

TABLE 3.1.1: COMPARISON OF WATER DISTRIBUTION SYSTEM DESIGN STANDARDS FOR VARIOUS ALBERTA MUNICIPALITIES

	Grande Prairie (Recommended)	Grande Prairie (Current)	Provincial	Edmonton	St. Albert	Spruce Grove	Parkland County	City of Westaskiwin	City of Red Deer	RM Wood Buffalo	Strathcona County	Ft. Saskatchewan	City of Leduc	Lloydminster	Drayton Valley	
Minimum pipe size (mm)																
Residential-One hydrant	150	150		150	150	200	200	150	150	200	150	150	150	150	150	
Residential-One Hydrant				200					200		200	200				
Multi-family	200	200								250				200	200	
Commercial	250	250				250	250		300	300	300	250		200	250	
Industrial	250	250				250	300		200	300	300	250		200	250	
Maximum length unlooped																
Watermain (m)	100	100		200 (150mm)						300	120					
Number of Lots					20		20	20	30							
Minimum pressure (kPa)																
Peak Hour	280	280		280	276	280	310	276	300	280	350	280	280	280	276	
Max. Day + Fire Flow	140	140	150	140	140		140	140	150	150	140	140	140	140	276	
Maximum pressure (kPa)	690	690	700								700			140	138	
Friction factor "C"																
PVC									140							
AC									130							
DI									80 to 100							
All Pipes	140	140						120			140				140	
200mm and Smaller					100	100										
Larger than 200mm					120	120										
Water Demand																
Residential																
Residential Average Day (L/cap/d)	275	275		350	350		350	395		360	375	300	360		454	
Maximum Day Peaking Factor	2.0	2.0			2.0		2.0	1.8		2.0	2.0	2.0	2.0		1.8	
Peak Hour Peaking Factor	3.0	3.0			4.0	725 L/d	3.0	3.0	750L/Cap/d	3.0	3.0	3.0	4.0		3.0	
Non-residential Water Demand						1100 L/d			1500L/Cap/d							
Industrial (L/ha/d)		10,000					30 Equivalent People/Ha.		0.2L/s/Ha	30 equivalent People/Ha			16.875			
Light Industrial (L/ha/day)	10,000															
Heavy Industrial (L/ha/day)	20,000															
Highway Commercial/Industrial(L/ha/d)		26,000					37 Equivalent People/Ha.			37 equivalent people/Ha			22,500			
Commercial																
General Commercial (L/ha/day)	20,000															
Highway commercial (L/ha/day)	26,000															
Institutional		30,000														
School (L/ha/day)	20,000															
Hospital (L/ha/day)	30,000															
Maximum Day Peaking Factor	1.5	1.5														
Peak Hour Peaking Factor	2.0	2.0														
Population Density (persons/ha)	RR=35 RL=35 RG=40 RT=83.2 RM=118 RH=198.4	RR=32 RL=80 RG=64 RT=83.2 RM=118.4 RH=198.4		RF1=96 RF2=170 RF3=116 RF4=102 RF5=133 RA7=255				R1=95 R2=105 R3=230 R4=250		25>10Q <sup>-0.45</sup> >2.5						R1=95 R2=105 R3=230 R4=250
Fire Flows (L/s)	Low Density Res=95 Townhouse/Local Comm./ Mobile Home Park=150 Walk Up Apt/Medium Density Res./Transitional Res=185 Industrial/High Density Res./ Highway Comm.=225 Institutional = 250	Low Density Res=95 Townhouse/Local Comm./ Mobile Home Park=150 Walk Up Apt/Medium Density Res./Transitional Res=185 Industrial/High Density Res./ Highway Comm.=225	Fire Underwriter Survey Recommended Standards	School=300 Shopping Centre=300 Furthest from Source=100	Fire Underwriter Survey Recommended Standards	High Value Property 300	Single Family Res.=60 Multi-Family Res.=90 Walk-Up Apartment=115 Institutional=90 Commercial=190 Light Industrial=230	Fire Underwriter Survey Recommended Standards	Redential=75 All Others (Fire Underwriter Survey Recommended Standards)	Residential=84 to100 Multi-family Res.=134 Walk-Up Apartment=200 School=167 to317 Institutional=100 Commercial=184 to234 Light industrial=150 to184	Res.=Fire Underwriter Survey recommende Standards) School=250 Shopping Centre=250 Industrial=250	Residential=76 Multi-family=114 to 227 Institutional=265 Commercial=265	Residential=115	Residential=60 Light Industrial=90 Commercial=190 Institutional=90	Res.= 61 Townhouse=91 Walkup Apt.=152 School=91 Commerical=190 Industrial=227	
Hydrant Spacing (m)																
Residential	150 Radius	180		150	150		150	150	180		150			150		
Multi-Family					120		120		120							
Any Land Use																
All Other Land Use	90	90		90			90	90			90		150	120		

NOTE  
 1. Blank spaces indicate that information is non-existent or unavailable.  
 2. Institutional land use includes church, recreation complex, public assembly place and hospital.

LEGEND  
 mm=millimeter                      Res =residential  
 kpa=kilopascal                      Apt = apartment  
 L/cap/d=Litre per capita per day  
 L/ha/d=Litre per hectare per day  
 L/s=Litre per second  
 ha=hectare  
 m=metre