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# CITY OF KELOWNA

## MEMORANDUM

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**Date:** April 17, 2002  
**File No.:** Bylaw 7900  
**To:** City Manager  
**From:** Development Engineering Manager  
**Subject:** Subdivision Development & Servicing Bylaw - Revisions

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### **RECOMMENDATION**

THAT Council approve the changes to Bylaw 7900 as proposed in the following report of the Development Engineering Manager;

AND THAT staff bring back appropriate amendments to the Subdivision, Development and Servicing Bylaw so as to incorporate these changes.

### **BACKGROUND**

Council approved bylaw 7900 on November 1998. After three (3) years of working with this document, several suggestions and industry changes precipitated staff to initiate a review of the Subdivision Development & Servicing Bylaw.

The Works & Utilities Department forwarded a letter August 17, 2001 to all affected City Departments, the Urban Development Institute, the Homebuilders Association, the Southern Interior Construction Association and the Utility Companies (including the water utility companies). October 01, 2001 was established as the deadline for suggested revisions.

Suggested revisions were received from all the Works & Utilities Divisions and the Urban Development Institute. These revisions were incorporated into the existing document and circulated on November 30, 2001 and December 7, 2001 to the same City Departments and agencies as the letter of August 17, 2001.

Two meetings on December 14, 2001 and December 19, 2001 were held between a representative of the City and a representative of the Urban Development Institute to discuss all the proposed revisions. Approximately 50 items were identified requiring further information, discussion or revision. Minutes of these meetings were circulated to all concerned parties. Staff prepared a response to these concerns and subsequently the list was reduced to approximately 20 issues.

On February 21, 2002, these issues were dealt through meetings with all the Works & Utilities Divisions and a representative of the Urban Development Institute. At the end of this session, there were nine outstanding issues.

The attached revisions were forwarded to the Urban Development Institute on April 04, 2002 and as a result of their comments and further review by staff, there exists, as of April 16, 2002, five issues. These are:

1. UDI desires downhill and uphill cul-de-sac grades of 12% and 12% whereas staff's recommendation is 8% and 12%
2. UDI does not support increasing fireflow protection of 150 litres/sec from the current 90 litres/second for row housing and stacked row housing (formerly referred to as townhouses) and for apartments
3. UDI does not support the requirement of tooled lines at 150mm spacing on driveway crossings
4. UDI does not support a cul-de-sac right-of-way radius of 16 metres (UDI supports a radius of 15 metres) and does not support a cul-de-sac back-of-curb radius of 13.5 metres (UDI supports a radius of 12.5 metres)
5. UDI would like sideslope steepness on wet ponds to have the same flexibility as written in for dry ponds

Key changes to the Bylaw include:

1. allow overhead wiring to remain under certain circumstances
2. reduction in water standards due to the benefits of metering
3. require bags or caps at the end of watermains during construction to minimize debris in the water lines during construction
4. overhaul of drainage standards with reduction in minor storm standard from the equivalent 10 year storm to 5 year storm
5. cul-de-sac grades have been increased
6. all collectors are to be constructed with 100 mm of asphalt
7. if adequate infrastructure exists at the time of redevelopment of a property, then the developer will not be required to reconstruct the infrastructure in the ultimate location
8. servicing requirements for building permits will be required only when works and services are necessary to support the specific building permit
9. increasing fireflow protection of 150 litres/sec from the current 90 litres/second for row housing and stacked row housing (formerly referred to as townhouses) and for apartments

The attached information (Appendix A) outlines all the detailed changes proposed for the Bylaw. Staff will provide more information on the recommended changes and the outstanding issues at the Council meeting.

Following approval of the changes by Council, formal amendments to the Bylaw will be brought back for adoption.

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Steve Muenz, P.Eng.  
Development Engineering Manager

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John Vos, P.Eng.  
Director of Works & Utilities

## **APPENDIX A**

# SUBDIVISION, DEVELOPMENT & SERVICING BYLAW 7900

## General Descriptions of Proposed Changes

#	Category	Description	Sec
<b><u>BYLAW</u></b>			
	MMCD	Revise references of Master Municipal Construction Documents (MMCD) – to 2000 “Gold” Book Edition (replaces 1996 Red book edition).	
<b><u>Works &amp; Services Requirements Schedule 1:</u></b>			
	Sidewalk	Add note, which will state “The City Engineer may require only one sidewalk on short crescents and cul-de-sacs in all industrial zones with urban infrastructure.”	Notes
	Existing Infrastructure	Add note to table to reflect a policy change where existing urban infrastructure is scheduled to be relocated at a future date as part of the City’s twenty year Transportation Plan. If adequate infrastructure exists at the time of a redevelopment of property then the developer will not be required to put up the letter of credit, cash in lieu, or bond for the cost of relocation. Instead the costs will be incorporated into the 20-year Servicing Plan and related DCC charges.	Notes
	Overhead Wires	Add note referring to Electrical Design section allowing existing overhead Wiring to remain in certain circumstances (see Electrical below)	Notes
<b><u>WATER</u></b>			
<b><u>Design Schedule 4.1:</u></b>			
	Demand Criteria	Reduced per capita demand criteria: Average Daily flow: from 1,000 litres/capita/day to <b>900</b> Peak Daily flow : from 3,000 to <b>2,400</b> Peak hour: from 5000 to <b>4,000</b>	1.2

Fire	<ul style="list-style-type: none"> <li>Increased Apartment and Row Housing fire flow criteria from 90 litres/sec to 150 l/s</li> <li>Added 3 and 4 Plex housing classification (90 l/s)</li> <li>Added Modular/Mobile home classification (60 l/s)</li> <li>Revised “single family” category to “Single &amp; Two Dwelling Housing” for 60 l/s</li> </ul> <p>Classifications based on Zoning Bylaw definitions</p>	1.3
Network	Clarification of wording – provision of City information for design	1.5
Cover	Allow for insulating materials for watermain when minimum cover can not be achieved.	1.6
Clearances	Clarification of wording regarding watermain crossing under other underground services	1.8
Valves	City Engineer or Improvement District may request more valves in order to allow for isolation of specific sections of main	1.8
Hydrants	Add requirements for clearances from street features	1.10
Blow-off	Larger Blow-off (100mm vs. 50mm) required at ends of pipes	1.12
Thrust Blocking	Clarification of wording as to when calculations for design are required.	1.13
Connections	Clarification of wording	1.15
Pipe Alignment	Clarification of wording. Pipe bending and joint deflection clarified	1.16
Reservoirs	Reservoir Valve Chamber requirements added	1.18
Pump Stations	Miscellaneous revisions	1.19
PRV's	Add new section related to Pressure Reducing Station requirements	1.20
Manuals	Add new section related to requirements for operational and maintenance manuals	1.21
<b>CONSTRUCTION SPECIFICATIONS Schedule 5 Section S02666 – Water - Modifications to MMCD Gold Book:</b>		
Testing & Tie-in Procedures	Modifications and clarifications to Forms and procedures in appendix A.	
Miscellaneous	Miscellaneous minor changes to 2.1, 2.2, 2.3, 2.5, 2.6	
Pipe Installation	<p>Revised to require caps or bags on ends of all water pipe supplied. Earlier we were looking at video inspection but we will give opportunity for construction community to provide better installation techniques to ensure no contamination of dirt and debris within pipes. The Approved Products List Policy 266 to be amended as well</p> <p>Joint deflection permitted</p>	<p>3.6</p> <p>3.6.6</p>
Flushing...	Add requirement for confirmation of testing and disinfection	3.17 .2
Disinfection	<p>Revise to include reference to City testing and procedures</p> <p>Add reference to disinfection and flushing of reservoirs in accordance with AWWA C652</p>	<p>3.20 .2</p> <p>.3</p>
Drawings	Revised drawings: SS-W2 Water Service Connection	

		SS-W4 Hydrant SS-W7 Air Valve Assembly SS-W8a Blow-off (for mains 100mm & smaller) SS-W8b 100mm diameter Blow-off	
<b><u>SANITARY</u></b>			
	<b>Design Schedule 4.2:</b>		
	Manholes	<ul style="list-style-type: none"> <li>MH's required at any change in the radius of curvature for vertical curves.</li> <li>Clarification of where MH's required on horizontal curves – at the beginning and end of each curve. However, MH's are not required on horizontal curve changes if the pipe is located at a constant offset with curb &amp; gutter.</li> </ul>	2.4
	Depth & Cover	Maximum depth specified is 4.5m without City Engineering Auth.	2.10
	Sewer Location/ Corridors	Requirements for access in SROW's – 3m level & max. 12% grade.	2.12
	Connections	<ul style="list-style-type: none"> <li>Allow angle services to 45-degree angle.</li> <li>2 connections for commercial/ industrial lands may be allowed if authorized by City Engineer</li> <li>allow special "inserta tee" fittings for connections on existing mains</li> <li>Eliminate inspection chambers on short connections from MH's in SROW's</li> <li>Added max length of service – limited to 30m</li> </ul>	2.13 a b  c  k  n

	Lift Stations	<ul style="list-style-type: none"> <li>• Changed statement so that 5hp pumps and greater require 600 volt service. Previously stated that 600 volt required for pumps over 5 hp.</li> <li>• Clarification of wording in 8<sup>th</sup> bullet regarding cycling of motors.</li> <li>• Clarification of wording regarding exhaust fan activated by manual switch and which meets WCB.</li> <li>• Remove requirement for explosion-proof light.</li> <li>• Clarification of wording that access, ladder and platform must meet WCB.</li> <li>• Delete Crouse Hind receptacle – not needed.</li> <li>• Change words “panel mate” to Panelmate.</li> <li>• Insert following clauses: <ul style="list-style-type: none"> <li>• “Separate starter enclosures must be provided for each pump.”</li> <li>• “PLC control to be based on City of Kelowna standards.”</li> <li>• ‘Station communication to be provided via radio transmission compliant with the City’s telemetry system, and an antenna must be installed on a suitable mast or pole to ensure reliable transmission.”</li> </ul> </li> <li>• Delete requirement for “ultrasonic cleaner”</li> </ul>	2.14 c (1)  c (1)  c (7) c (8) c (9)  c (16) c (21)  C (25)
	Forcemains	Materials: Modification to sentence. Special “Plug” valves required on sewage forcemains because of corrosive environment.	2.15 (e)
	Onsite septic	Update of septic field requirements to remove reference to small lots. Continue with requirements for Restrictive Covenants as determined by the Health Officer. And continue with requirements in an Environmental Control Area or Natural Environmental/Hazardous Conditions Area, where the Owner must engage a qualified Engineer to conduct a comprehensive suitability analysis for permanent on-site disposal, for the projected cumulative development in the area.	2.18
	<b>CONSTRUCTION SPECIFICATIONS Schedule 5 - Sanitary Modifications to MMCD Gold Book:</b>		
	Video Inspection	S02731 Clarification of clause 3.18 – video inspection required - not an option.	MMCD
	Drawings	SS-G4 – revised drawing – clarification of compaction requirements	MMCD
<b><u>DRAINAGE</u></b>			
	<b>Design Schedule 4.3:</b>		
	This section has been totally re-written and expands numerous sections. Significant changes include:		

	Service Level	Reduction in design criteria for minor system (i.e. pipes) from 1:10 year (10% chance) to 1:5 year (20% chance) storm event.	2.0
	Depth	Reduced cover from 1.5m to 1.2m in travel areas	2.0
	Water Quality	New section added regarding treatment requirements	2.0
	Detention	More details and clarification of requirements for storage or infiltration facilities	4.0
	Erosion / Sed.	More details and clarifications of requirements	5.0
	<b>CONSTRUCTION SPECIFICATIONS Schedule 5 - Drainage Modifications to MMCD Gold Book:</b>		
	Storm sewers	S02721 – Delete MMCD sub-section 2.4 and 3.6.6.3	MMCD
	Manholes & CB's	S02725 – Delete 2.1.23 and 3.3.18	MMCD

## **HIGHWAYS (ROADS)**

	<b>Design Schedule 4.4:</b>		
	General	<ul style="list-style-type: none"> <li>Minor updates</li> <li>Avoid excavation on paved surfaces less than 5 years old or 2 years for micro-surfaces. Exceptions for emergency and development works.</li> </ul>	4.1
	Road Class.	Miscellaneous updates	4.2
	Vertical Alignment	<ul style="list-style-type: none"> <li>Allow 12% grades up to cul-de-sac (currently max 5%)</li> <li>Allow 8% grades down to cul-de-sac (currently max 5%) with modification to grade at cds.</li> </ul>	4.3
	Road cross-section	Correction to Table 1 and other clarifications	4.5
	Sidewalk	Deleted reference to reinforcing for commercial sidewalk, as it will be addressed on standard drawing (still required, but shown on drawing as mesh)	4.6
	Bike lanes	Deleted wording that bike lanes must be constructed as and where required by City Engineer.	4.6
	Appurt's	Minor changes	4.7
	Pavement Structure	Revisions to section : <ul style="list-style-type: none"> <li>More details for subgrade preparation</li> <li>New pavement design method - AASHTO</li> <li>100mm asphalt thickness required for collector and Arterial (no allowance for 75mm for Collectors if extra subbase added)</li> </ul>	4.8
	<b>CONSTRUCTION SPECIFICATIONS Schedule 5 - Highways Modifications to MMCD Gold Book:</b>		
	Exc./ Trench,BF	S02223 – replace section 3.6.7.5 – details added for trench restoration requirements.	MMCD
	Roadway Exc.	S02224 – added section 3.3.2 re scarifying & moisture control of native surface before placing embankment or subbase material.	MMCD
	Aggregates...	S02226 – various sections replaced with City requirements <ul style="list-style-type: none"> <li>Revised 2.8 – Select Granular sub-base gradations.</li> </ul>	MMCD

		<ul style="list-style-type: none"> <li>2.11 – Allowances made for use of recycled aggregate material</li> </ul>	
	Hot mix asphalt	S02512 – Various sections replaced with City requirements	MMCD
	Drawings	SS-G5 – Pavement Restoration – replaces MMCD std G5. SS-C4 – Concrete Curbs - Deleted; Use MMCD C4 std. SS-C6 - Concrete Median Curb –Replaces MMCD std. SS-C7 – Driveway Crossing for Barrier Curb – Replaces MMCD SS-C15 – Concrete Island Ramp – Replaces MMCD. SS-R4 – Minor Local – corrected dimensions and cut fill slopes SS-R7 – Collector Class2– Reduced ROW from 20 to18m SS-R8 – Arterial Class1 – Corrected dimensioning SS-R17 – Cul-De-Sac – Revised back of curb radius from 13.0 to 13.5m SS-R27 – Street Sign - Revised materials	MMCD

## **ELECTRICAL**

	<b>Design Schedule 4.5:</b>		
	Wiring	Modifications to underground wiring requirements: The City's requirements for allowing overhead or underground wires is as follows: <ol style="list-style-type: none"> <li>In all Town Center and Village Center areas as identified by the Official Community Plan all wires shall be buried and installed in conduits.</li> <li>All streets and highways that are created as a result of new development shall have all wires buried underground.</li> <li>Outside of these areas where existing overhead wires parallel the existing road the developer shall have the option to bury or to leave the overhead wires.</li> <li>On roadways identified in the City's 20 Year Servicing Plan for upgrade and urbanization, all service wires crossing the roadway must be buried.</li> </ol>	5.5

## **OTHER**

	<b>Policy 263 - Building Permit Works and Services Requirements:</b>		
		The current Policy will now be included in the Bylaw.  Servicing requirements for building permits will be required only when works and services are necessary to support the specific building permit.  The Policy will now be used to define "Directly Attributable"	