------------------------|--------------------------------|---|------------------------------|---|-----------------------------------|---|----------------|---|--|--------------------|---|--------------------------|
| | | | | | | | | | General Use | Heavy Use Assembly | | |
| Bar Sink | | + | | - | | = | | x | 3.0 | | = | |
| Bathroom sink, each set of faucets | | + | | - | | = | | x | 2.0 | | = | |
| Clinic sink | | + | | - | | = | | x | 8.0 | | = | |
| Clothes Washer, domestic (8 lb) | | + | | - | | = | | x | 3.0 | | = | |
| Clothes Washer, domestic (15 lb) | | + | | - | | = | | x | 4.0 | | = | |
| Dental unit, cuspidor | | + | | - | | = | | x | 1.0 | | = | |
| Dishwasher, domestic | | + | | - | | = | | x | 1.5 | | = | |
| Drinking fountain or water cooler | | + | | - | | = | | x | 0.5 | 0.8 | = | |
| Hose bibb - FIRST | | + | | - | | = | | x | 2.5 | | = | |
| Hose bibb, EACH ADDITIONAL | | + | | - | | = | | x | 1.0 | | = | |
| Kitchen sink, hotel or restaurant | | + | | - | | = | | x | 4.0 | | = | |
| Kitchen sink, domestic | | + | | - | | = | | x | 1.5 | | = | |
| Laundry sink | | + | | - | | = | | x | 2.0 | | = | |
| Lawn sprinkler, each full head | | + | | - | | = | | x | 1.0 | | = | |
| Service sink or mop basin | | + | | - | | = | | x | 3.0 | | = | |
| Shower | | + | | - | | = | | x | 2.0 | | = | |
| Shower, continuous use | | + | | - | | = | | x | 5.0 | | = | |
| Toilet, 1.6 GPF gravity tank | | + | | - | | = | | x | 2.5 | 4.0 | = | |
| Toilet, 3.5 GPF gravity tank | | + | | - | | = | | x | 5.0 | 7.0 | = | |
| Urinal, 1.0 GPF | | + | | - | | = | | x | 3.0 | 5.0 | = | |
| Urinal, greater than 1.0 GPF | | + | | - | | = | | x | 5.0 | 6.0 | = | |
| Urinal, flush tank | | + | | - | | = | | x | 3.0 | 4.0 | = | |
| Washfountain, circular spray | | + | | - | | = | | x | 4.0 | | = | |
| Other (Describe) | | + | | - | | = | | x | | | = | |
| Other (Describe) | | + | | - | | = | | x | | | = | |

For explanations, see 1997 Uniform Plumbing Code & 2006 International Plumbing Code **Fixture Unit Subtotal :** _____

Other Water Requirements: See Table E103.3(3)

| | | | |
|----------------------------|------------|---------------|---------------------------------|
| Fixture Description: _____ | GPM: _____ | Number: _____ | Calculated Fixture Units: _____ |
| Fixture Description: _____ | GPM: _____ | Number: _____ | Calculated Fixture Units: _____ |
| Fixture Description: _____ | GPM: _____ | Number: _____ | Calculated Fixture Units: _____ |

Total Fixture Units: _____

I affirm that the information given is correct. I acknowledge that the approval given for minimum meter size and maximum water capacity is based solely on the information provided above, and such determination is at the discretion of the Pagosa Area Water and Sanitation District. Any deviation under construction will require resubmission of corrected data for determination of adequacy of meter size.

Required Signatures:

Signature (Design Engineer) _____ Date Signed _____

Signature (Owner/Agent) _____ Date Signed _____

Location Number: _____

Account Number: _____

Permit Number: _____

Instructions for completion of the PAWSD Commercial or Multi-Family Water Meter Sizing Worksheet

Matrix to Determine Meter Size and Water Demand

Complete the columns of the matrix by supplying the quantity and type of fixtures being added, remaining, and/or removed. (Note: Relocated fixtures are considered "remaining" since there is no change in demand.) Accuracy of the fixture count is necessary to determine the appropriate meter size and Equivalent Units.

Fixtures in New Structure

In the "Fixtures in New Structure" column, list the number of new fixtures or the number of fixtures being added to an existing project under the appropriate fixture type.

Fixtures in Existing Structure

In the "Fixtures in Existing Structure" column, list the number of fixtures that will remain or that will be relocated during the construction phase of the project.

Fixtures Removed

In the "Fixtures Removed" column, list the number of fixtures that are actually being removed which will create a reduction in the water demand. Note: Replacing a sink with a new sink or a hose bibb with a new hose bibb, etc, does not constitute "Removed." They are considered as "Fixtures in Existing Structure" (unless replacement is by fixtures of lower-flow capacity).

Other Water Requirements

There are some process water demands that are not listed, such as car washes. Each of these will be assigned a fixture unit count based upon its GPM demand. Make sure this information is provided.

Fixture Unit Multiplier

Each plumbing fixture is given a fixture unit value based upon the 1997 Uniform Plumbing Code. Fixture units are used for water meter sizing purposes. The unit count for each fixture is determined by multiplying the number of each fixture type by the appropriate number in the multiplier column. Only ONE multiplier should be chosen per row.

GENERAL USE: Applies to business, commercial, industrial, and assembly occupancies other than those defined under "Heavy Use." Included are the public and common areas in hotels, restaurants, and multi-dwelling buildings.

HEAVY USE: Applies to toilet facilities in occupancies that place a heavy, but intermittent, time-based demand on water supply system, such as schools, auditoriums, stadiums, race courses, theaters, and similar occupancies where queuing is likely to occur during periods of peak use.

Lawn Sprinkler Heads

Add all 1/4, 1/2, 3/4, and full irrigation heads to determine the total number of full sprinkler heads. For example, two 1/4 heads and one 1/2 head will equal one full head.

GPM (Gallons per Minute)

When any water requirement is listed by GPM demand, fixture unit count will be determined by using the 2006 Uniform Plumbing Code Table E103.3(3) - Table For Estimating Demand.

2017 COMMERCIAL & MULTI-FAMILY ACCOUNTS -TO BE COMPLETED BY PAWSD STAFF

Required Service Size and Equivalent Units Chart

| Fixture Unit Count | Meter Size | * # Equivalent Units | ** GPM |
|--------------------|------------|----------------------|--------|
| 0-30 | 1" | 1 | 50 |
| 30.5-52 | 1" | 1.5 | 50 |
| 52.5-127 | 1" | 2.5 | 50 |
| 128-375 | 1.5" | 5 | 100 |
| 376-700 | 2" | 8 | 180 |
| 701-1950 | 3" | 16 | 320 |
| 1951-3700 | 4" | 25 | 500 |
| 3,701-8,200 | 6" | 50 | 1,000 |

*EU designation set forth by '97 Uniform & '06 International Plumbing Code.

**With approximate flow of 60 psi at meter

***** Monthly Basic Service Assessment**

| Meter Size | EU | *** Water | Water/Wastewater |
|------------|-----|------------|------------------|
| 1" | 1 | \$23.50 | \$55.50 |
| 1" | 1.5 | \$35.25 | \$83.25 |
| 1" | 2.5 | \$58.75 | \$138.75 |
| 1.5" | 5 | \$117.50 | \$277.50 |
| 2" | 8 | \$188.00 | \$444.00 |
| 3" | 16 | \$376.00 | \$888.00 |
| 4" | 25 | \$587.50 | \$1,387.50 |
| 6" | 50 | \$1,175.00 | \$2,775.00 |

*** Includes 2,000 gal/EU

Fixture Count Total (from pg.1): _____

Corresponding Meter Size: _____

Acct Current Meter Size: _____

Corresponding EU: _____

Acct Current EU: _____

Water CIF: \$2,658 / EU _____

Wastewater CIF: \$1,017 / EU _____

Raw Water Acquisition Fee: \$1,959 / EU _____

NOTES / COMMENTS:

Prepared By: _____

Date: _____

PLEASE NOTE: FEE SCHEDULES ARE SUBJECT TO CHANGE

Location Number: _____

Account Number: _____

Permit Number: _____

Appendix E

Table E103.3(3)
Table for Estimating Demand
Supply Systems Predominantly for Flush Tanks

| Gal per Minute | Water Supply Fixture Units | Cubic ft per Minutes |
|----------------|----------------------------|----------------------|
| 3.0 | 1 | 0.041040 |
| 5.0 | 2 | 0.06840 |
| 6.5 | 3 | 0.86892 |
| 8.0 | 4 | 1.06944 |
| 9.4 | 5 | 1.26592 |
| 10.7 | 6 | 1.4303760 |
| 11.8 | 7 | 1.577424 |
| 12.8 | 8 | 1.711104 |
| 13.7 | 9 | 1.831416 |
| 14.6 | 10 | 1.951728 |
| 15.4 | 11 | 2.058672 |
| 16.0 | 12 | 2.138880 |
| 16.5 | 13 | 2.205720 |
| 17.0 | 14 | 2.272560 |
| 17.5 | 15 | 2.339400 |
| 18.0 | 16 | 2.906240 |
| 18.4 | 17 | 2.459712 |
| 18.8 | 18 | 2.513184 |
| 19.2 | 19 | 2.566656 |
| 19.6 | 20 | 2.620128 |
| 21.5 | 25 | 2.874120 |
| 23.3 | 30 | 3.114744 |
| 24.9 | 35 | 3.328632 |
| 26.3 | 40 | 3.515784 |
| 27.7 | 45 | 3.702936 |
| 29.1 | 50 | 3.890088 |

| Gal per Minute | Water Supply Fixture Units | Cubic ft per Minutes |
|----------------|----------------------------|----------------------|
| 32.0 | 60 | 4.277760 |
| 35.0 | 70 | 4.678800 |
| 38.0 | 80 | 5.079840 |
| 41.0 | 90 | 5.480880 |
| 43.5 | 100 | 5.815080 |
| 48.0 | 120 | 6.416640 |
| 52.5 | 140 | 7.018200 |
| 57.0 | 160 | 7.619760 |
| 61.0 | 180 | 8.154480 |
| 65.0 | 200 | 8.689200 |
| 70.0 | 225 | 9.357600 |
| 75.0 | 250 | 10.026000 |
| 80.0 | 275 | 10.694400 |
| 85.0 | 300 | 11.362800 |
| 105.0 | 400 | 14.036400 |
| 124.0 | 500 | 16.576320 |
| 170.0 | 750 | 22.725600 |
| 208.0 | 1,000 | 27.805440 |
| 239.0 | 1,250 | 31.949520 |
| 269.0 | 1,500 | 35.959920 |
| 297.0 | 1,750 | 39.702960 |
| 325.0 | 2,000 | 43.446000 |
| 380.0 | 2,500 | 50.798400 |
| 433.0 | 3,000 | 57.883440 |
| 525.0 | 4,000 | 70.182000 |
| 593.0 | 5,000 | 79.272240 |