City of O'Fallon - Water Meter and Tap Sizing

Address: _____

Lot # _____ **Subdivision** _____

	Fixture	Occupancy	Type of Supply Control	Load Values in Water Supply Fixture Units (WSFU) Cold	Hot	Total Value for Fixture	x	No. of Fixtures	=	Total WSFUs per Fixture Type
1	Water Closet	Public	Flush Valve	10	-	10	x		=	
2	Water Closet	Public	Flush Tank	5	-	5	x		=	
3	Urinal	Public	1" Flush Valve	10	-	10	x		=	
4	Urinal	Public	3/4" Flush Valve	5	-	5	x		=	
5	Urinal	Public	Flush Tank	3	-	3	x		=	
6	Lavatory	Public	Faucet	1.5	1.5	2	x		=	
7	Bathtub	Public	Faucet	3	3	4	x		=	
8	Shower Head	Public	Mixing Valve	3	3	4	x		=	
9	Service Sink	Offices, etc.	Faucet	2.25	2.25	3	x		=	
10	Kitchen Sink	Hotel/Restaurant	Faucet	3	3	4	x		=	
11	Drinking Fountain	Offices, etc.	3/8" Valve	0.25	-	0.25	x		=	
12	Water Closet	Private	Flush Valve	6	-	6	x		=	
13	Water Closet	Private	Flush Tank	3	-	3	x		=	
14	Lavatory	Private	Faucet	0.75	0.75	1	x		=	
15	Bathtub	Private	Faucet	1.5	1.5	2	x		=	
16	Shower Stall	Private	Mixing Valve	1.5	1.5	2	x		=	
17	Kitchen Sink	Private	Faucet	1.5	1.5	2	x		=	
18	Laundry Trays (1 to 3)	Private	Faucet	2.25	2.25	3	x		=	
19	Combination Fixture	Private	Faucet	2.25	2.25	3	x		=	
20	Dishwashing Machine	Private	Automatic	-	1	1	x		=	
21	Laundry Machine (8 lb)	Private	Automatic	1.5	1.5	2	x		=	
22	Laundry Machine (8 lb)	Public/General	Automatic	2.25	2.25	3	x		=	
23	Laundry Machine (16 lb)	Public/General	Automatic	3	3	4	x		=	
						Total WSFUs for Building			=	

Irrigation System Demand: _____ gpm

Consult Table N, O, and P for Meter and Tap Sizing.

Applicant Signature: _____

Printed Name and Date: _____

Phone Number: _____

Size of Meter: [ ]

Size of Service Line: [ ]

Section 890.APPENDIX A PLUMBING MATERIALS, EQUIPMENT, USE RESTRICTIONS AND APPLICABLE STANDARDS

Table N Water Supply Fixture Units (W.S.F.U.) for a Supply System with Flush Tanks

Water Supply Fixture Units (W.S.F.U.) for a Supply System with Flush Tanks

W.S.F.U.	Demand (GPM)	Pipe Size (Inches)	Pressure Loss (PSI/100' of Pipe)	Velocity (Ft./Sec.)	Meter Size (Inches)
2	2	½"	4.2	2.7	5/8"
4	3	½"	8.7	4.2	5/8"
6	5	½"	22.5	7.0	5/8"
8	6.5	3/4"	6.3	4.3	5/8"
10	8	3/4"	9.0	5.4	3/4"
12	9.2	3/4"	11.5	6.1	3/4"
14	10.4	3/4"	15.0	6.9	3/4"
16	11.6	3/4"	18.0	7.7	3/4"
20	14	1"	7.2	5.6	3/4"
25	17	1"	10.0	6.6	3/4"
30	20	1"	13.6	8.0	1"
35	22.5	1 1/4"	5.8	5.7	1"
40	25	1 1/4"	7.0	6.3	1"
45	27	1 1/4"	8.2	6.9	1"
50	29	1 1/4"	9.5	7.4	1"
60	32	1 1/2"	5.0	5.8	1 1/2"
70	35	1 1/2"	6.2	6.4	1 1/2"
80	38	1 1/2"	7.0	7.2	1 1/2"
90	41	1 1/2"	8.0	7.5	1 1/2"
100	43.5	1 1/2"	8.7	7.8	2"
120	48	2"	2.7	5.0	2"
140	52.5	2"	3.1	5.4	2"
160	57	2"	3.6	5.8	2"
180	61	2"	3.9	6.1	2"
200	65	2"	4.5	6.6	2"
225	70	2"	5.2	7.1	2"
250	75	2"	6.0	7.7	3"
275	80	2 ½"	2.6	5.5	3"
300	85	2 ½"	2.9	5.8	3"
350	95	2 ½"	3.5	6.5	3"
400	105	2 ½"	4.2	7.1	3"
450	115	2 ½"	5.0	8.0	3"

Section 890.APPENDIX A PLUMBING MATERIALS, EQUIPMENT, USE RESTRICTIONS AND APPLICABLE STANDARDS

Table N Water Supply Fixture Units (W.S.F.U.) for a Supply System with Flush Tanks

Water Supply Fixture Units (W.S.F.U.) for a Supply System with Flush Tanks (Continued)

W.S.F.U.	Demand (GPM)	Pipe Size (Inches)	Pressure Loss (PSI/100' of Pipe)	Velocity (Ft./Sec.)	Meter Size (Inches)
500	125	3"	2.3	5.9	3"
600	145	3"	3.1	6.8	4"
750	170	3"	4.0	8.0	4"
1000	208	4"	1.5	5.7	4"
1250	240	4"	1.9	6.4	4"
1500	267	4"	2.3	7.0	4"
1750	294	4"	2.8	7.8	4"
2000	320	6"	0.36	3.7	6"

Agency Notes: Where a unit of local government or the community public water supply does not require separate water service lines for irrigation or similar systems that are likely to impose continuous demands (e.g., lawn sprinkler or air conditioning systems), the following rule applies: estimate the continuous demand (in gallons per minute) for such outlets/systems separately from the intermittent demand from the above fixtures, and add this amount to the demand of the fixtures (in gallons per minute).

Meter and meter yoke sizes shown in this table shall apply only to those jurisdictions or governmental units where local ordinances or community public water supply requirements do not prescribe specific sizes of meters and/or meter yokes. Where local ordinances or community public water supply requirements cover such sizing, those requirements shall be followed.

(Source: Amended at 28 Ill. Reg. 4215, effective February 18, 2004)

Section 890.APPENDIX A PLUMBING MATERIALS, EQUIPMENT, USE RESTRICTIONS AND APPLICABLE STANDARDS

Table O **Water Supply Fixture Units (W.S.F.U.) for a Supply System with Flushometer**

Water Supply Fixture Units (W.S.F.U.) for a Supply System with Flushometer

W.S.F.U.	Demand (GPM)	Pipe Size (Inches)	Pressure Loss (PSI/100' of Pipe)	Velocity (Ft./Sec.)	Meter Size (Inches)
10	27	1 1/4"	8.3	6.8	3/4"
12	28.6	1 1/4"	9.2	7.2	3/4"
14	30.2	1 1/4"	10.0	7.9	3/4"
16	31.8	1 1/4"	11.0	8.0	3/4"
20	35	1 1/2"	6.0	6.4	3/4"
25	38	1 1/2"	7.0	6.9	1"
30	41	1 1/2"	8.0	7.4	1"
35	43.8	1 1/2"	8.8	8.0	1"
40	46.5	2"	2.5	4.7	1"
45	49	2"	2.7	5.1	1"
50	51.5	2"	2.9	5.4	1 1/2"
60	55	2"	3.4	5.8	1 1/2"
70	58.5	2"	3.7	6.0	1 1/2"
80	62	2"	4.0	6.2	1 1/2"
90	64.8	2"	4.6	6.5	1 1/2"
100	67.5	2"	5.0	6.8	1 1/2"
120	72.5	2"	5.6	7.2	2"
140	77.5	2"	6.3	8.0	2"
160	82.5	2 ½"	2.7	5.7	2"
180	87	2 ½"	3.0	6.1	2"
200	91.5	2 ½"	3.4	6.4	2"
225	97	2 ½"	3.7	6.8	2"
250	101	2 ½"	4.0	7.1	3"
275	106	2 ½"	4.2	7.3	3"
300	110	2 ½"	4.6	7.6	3"
350	119	3"	2.1	5.5	3"
400	126	3"	2.3	5.9	3"
450	138	3"	2.7	6.3	3"
500	145	3"	3.0	6.8	3"
600	160	3"	3.6	7.4	4"

Section 890.APPENDIX A PLUMBING MATERIALS, EQUIPMENT, USE RESTRICTIONS AND APPLICABLE STANDARDS

Table O **Water Supply Fixture Units (W.S.F.U.) for a Supply System with Flushometer**

Water Supply Fixture Units (W.S.F.U.) for a Supply System with Flushometer (Continued)

W.S.F.U.	Demand (GPM)	Pipe Size (Inches)	Pressure Loss (PSI/100' of Pipe)	Velocity (Ft./Sec.)	Meter Size (Inches)
750	178	4"	1.1	4.7	4"
1000	208	4"	1.5	5.6	4"
1250	240	4"	1.9	6.4	4"
1500	267	4"	2.3	7.0	4"
1750	294	4"	2.8	7.8	4"
2000	321	6"	0.4	3.7	6"

Agency Notes: Where a unit of local government or the community public water supply does not require separate water service lines for irrigation or similar systems that are likely to impose continuous demands (e.g., lawn sprinkler or air conditioning systems), the following rule applies: estimate the continuous demand (in gallons per minute) for such outlets/systems separately from the intermittent demand from the above fixtures, and add this amount to the demand of the fixtures (in gallons per minute).

Meter and meter yoke sizes shown in this table shall apply only to those jurisdictions or governmental units where local ordinances or community public water supply requirements do not prescribe specific sizes of meters and/or meter yokes. Where local ordinances or community public water supply requirements cover such sizing, those requirements shall be followed.

(Source: Amended at 28 Ill. Reg. 4215, effective February 18, 2004)

Section 890.APPENDIX A PLUMBING MATERIALS, EQUIPMENT, USE RESTRICTIONS AND APPLICABLE STANDARDS

TABLE P Demand at Individual Water Outlets

Demand at Individual Water Outlets

Type Of Outlet	Demand (g.p.m.)
Ordinary Lavatory Faucet	2.0
Self Closing Lavatory Faucet	2.5
Sink Faucet, 3/8" or ½"	4.5
Sink Faucet, 3/4"	6.0
Bath Faucet, ½"	5.0
Shower Head, ½"	5.0
Laundry Faucet, ½"	5.0
Ballcock in Water Closet Flush Tank	3.0
1" Flush Valve (25 psi flow pressure)	35.0
1" Flush Valve (15 psi flow pressure)	27.0
3/4" Flush Valve (15 psi flow pressure)	15.0
Drinking Fountain Jet	0.75
Dishwashing Machine (domestic)	4.0
Laundry Machine (8 to 16 pounds)	4.0
Aspirator (operating room or laboratory)	2.5

(Source: Amended at 28 Ill. Reg. 4215, effective February 18, 2004)

Section 890.APPENDIX A PLUMBING MATERIALS, EQUIPMENT, USE RESTRICTIONS AND APPLICABLE STANDARDS

Table Q Allowance in Equivalent Length of Pipe for Friction Loss in Valves and Fittings

Allowance in Equivalent Length of Pipe for Friction Loss in Valves and Fittings

The following applies to all types of material approved for potable water distribution:

Equivalent Feet of Pipe for Various Pipes Sizes

Valve or Fitting	½"	3/4"	1"	1 1/4"	1 1/2"	2"	2 ½"	3"
45° ell (wrought)	0.5	0.5	1.0	1.0	2.0	2.0	3.0	4.0
90° ell (wrought)	0.5	1.0	1.0	2.0	2.0	2.0	2.0	3.0
Tee, Run (wrought)	0.5	0.5	0.5	0.5	1.0	1.0	2.0	-
Tee, Branch (wrought)	1.0	2.0	3.0	4.0	5.0	7.0	9.0	-
45° ell (cast)	0.5	1.0	2.0	2.0	3.0	5.0	8.0	11.0
90° ell (cast)	1.0	2.0	4.0	5.0	8.0	11.0	14.0	18.0
Tee, Run (cast)	0.5	0.5	0.5	1.5	1.0	2.0	2.0	2.0
Tee, Branch (cast)	2.0	3.0	5.0	7.0	9.0	12.0	16.0	20.0
Compression Stop	13.0	21.0	30.0	-	-	-	-	-
Globe Valve	-	-	-	53.0	66.0	90.0	-	-
Gate Valve	-	-	1.0	1.0	2.0	2.0	2.0	2.0