



Department of Water Supply

WATER METER SIZING WORKSHEET - RESIDENTIAL

Project Name: _____ Building Permit No.(if applicable): _____

Contact Name: _____ Phone No.: _____ Email Address: _____

Property Address: _____ TMK: _____

Account Number: _____ Meter Number: _____ Existing Meter Size:

INSTRUCTIONS: This application must be signed by the property owner or authorized representative. Please complete the items below and submit one Water Meter Sizing Worksheet for each water meter on the property as applicable. Refer to page 2 for additional information and requirements. Should you have any questions, please contact the DWS Engineering Division at 808-270-7835.

1 ZERO WATER USE SCENARIO? YES NO

By selecting "YES", the applicant signing this worksheet certifies that no additional water demand is being added, removed or replaced with this application. If you propose zero water use you do not need to complete below items 2, 4 and 5.

2 DOMESTIC WATER DEMAND? YES NO

Type of Fixture	Fixtures Added LF	Fixtures in Existing Structure		Fixtures Removed if Applicable		Total Fixtures		x	Fixture Unit Multiplier		=	Fixture Unit Value Subtotals			=	Total Fixture Unit Value
		LF	NLF	LF	NLF	LF	NLF		LF	NLF		LF	+	NLF		
Shower/Bathtub/Combo		+						x	1.6	2.0	=		+		=	
Kitchen Sink		+						x	1.6	2.0	=		+		=	
Sink, small (bar/hand)		+						x	0.6	1.0	=		+		=	
Lavatory Sink		+						x	0.6	1.0	=		+		=	
Urinal		+						x	1.7	3.0	=		+		=	
Water Closet (Toilet)		+						x	1.7	3.0	=		+		=	
Bidet		+						x	2.0	2.0	=		+		=	
Laundry Tray/Tub		+						x	1.6	2.0	=		+		=	
Washing Machine		+						x	2.0	2.0	=		+		=	
Dishwasher		+						x	2.0	2.0	=		+		=	
Hose Bib*		+				2		x	3.0	3.0	=	6	+	N/A	=	6.0
Other:		+						x			=		+		=	
		+						x			=		+		=	
		+						x			=		+		=	

* For residential applications, 2 hose bibs shall always be counted.

DOMESTIC WATER DEMAND FIXTURE UNIT TOTAL: _____

DOMESTIC WATER DEMAND FIXTURE UNIT TOTAL CONVERTED TO GPM:** _____

**Refer to Table 2 on Page 2 for Flow to Fixture Unit Conversions.

3 SWIMMING POOL/SPA/TANK & OTHER MISCELLANEOUS WATER DEMAND? YES NO

Swimming Pool/Spa/Tank: Please indicate how your swimming pool/spa/tank is to be filled: Hose Bib or Dedicated Line. If filled by hose bib, no additional water demand is assessed. If filled by dedicated water line, please provide the required flow rate in GPM:

Other Miscellaneous Water Demand: Attach detailed justification information sufficient to describe the water demand. Total proposed GPM:

SWIMMING POOL/SPA/TANK & OTHER MISCELLANEOUS WATER DEMAND TOTAL IN GPM:

4 IRRIGATION WATER DEMAND? YES NO

Option A: State the measured flow rate for the largest separate circuit of your irrigation system in GPM:

Option B: Describe the largest separate circuit. Provide the number of sprinkler heads and rated flow in GPM per head to obtain a total flow rate in GPM:

IRRIGATION WATER DEMAND TOTAL IN GPM:

5 TOTAL WATER DEMAND in GPM (the sum of total GPM from above items 2, 3 and 4):

Verify the total water demand is within your existing meter's capacity, otherwise a meter upgrade may be required.

6 CERTIFICATION: I certify that the above water demand for the fixtures in the existing structure is the **TOTAL AMOUNT OF WATER DEMAND CURRENTLY ON THE METER**. I understand that the fixtures added, replaced, or removed shall conform with the associated building permit plans or plumbing permit application. If there is a discrepancy, I understand DWS staff will note the corrections on this worksheet.

Applicant's Signature: _____ Date: _____

Print Name: _____

If this form is to be signed by an authorized representative, written evidence of authority to represent the applicant shall be provided.

WATER METER SIZING WORKSHEET ADDITIONAL INFORMATION - RESIDENTIAL

NOTES:

- 2 A. **Domestic Water Demand Calculation:** Complete the columns of the chart by supplying the quantity and type of fixtures being added, to remain, and/or removed. Accuracy of the fixture count is necessary to determine the appropriate meter size and GPM. Refer to Table 1 below for details on Meter Sizing.
- 2 B. **Low Flow ("LF") vs. Non-low Flow ("NLF"):** All water fixtures manufactured after 1992 are considered low flow fixtures. For applications that propose to receive fixture unit credits for changing non-low flow fixtures to low-flow fixtures, photographs of the replaced water fixtures may be required by DWS to obtain the appropriate fixture unit credits.
- 2 C. **Fixtures Added:** In this column, list the number of new fixtures being added during the construction phase of the project. This includes new fixtures being added to replace existing ones.
- 2 D. **Fixtures in Existing Structure:** In this column, list the number of fixtures that are existing in the structure(s) served by the water meter. This includes existing fixtures scheduled to be replaced during the construction phase of the project.
- 2 E. **Fixtures Removed if Applicable:** In this column, list the number of fixtures that are being removed during the construction phase of the project. This includes existing fixtures to be replaced by new ones. If water fixtures are being removed, photographs of the removed water fixtures may be required by DWS to obtain the appropriate fixture unit credits.
- 2 F. **Fixture Unit Multiplier:** Each water fixture is given a fixture unit value. 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.

Meter Size	Maximum Capacity (GPM)	Fixture Units
5/8"	20	31
3/4"	30	53
1"	50	128
1-1/2"	100	380
2"	160	692

Flow GPM	Fixture Units	Flow GPM	Fixture Units	Flow GPM	Fixture Units	Flow GPM	Fixture Units
1	0	12	16	26	44	40	86
2	1	13	18	27	46	41	90
3	3	14	20	28	49	42	95
4	4	15	21	29	51	43	99
5	6	16	23	30	53	44	103
6	7	17	24	31	56	45	107
7	8	18	26	32	58	46	111
8	10	19	28	33	60	47	115
9	12	20	31	34	63	48	119
10	13	21	32	35	66	49	123
11	15	22	34	36	69	50	128
12	16	23	36	37	74	51	130
13	18	24	39	38	78	52	135
14	20	25	42	39	83	53	141

*** Additional flow to Fixture Unit Conversions for higher flows are available upon request. For values between values included in Table 2, linear interpolation should be used to determine the exact GPM. For example, the following calculation can be performed to determine the exact GPM between 15 and 16 based on 22.1 FU's for reference:
 $GPM = 16 - (16 - 15) \times ((23 - 22.1) / (23 - 21)) = 15.6 \text{ GPM.}$

- 3. **Other Miscellaneous Water Demand:** There are some process water demands that are not listed, such as unusual water fixtures, custom equipment, etc. Each of these will be assessed on a case by case basis by DWS and assigned either a fixture unit value or demand in GPM. Refer to Table 2 above.
- 4. **Irrigation Water Demand:** The largest separate circuit of your irrigation system can not exceed half of the water meter's maximum capacity. For example, a 5/8" water meter is allowed 10 GPM maximum water demand for the largest separate circuit of a proposed irrigation system. Refer to Table 1 above for the maximum capacity of a meter.

OTHER NOTES:

- G. **Water Meter and Other DWS Fee's:** The total cost of the various size water meters and other fee's are determined on a fiscal year annual basis ending June 30 and beginning on July 1 of each year. Detail of the fees are included in the County Maui Revenues - Fees, Rates, Assessments and Taxes for the current year are available on the County Maui website on the following link: <http://www.co.maui.hi.us/index.aspx?NID=216>
- H. **DWS Agreements:** Provide copies of any existing DWS related agreements that apply to your property and/or water meter(s) with your application. DWS will require an elevation agreement be in place prior to installation of water meter(s) and approval of permits if the available water pressure is less than 40 PSI at the proposed connection point. Other DWS agreements may be required based on your application and will be determined on a case by case basis.
- I. **Water System Improvements ("WSI"):** WSI's will be required to bring the water system to current DWS Standards. DWS Standards are available on our website: <https://www.maui-county.gov/214/Engineering-Division>.