



HYDRANT SITE FLOW / FIRE LINE / DOMESTIC/ IRRIGATION CONNECTION DEMAND FORM

Date: \_\_\_\_\_ Name: \_\_\_\_\_ Project Tracker ID (if applicable): \_\_\_\_\_

Property Address: \_\_\_\_\_
Name of Building or Business: \_\_\_\_\_
Legal Description: \_\_\_\_\_
Property use: [ ] Commercial [ ] Multi-family (total units \_\_\_\_\_) [ ] Mixed use\* (Commercial & Multi-family) [ ] Irrigation only (units to be sprinkled \_\_\_\_\_) (total units \_\_\_\_\_)

HYDRANT SITE FLOW DATA -
Total fire flow required for this site: \_\_\_\_\_ GPM @ 20 PSI Minimum # of required fire hydrants: \_\_\_\_\_
List ALL hydrants approved for use by the Fire Department to meet the fire flow (by Denver Water hydrant #):
If the hydrant is a new hydrant and a hydrant # has not been assigned, please identify the hydrant as "New" and reference location on site plans
(1) \_\_\_\_\_ (4) \_\_\_\_\_ (7) \_\_\_\_\_
(2) \_\_\_\_\_ (5) \_\_\_\_\_ (8) \_\_\_\_\_
(3) \_\_\_\_\_ (6) \_\_\_\_\_ (9) \_\_\_\_\_

FIRE LINE SPRINKLER DEMAND DATA - all sizes View sheet 2 for flow capacities per size
# of square feet to be sprinkled: \_\_\_\_\_ # of stories to be sprinkled: \_\_\_\_\_
Required sprinkler flow: \_\_\_\_\_ gpm Requested size: \_\_\_\_\_
Required residual pressure: \_\_\_\_\_ psi Please check the box if there is a redundant fire line: [ ]
Please check the box if fire pump is required: [ ] Please check the box if this fire sprinkler line is a NFPA 13D: [ ]
Name of the street(s) where the main is to be tapped is: \_\_\_\_\_

DOMESTIC ONLY DEMAND DATA - all sizes View sheet 2 for meter capacities
Tap size requested: \_\_\_\_\_ Domestic maximum load: \_\_\_\_\_ gpm
\* For mixed use only, please provide the following: Commercial area: \_\_\_\_\_ square feet
If this tap will also serve irrigation, please provide the following:
Area of irrigation only: \_\_\_\_\_ square feet Irrigation maximum load: \_\_\_\_\_ gpm
Concurrent irrigation/domestic use: [ ] yes [ ] no
Name of the street where the main is to be tapped is: \_\_\_\_\_

IRRIGATION DEMAND DATA - use this section only if irrigation will be served by its own separate tap
View sheet 2 for meter capacities
Tap size: \_\_\_\_\_ Area of irrigation only: \_\_\_\_\_ square feet
Maximum load: \_\_\_\_\_ gpm
If the area of irrigation is over 43,560 square feet refer to denverwater.org/DoingBusinesswithUs/PlanReviews/IrrigationPlanSubmittal/
Name of the street where the main is to be tapped is: \_\_\_\_\_

For questions, please contact Sales Administration @ 303-628-6100

revision date: 08-2021

## Guidelines for Service Line and Meter Capacities

Service Flows from DWD Internal Study of Various Code  
 Capacities Meter Flows from AWWA Manual M-22  
 updated 3/25/21 JG

### Tap/Meter/Service Sizing - Maximum DW Rated Velocity is 10 ft/s

Diameter Inches	Maximum Flow @ Velocity 10 ft/s (1,2,4)
0.75	13.8
1	24.5
1.5(3)	55.1
2	97.9
3	220.2
4	391.5
6	880.8
8	1,565.9
10	2,446.7

All flows in gallons per minute (gpm)

- (1) Uniform Plumbing Code 610.12: Maximum velocities shall not exceed 8 ft/s
- (2) International Plumbing Code Figure E103.3(2): Fluid velocities in excess of 5 to 8 ft/s are not usually recommended
- (3) Only Badger meters are manufacturer rated to deliver more than 50 gpm for 1.5"
- (4) AWWA Manual M-22 Chapter 5: Velocities greater than 10 ft/sec should be avoided

### Backflow Preventer Sizing - Maximum Rated Velocity is 7.5 ft/s (1)

Diameter Inches	BFP Maximum	Meter/Service Maximum	IPC Low Maximum	IPC High Maximum	Velocity in ft/s
	7.5	10	5	8	
0.75	10.3	13.8	6.9	11.0	Flows in gpm
1.00	18.4	24.5	12.2	19.6	
1.25	28.7	38.2	19.1	30.6	
1.50	41.3	55.1	27.5	44.0	
2.00	73.4	97.9	48.9	78.3	
2.50	114.7	152.9	76.5	122.3	
3.00	165.2	220.2	110.1	176.2	
4.00	293.6	391.5	195.7	313.2	
6.00	660.6	880.8	440.4	704.7	
8.00	1,174.4	1,565.9	783.0	1252.7	
10.00	1,835.1	2,446.7	1,223.4	1,957.4	

- (1) Please refer to the manufacturer specification sheet for the specific make and model of the chosen backflow preventer for additional information on design criteria.

### Recommended Flow Capacity for Automatic Sprinkler Connection Taps:

Diameter Inches	Flow @ 15 ft/s (1)	Flow @ 20 ft/s (2)	Allowed Combination Domestic Tap Sizes at >= 4:1 Ratio or < 8:1 Ratio (ASC: DOM)	
0.75	21 gpm	28 gpm	NA	
1	37 gpm	49 gpm	NA	
1.5	83 gpm	110 gpm	NA	
2	147 gpm	195 gpm	NA	
3	330 gpm	441 gpm	NA	(3" tapping saddle is not available)
4	587 gpm	780 gpm	0.75"	1"
6	1,322 gpm	1,760 gpm	1"	1.5"
8	2,350 gpm	3,140 gpm	1.5"	2"
10	3,671 gpm	4,895 gpm	1.5"	2"
12	5,287 gpm	7,050 gpm	2"	3"

- (1) From NFPA 20 tables 4.28(a) and 4.28(b), water flow velocity should be less than 15 ft/s to limit turbulent flow  
 (2) Maximum recommended flow velocity w/o fire pump is 20 ft/s