Servicing for ARU's

Municipal services must be available on the lot for an Additional Residential Unit (ARU) to be permitted and only one service from the municipal main is permitted per lot. Water service pipe must be sized in accordance with the Ontario Building Code (OBC) and shall include the number of fixture units for both the existing dwelling and all ARU's. A shut-off valve must be provided for each dwelling unit.

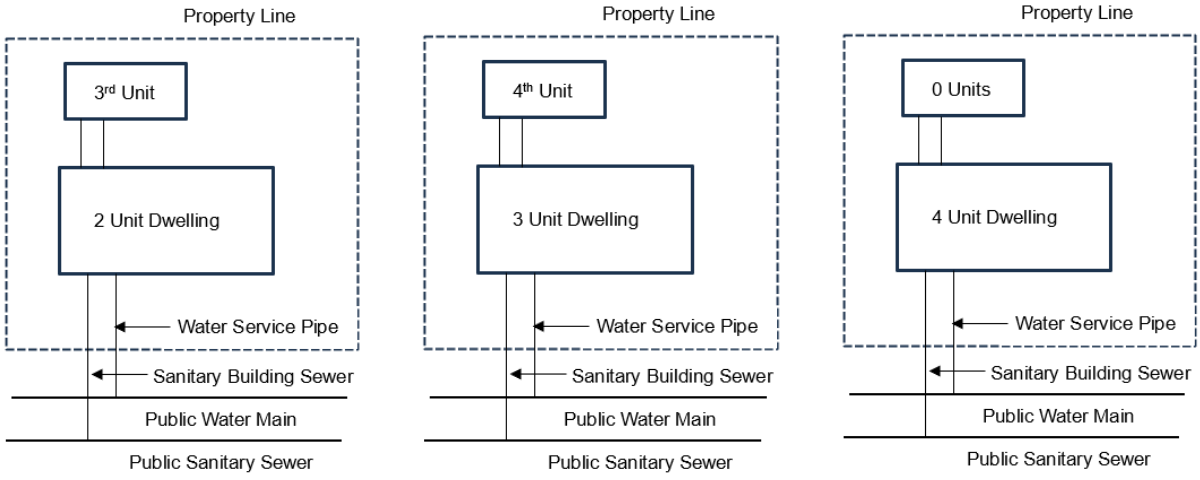
OBC 7.1.2.4. states that piping in any building connected to a public service must be connected separately from the piping of any other building, except that an ancillary building on the same property may be served by the same service. No plumbing serving a dwelling unit shall be installed in or under another unit of the building unless the piping is located in a tunnel, pipe corridor, common basement or parking garage, so that it is accessible for servicing along its length without encroachment onto a private living space. The exception being a unit located above another unit.

Main Building with two, three or four units:

- If not more than one unit is above another unit, plumbing can be in the lower unit without a tunnel, pipe corridor or common basement service room.
- If more than one unit is above another unit, plumbing is required to be in a tunnel, pipe corridor or common basement service room.
- If units are beside each other and plumbing is installed in or under another unit, a common space or accessible pipe corridor is required.

And if one unit (3rd or 4th unit) is in a detached building:

- The detached unit can be serviced directly from the main building, however if the plumbing encroaches onto any private living space from the main building, the piping must be in a common space or accessible pipe corridor.



Water Service and Water Distribution Pipe Sizing

Project Information:		
Address:	Date:	Record #:

PART 1 - Hydraulic Load (Fixture Unit Calculation)

Fixture or Device	Supply pipe size	Fixture Units	Quantity	Total Hydraulic Load (Fixture Units x Quantity)
Bathroom Group with 6 LPF or less flush tank*		3.6		0
Rough-in Bathroom Group with 6 LPF or less		3.6		0
Clothes washer 3.5 kg	½"	1.4		0
Dishwasher (domestic)	3/8"	1.4		0
Hose bibb (1/2") and combination hot/cold	½"	2.5		0
Hose bibb (3/4")	¾"	3.0		0
Lavatory 8.3 l/m or less	3/8"	0.7		0
Bidet	3/8"	2.0		0
Shower head 9.5 l/m or less per head	½"	1.4		0
Shower, spray, multi-head, fixture unit per head	½"	1.4		0
Sink, bar	3/8"	1.0		0
Sink, kitchen, domestic, 8.3 l/m or less	3/8"	1.4		0
Sink, laundry (1 or 2 compartments)	3/8"	1.4		0
Water Closet (6 LPF or less with flush tank)	3/8"	2.2		0
Other:				0
	Total Hydraulic Load based on Fixture Units			0

(Fixture Units from Table 7.6.3.2.A, of Division B of the OBC where both hot and cold water is supplied to fixtures)

* Bathroom group consists of 1 water closet, 1 basin (lavatory), and 1 bathtub or 1 shower.

PART 2 - Sizing of Water Service Pipe

Water Pipe Size	Water Velocity (m/s)			
	2.4		1.5	3.0
	Hydraulic Load (Fixture Units)			
	Two dwelling units	**One dwelling unit**		
1/2"	Up to 7	Up to 7	4	8
3/4"	7 to 16	7 to 26	9	21
1"	16 to 31	26 to 31	18	43
1¼"	31 to 57	31 to 57	30	83

(Above information obtained from Table 7.6.3.4, of Division B of the OBC)

PART 3 – Design of Water Service Pipe

Allowable Length (m):	Pressure Range (psi):
Total Hydraulic Load (fixture units): 0	Water Meter Size: ¾" water service = ¾" Water Meter 1" Water Service = ¾" Water Meter 1 ¼" Water Service = 1" Water Meter
Water Service Pipe Size (Table 7.6.3.1.)	
Existing: / Proposed:	

(Above information obtained from Table A 7.6.3.1 and Table 7.6.3.2. of Division B of the OBC)

In accordance with Sentence 7.6.3.4.(6), in a house with **only one dwelling unit**, the water service pipe is permitted to be a minimum of ¾ in. in size provided, a minimum ¾ in. water supply piping located in the basement or lower level is extended to the base of every hot and cold riser that serves a maximum of one bathroom group and to the last water supply branch serving any basement bathroom group, fixture supply or hose bibb, and the total hydraulic load is not more than 26 fixture units, using the values given in Table 7.6.3.2.A.

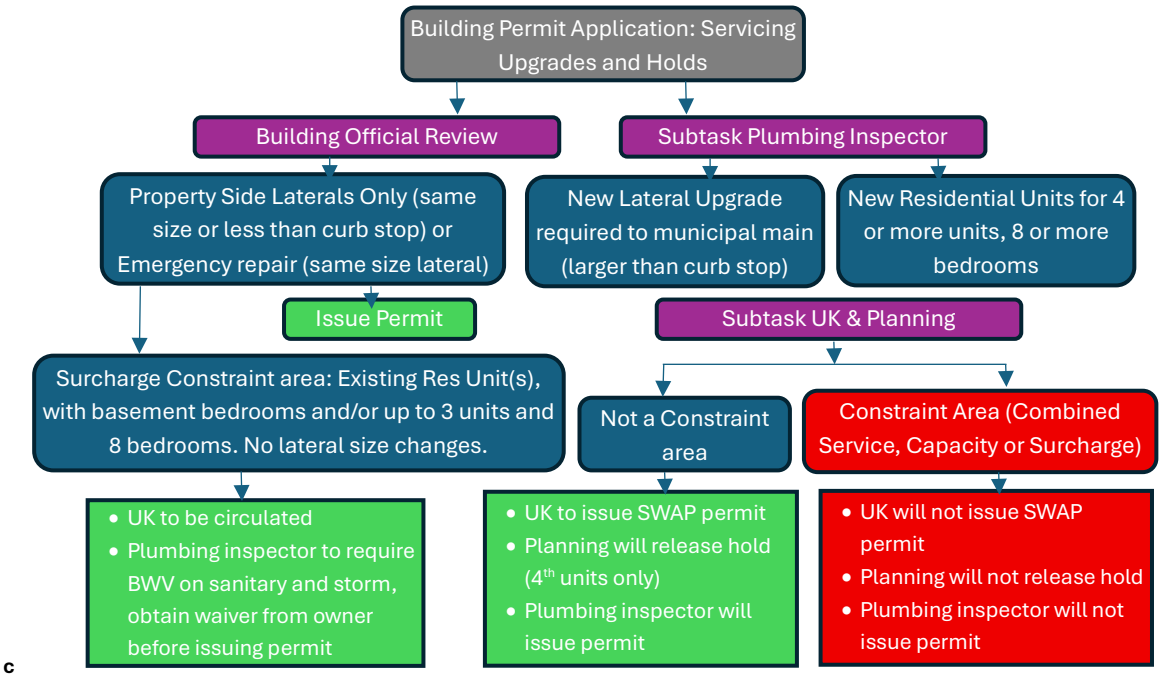
In accordance with 7.6.3.4.(5), in residential buildings containing **two dwelling units**, the water system may be sized in accordance with the tables in Part 1 and Part 2 of this form, provided, the minimum water pressure at the entry to the building is 200 kPa, the total maximum length of the water system is 90 m, and the hydraulic loads for maximum separate demands on water distribution system piping are not less than 100% of the total hydraulic load of the fixture units given in Tables 7.6.3.2.A, 7.6.3.2.B, 7.6.3.2.C and 7.6.3.2.D, of Division B, of the OBC for private use.

Designer Information		
Name:	BCIN:	Signature:

Table A-7.6.3.1.
Pipe Size Based on the Number of Fixtures Units Served[1]

Water Service, inches	Water Distribution System, inches	Maximum Allowable Length, m															
		12	18	24	30	46	61	76	91	122	152	183	213	244	274	305	
Pressure Range		Number of Fixture Units Served															
200 to 310 kPa (30 to 45 psi)																	
¾”	½”	6	5	4	3	2	1	1	1	0	0	0	0	0	0	0	
¾”	¾”	18	16	14	12	9	6	5	5	4	4	3	2	2	2	1	
¾”	1”	29	25	23	21	17	15	13	12	10	9	7	6	6	6	6	
1”	1”	36	31	27	25	20	17	15	13	12	10	8	6	6	6	6	
1 ½”	1 ¼”	90	68	57	48	38	32	28	25	21	18	15	12	12	11	11	
1 ½”	1 ½”	151	124	105	91	70	57	49	45	36	31	26	23	21	20	20	
2”	1 ½”	151	151	132	110	80	64	53	46	38	32	27	23	21	20	20	
2”	2”	359	329	292	265	217	185	164	147	124	96	70	61	57	54	51	
2 ½”	2 ½”	445	418	390	370	330	300	280	265	240	220	198	175	158	143	133	
311 to 413 kPa (46 to 60 psi)																	
¾”	½”	8	7	6	5	4	3	2	2	1	1	1	0	0	0	0	
¾”	¾”	21	21	19	17	14	11	9	8	6	5	4	4	3	3	3	
1”	1”	42	42	41	36	30	25	23	20	18	15	12	10	9	8	8	
1 ½”	1 ¼”	83	83	83	83	66	52	44	39	33	29	24	20	19	17	16	
1 ½”	1 ½”	151	151	151	151	128	105	90	78	62	52	42	38	35	32	30	
2”	1 ½”	151	151	151	151	150	117	98	84	67	55	42	38	35	32	30	
2”	2”	359	359	359	359	359	318	280	250	205	165	142	123	110	102	94	
2 ½”	2 ½”	611	611	610	580	535	500	470	440	400	365	335	315	285	267	250	
Over 413 kPa (60 psi)																	
¾”	½”	8	8	7	6	5	4	3	3	2	1	1	1	1	1	0	
¾”	¾”	21	21	21	21	17	13	11	10	8	7	6	6	5	4	4	
1”	1”	42	42	42	42	38	32	29	26	22	18	14	13	12	12	11	
1 ½”	1 ¼”	83	83	83	83	83	74	62	54	43	34	26	25	23	22	21	
1 ½”	1 ½”	151	151	151	151	151	151	130	113	88	73	51	51	46	43	40	
2”	1 ½”	151	151	151	151	151	151	142	122	98	82	64	51	46	43	40	
2”	2”	359	359	359	359	359	359	359	340	288	245	204	172	153	141	129	
2 ½”	2 ½”	611	611	611	611	611	611	610	570	510	460	430	404	380	356	329	
Column 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	

Notes to Table A-7.6.3.1.:
(1) Where total fixture unit values exceed those given in this Table, the system must be designed according to a detailed engineering design method.
(2) BCIN qualified designers can design within the parameters of the table with Plumbing all buildings qualification
(3) **Guidance:**
-For One and Two Units: Fill out Tables for Part 1 and Part 3, with reference to Hydraulic Loads and sizing from Part 2
-For more than Two Units: Fill out Tables for Part and Part 3, with reference to the row found in Table A-7.6.3.1.
(please highlight row for clarity).


Building Permit Application: Servicing Upgrades and Holds
Building Official Review
Subtask Plumbing Inspector
Property Side Laterals Only (same size or less than curb stop) or Emergency repair (same size lateral)
New Lateral Upgrade required to municipal main (larger than curb stop)
New Residential Units for 4 or more units, 8 or more bedrooms
Issue Permit
Subtask UK & Planning
Surcharge Constraint area: Existing Res Unit(s), with basement bedrooms and/or up to 3 units and 8 bedrooms. No lateral size changes.
Not a Constraint area
Constraint Area (Combined Service, Capacity or Surcharge)
UK to be circulated
Plumbing inspector to require BWV on sanitary and storm, obtain waiver from owner before issuing permit
UK to issue SWAP permit
Planning will release hold (4th units only)
Plumbing inspector will issue permit
UK will not issue SWAP permit
Planning will not release hold
Plumbing inspector will not issue permit

c