

Subdivision and Servicing Bylaw

Schedule B: Comparison to MMCD

Section	Section Name	Old Bylaw Ref.	Difference From Old Bylaw	Generally Matches MMCD	Difference To MMCD/Commentary
Section 2: Water Distribution					
			Section D.3 Described in Approved Products List Schedule E & MMCD Specifications		Requirement of a water model for complex systems and requirement approvals for large diameter watermains
	2.1 General		D.4 described in MMCD Specifications	No	
	2.2 Metering	-	New Section	No	Meters required for strata and bare land strata lots or as directed by the City Engineer
	2.3 Per Capita Demand	D.2.2	Decrease in Demands, Old bylaw ADD 1000 L/capita/day MDD 2100 L/Capita/day PHD: 2XMDD	No	Average Day Demand (ADD): 500L/Capita/day, Maximum Daily Demand (MDD): 2XADD, Peak Hour Demand (PHD): 3XADD, allowance for demand criteria to be modified with approval from City Engineer
	2.4 Non-Residential Demand	D.2.2	More Clarity regarding Non-Residential Demands	Yes	
	2.5 Fire Flows	D.2.3	Old Bylaw 3640 L/min (60L/s) minimum New bylaw 60 - 225 L/s depending on development type	Yes	
	2.6 Design Flows		No Change	Yes	
	2.7 Water Pressure	D.2.4	Old bylaw had no limit on maximum pressure. New provides maximum pressure limit 850kpa. New bylaw min pressure under PHD 300kpa, Old bylaw Min pressure 280 kpa under PHD. Minimum fire flow pressure requirement now 150kpa (previously 140 Kpa).	Yes	
	2.8 Hydraulic Design	D.2.1	More Detail provided around Hazen Williams coefficients for various materials. Previously only used C=120. Maximum velocity requirement is 3.5m/s (old Bylaw 4.0m/s) under fire flow scenarios.	Yes	
	2.9 Minimum Pipe Diameter	D.2.5	Old Bylaw min. 150mm dia. New provides more detail depending on main type and service connection. 200mm dia. Minimum for distribution mains.	Yes	
	2.10 Dead Ends	D.2.9	new section with more detail	No	a. Where dead ends are unavoidable and approved by the City, sizes for blow offs and blow downs are to be as indicated by MMCD with additional provisions for erosion control and protection of receiving environments. B. In no instance shall a permanent dead end exceed 200m in Length
	2.11 Minimum Depth of Cover	D.2.13	No major change	No	Minimum Cover shall be 2.4m and maximum cover 3.0m and require approval from City Engineer.
	2.12 Grade	D.2.6	More Detail provided for specific minimum (0.1%) and maximum grades (20%)	Yes	
	2.13 Corrosion Protection	D.2.18	No Major change	Yes	
	2.14 Valves	D.2.8	clarity added to number of valves required at fittings	Yes	With addition to clarity on Number of Valves at fittings and other required locations.
	2.15 Hydrants	D.2.7	no major difference (Approved products moved to Schedule E)	Yes	with additional requirements related to locations and access requirements
	2.16 Blow Offs and Blow Downs	D.2.9	no major difference	Yes	
	2.17 Test Points	-	New requirement/Section	Yes	
	2.18 Air Valves	D.2.10	No major difference. Clarity added regarding valve sizing .	Yes	
	2.19 Thrust Restraint	D.4.5	No Major difference, clarity added to Mechanical Joint restraints	Yes	Clarity on usage of mechanical joint restraints and calculations and requirement for mechanical restraints on "Lifetime service mains in case of disaster"
	2.20 Chambers	-	New Section	Yes	With additional details
	2.21 Service Connections	D.2.12	Clarity added to main stop spacing. Duplex and carriage house servicing, requirements added for backflow prevention	No	Sizing as per MMCD
	2.22 Alignments and Corridors	D.2.6/D.2.13	Curved mains are no longer permitted.	No	Curved mains are not permitted, requirement for tracer wire on PVC watermains and clarity on termination location
	2.23 Reservoirs	D.2.15	Emergency storage requirements increased to Match MMCD (25%Fire + Equalization Storage, previously 15%)	Yes	With additional details
	2.24 Pump Stations	D.2.16	No major change	Yes	With additional details
	2.25 Pressure Reducing Valve (PRV) Stations	-	New Section	Yes	with additional details
	2.26 Manuals	-	New Section Specific to Bylaw	No	New Section Specific to Bylaw
	2.28 Facility Access	-	New Section Specific to Bylaw	No	New Section Specific to Bylaw
	2.29 Cross Connection Control	-	New Section Specific to Bylaw	No	New Section Specific to Bylaw
Section 3: Sanitary Sewers					
			Section E.3 Described in Approved Products List Schedule E & MMCD Specifications		Requirement of a sewer model for complex systems, and potential for developer to be responsible for costs related to the City completing a review of downstream collection system. Onsite sewage disposal systems are not permitted.
	3.1 General		E.4 Described in MMCD Specifications	No	
	3.2 Per Capita Flows	E.2.1	Reduced flows (Old Bylaw 500 L/capita/day, new 240 L/Capita/day for metered systems, 350 L/capita/Day unmetered)	Yes	
	3.3 Non-Residential Flows	E.2.1	New Section	Yes	
	3.4 Peaking Factor	E.2.1	Revised Peaking factor calculation	Yes	
	3.5 Infiltration	E.2.1	Revised calculation with requirements for new systems and pipes above and below groundwater table	Yes	
	3.6 Design Flow	E.2.2	Revised Peaking factor, Per-Capita Flows and infiltration described in section 3.2.3, 3.3, 3.5	Yes	
	3.7 Pipe Flow Formulas	E.2.2	New Section reference manings formula, (old reference to manings formula in E.2.2)	Yes	
	3.8 Flow Velocities	E.2.2	reduced minimum velocity New bylaw 0.6m/s old bylaw 0.75m/s	Yes	
	3.9 Alignment	E.2.8/E.2.10	No major change	Yes	
	3.10 Minimum Pipe Diameter	E.2.1/E.2.3	Previously pipes 2/3 full to 3/4 full at Peak hour design flow. New bylaw d/D=80% Collector sewer minimum Size remains 200mm	Yes	
	3.11 Minimum Grade	E.2.2	Min. grades based on velocity previously based on Velocity and table in section E.2.2	Yes	Yes with additional requirement - Upstream section of residential sewer servicing a design population of 25 or less having a minimum grade of 1%
	3.12 Curved Sewer	E.2.10	more details related to Curved sewers, related to min radius (increased to 60m, old bylaw 30m), velocity and joint deflection	No	Only considered in exceptional situations and require review by City Engineer
	3.13 Depth	E.2.4	No major change	Yes	with additional considerations to Min. depth 1.5m without concrete encasement
	3.14 Manholes	E.2.5	Maximum spacing made consistent 150m, additional requirements related to hydraulic details	Yes	With additional details regarding rim placement/elevation and marking.
	3.15 Odour Control Criteria	-	New requirement/Section	Yes	with additional details
	3.16 Service Connections	E.2.7	Minimum Grades based on diam. And velocity	Yes	with additional details for inspection chambers, pumped connections and minimum grades.
	3.17 Locations and Corridors	E.2.8/E.2.9	No major change	Yes	With additional details
	3.18 Pump Stations	E.2.11	more detailed requirements to be consistent with modern pump station design requirements and to be consistent with MMCD design guidelines	Yes	with additional details
	3.19 Low Pressure Sewers	-	New Section	Yes	permitted under special circumstances
	3.20 Forcemains	E.2.11	no major change, minimum velocity 0.75m/s (previously 0.9m/s) flow calculations based on Hazen-Williams as per section 3.7.2	No	New Section Specific to Bylaw
Section 4: Stormwater Management					
			Modernized as per MMCD Design guidelines, Additional Reference to BC Acts/regulations. Focus to include protection, enhancement, maintenance and support of Aquatic and terrestrial habitat, surface water supply and groundwater sources, recreational opportunities; and community aesthetics and urban life.		
	4.1 General	F.1.3/F.2.1	Generally similar to old bylaw, additional requirements related to groundwater infiltration, onsite retention, capacity assessments of downstream infrastructure, control features to meet water quality targets.	No	with additional details related to, detention volumes, groundwater infiltration, lot grading, the City of Fernie OCP Watercourse protection development Permit Area policies
	4.2 Storm Water Control Plan	F.2.1	No major change	Yes	With clarity on Major (1:100) and Minor (1:10) System Storm's
	4.3 Major and Minor Systems	F.2.1	Additional requirement of using Hydrograph method for specific areas and limitations on the use of the Rational Method.	Yes	
	4.4 Runoff Analysis	F.2.4	Reference to BC Building code, and more general lot grading requirements. Generally similar to old bylaw.	Yes	
	4.5 Site and Lot Grading	F.2.2	new section	Yes	
	4.6 Minimum Building Elevations	-	New bylaw allows for more detailed runoff coefficient, and adjustment factors.	Yes	
	4.7 Rational Method	F.2.4	New Section/requirement	Yes	
	4.8 Hydrograph Method	F.2.1	New Section with more detail added related to pipe and channel capacities, based on manning's	Yes	With some exceptions
	4.9 Minor System Design	F.2.1	New Section with more detail added related to surface flow routing and surface flow capacity	Yes	
	4.1 Major System Design	F.2.1	New Section with discussion around detention storage, infiltration, and stormwater treatment requirements.	No	
	4.11 Runoff Controls	-	New Section related to Erosion and Sediment control with reference to Appendix A ESC checklist.	Yes	with additional details and a Bylaw Specific Appendix A ESC Checklist
	4.12 Erosion and Sediment Control (ESC)	-	New Section, Drainage pump stations should be avoided.	No	
	4.13 Drainage Pump Stations	-	New Section	Yes	
	4.14 Hydrogeological Investigation	-	New Section	No	New Section Specific to Bylaw
	4.15 Natural Watercourses	-	New Section	No	
Section 5.0 Roads					
	5.1 General	B.1		No	

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Section	Section Name	Old Bylaw Ref.	Difference From Old Bylaw	Generally Matches MMCD	Difference To MMCD/Commentary
5.2	Road Classifications	8.1.3	Previously 8 road cross sections, new bylaw has 4	No	to be read in conjunction with Schedule C Standard Detail Drawings
5.3	Cross Section Elements	-	Updated to New cross sections shown in Schedule C, as per Active Transportation Master Plan recommendations	No	Shall follow Schedule C Standard Detail Drawings
5.4	Alignments	8.3.1/8.3.2	Maximum Road Grades generally unchanged see 5.4.1 & 5.4.1a, more detail provided regarding Vertical curves.	Yes	With Grades and vertical curves Specific to Bylaw
5.5	Intersections	8.3.2	Old and New reference TAC, New details added for Curb Return requirements, and corner cuts.	Yes	
5.6	Roundabouts	-	New Section	Yes	
5.7	Railway Grade Crossings	-	New Section	Yes	
5.8	Traffic Control Devices	-	New Section	No	Traffic control devices, signs and pavement markings are to be designed in accordance with the current edition of the TAC Manual of Uniform Traffic Control Devices for Canada.
5.9	Cul-de-Sac	8.2.3	Max length old Bylaw 150m new Bylaw 200m or 250m where alternate access provided	Yes	with additional details and allowance for maximum length of 250m where alternate access is provided.
5.10	Traffic Barriers	-	New Section	Yes	Shall follow TAC Guidelines
5.11	Sidewalk and Pedestrian Crossings	8.2.5/C.14/C.2.4	New Sidewalk as per standard cross section drawings.	Yes	with reference to standard drawings and minimum widths
5.12	Bikeways	-	New Section	Yes	
5.13	Transit Facilities	-	New Section	Yes	
5.14	Driveways	-	Clarity added to number of driveways permitted, location, widths and grades.	Yes	with additional details related to the number of driveways, location, widths and grades
5.15	Clearances	-	New Section	Yes	
5.16	Underground Utility Locations	-	New section	Yes	including reference to Schedule C Standard Drawings
5.17	Pavement Structures	8.3.5	More details for pavement structure design including sidewalks and walkways	Yes	including requirement for geotechnical engineer confirmation
5.18	Bridges	-	New Section	Yes	
5.19	Hillside Standard	-	New Section, Accommodating hillside land development while minimizing environmental impacts such as disturbance of natural slopes, vegetation and watercourses. Encouragement of low speed traffic.	Yes	with comment related to maximum grades
5.20	Traffic Calming	-	New Section	No	New Section Specific to Bylaw
5.21	Street Parking	-	New Section	No	New Section Specific to Bylaw, References MMCD Section 5.20 (Street parking)
5.22	Trails	-	New Section, referencing OCP, Trails Master Plan, Standard Drawings and OCP	No	New Section Specific to Bylaw
Section 6.0 Roadway Lighting					
6.1	General		Updated to be consistent with the MMCD design guidelines for Roadway lighting. More details related to varying types of lighting (Cross walk, Street classification, intersections)	No	
6.2	Codes, Rules, Standards and Permits			Yes	
6.3	Roadway and Pedestrian Criteria			Yes	
6.4	Lighting Measurements			Yes	
6.5	Variable Lighting Criteria			Yes	with requirement for luminaires chosen from Approved Products List
6.6	Street Lighting			Yes	
6.7	Sidewalk Lighting			Yes	
6.8	Intersection Lighting			Yes	
6.9	Crosswalk Lighting			Yes	
6.10	Walkways			Yes	
6.11	Roundabout Lighting			Yes	
6.12	Tunnel Lighting			Yes	
6.13	Poles			Yes	with additional considerations for locations and finishing
6.14	Pole Foundations			Yes	
6.15	Luminaires			Yes	with direction to approved products list
6.16	Power Supply and Distribution			Yes	with additional details re: wiring and adaptive lighting systems
6.17	Design			Yes	with additional details