

CITY OF LANGFORD
Subdivision and Development Servicing Bylaw Number 500

WHEREAS Council may appoint a person to be called an Approving Officer to exercise the jurisdiction conferred on him by the *Land Title Act* or the regulations or any other Act or regulations

AND WHEREAS the Approving Officer appointed by the City of Langford has established procedures for examining proposed subdivisions which information is available to the public.

B.L. # 539,
02APR01

AND WHEREAS the Council may by bylaw impose subdivision application fees pursuant to section 931 of the *Local Government Act*.

B.L. # 539,
02APR01

AND WHEREAS Council may by bylaw regulate and require the provision of works and services in respect of the subdivision or development of land, pursuant to section 938 of the *Local Government Act*;

NOW THEREFORE the Council of the City of Langford in open meeting assembled, enacts as follows:

1.0 **TITLE**

1.1 This Bylaw may be cited as the “Langford Subdivision and Development Servicing Bylaw No. 500, 2000”.

2.0 **APPLICATION**

2.1 The provisions of this Bylaw apply to all lands within the area incorporated as the City of Langford.

2.2 The purpose of this Bylaw is to regulate the subdivision and development of land and the arrangement, design and construction of highways, works and services, in order to:

- (a) Promote orderly, efficient, economical and aesthetically pleasing development.
- (b) Ensure that subdivisions and developments are developed in harmony with the environment and are suited to the use for which they are intended.

2.3 This Bylaw should be used in conjunction with the Langford Zoning Bylaw, 1999 (No. 300) and the Langford Official Community Plan Bylaw, 1996 (No. 150). Users of this Bylaw are advised that they should also be knowledgeable of the requirements of other applicable enactments including without limitation the:

- (a) *Land Title Act*;
- (b) *Local Government Act*;
- (c) *Condominium Act* and Bare Land Strata Regulations;
- (d) *Agricultural Land Commission Act*;
- (e) *Real Estate Act*;

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- (f) *Land Survey Act;*
 - (g) *Forest Land Reserve Act;*
 - (h) *Waste Management Act;*
 - (i) *Highway Act;*
 - (j) *Builders Lien Act;*
 - (k) *Water Act.*

3.0 SEVERABILITY

- 3.1 No provision of this Bylaw depends for its validity on any other provision and if any section, subsection, clause, sub-clause or phase of this Bylaw is for any reason held to be invalid by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Bylaw.

4.0 DEFINITIONS

In this Bylaw,

“**Applicant**” means a person applying for approval of a subdivision or development, whether as the owner or as agent for the owner.

“**Approving Officer**” means the Approving Officer appointed pursuant to the *Land Title Act* for the City of Langford.

“**Blast or Blasting**” means the use of explosives for the purpose of moving, displacing or breaking rock or other material;

“**Blaster**” means the person, firm or corporation engaged by the Owner to conduct Blasting and includes an agent, contractor or employee of the Blaster;

“**Boundary Adjustment**” means an adjustment in existing boundaries between legally defined parcels of land that does not create additional parcels.

“**Capital Regional City Water Department**” includes any organization assuming the responsibility for the CRDWD’s retail water supply in Langford.

“**City**” means the City Municipality of Langford.

“**Community Plan**” means the Langford “Official Community Plan Bylaw No. 150, 1996”.

“**Contractor**” is the person, firm or corporation under contract with the Municipality or developer to provide labour, equipment and materials for the execution of the works.

“**Cul-de-sac**” means a highway of which one end is designed to be permanently closed to motor vehicles, or which is terminated by a natural feature and which provides a vehicular turning area.

“**Deep Sewers**” means those installed at greater than 3 metres below finished grade.

“**Developer**” means the owner or authorized agent engaged in the process of subdividing or developing the subject property.

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“Development” means any improvement to residential, commercial, industrial, institutional or municipal lands, highways and rights-of-way, including the construction, alteration or repair of a building pursuant to a building permit.

“District” means the City Municipality of Langford.

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“City of Langford Supplements” are supplements to the Master Municipal Construction Documents (MMCD), latest edition.

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“Highway” includes a street, road, lane, bridge, viaduct and any other way open to the use of the public, but does not include a right-of-way on private property, other than an access route in a bare land strata plan that, in the opinion of the City Engineer must be designed to City standards in the interest of public safety and emergency access.

“Medical Health Officer” means the Medical Health Officer for the Capital Health Region.

“City Engineer” means the company, person or persons appointed from time to time by the Council as City Engineer or any employee authorized to act on his behalf.

“Municipal Sewer System” means the network of pipes placed so as to receive and direct sewage from two or more parcels of land to a treatment facility, which is owned and operated, by municipal government or improvement district.

“Parcel” means any lot, block or other area in which real property is held or into which real property is subdivided, but does not include a highway or portion thereof and includes the remainder of a parcel.

“Potable Water” means water, which is approved for drinking purposes by the Medical Health Officer pursuant to the *Health Act*.

“Professional Engineer or Consulting Engineer” means a person who is registered or licensed as such under the provisions of the *Engineers and Geoscientists Act*.

“Right-of-Way” means land or any interest in land acquired for the purpose of:

- (a) public rights of passage with or without vehicles; or
- (b) erecting and maintaining any pole-line; or
- (c) laying, placing and maintaining drains, ditches, pipes, transmission lines or wires for the conveyance, transmission or transportation of water, electric power, forest products, oil or gas or both oil and gas or solids as defined in the *Pipeline Act*; or
- (d) the transmission or disposal of sanitary sewage, storm water or drainage;
- (e) the operation and maintenance of any other undertaking of the District; and shall include a statutory right-of-way as defined in the *Land Title Act*.

“Road” means the portion of a highway constructed for vehicular traffic.

“Subdivision” means the division of land into two or more parcels, whether by plan, descriptive words or otherwise, and includes boundary adjustments.

“Subdivision Approval” means approval of the subdivision of land granted by the Approving Officer when all relevant requirements of this bylaw, the *Land Title Act* and any other relevant bylaws and legislation have been fulfilled.

“Substantial Completion” means completion of the Works, excepting only minor deficiencies, such that the respective Works have been fully tested, are functional and can be used for their intended purpose, all to the satisfaction of the City Engineer.

“Walkway” means an area of land improved primarily for the use of pedestrian traffic.

“Works and Services” means construction such as roadways, lanes, drainage, water and sewer systems, earthworks and slope stabilization, sidewalks, walkways, boulevards, landscaping, street lighting and underground wiring, and includes works and services whether on highways, rights of way or common property, to be provided for in a subdivision or development of land under this bylaw.

“Zone” means a zone established by the “Langford Zoning Bylaw, 1999 (No. 300)”.

5.0 APPLICATIONS AND FEES

B.L. # 1240
05OCT09

5.1 Fees

All fees referred to in this section are set out in Table 1 to this Bylaw. In the event that the installation of works and services involves excavation of an existing road, construction inspection fees and technical standards established by Bylaw No. 33 may also apply.

5.2 Preliminary Information Fee

Any property owner or other person wishing to obtain information to support an application for subdivision in the City and any conditions which would prevent or restrict the subdivision of the property may consult the Approving Officer at no charge for the initial inquiry and pay a fee for each additional inquiry within 12 months of the initial inquiry.

5.3 Application for the Approving Officers Statement of Conditions for the Approval of a Subdivision

B.L. # 630,
17DEC01

5.3.1 Any property owner or other person wishing to subdivide land must obtain a statement from the Approving Officer of the complete conditions which must be fulfilled in order to obtain approval of a subdivision and shall pay an application fee plus an additional fee for each parcel proposed to be created in addition to the number of existing parcels.

5.3.2 If the applicant wishes to submit a revised application within three months of the original submission an additional fee for considering the revised submission shall be required for each parcel added to the proposal from the original application. No fees will be refunded if the number of proposed lots is reduced.

5.3.3 If the applicant wishes to submit a revised application after three months but within one year from the date of the original submission, a fee for considering the revised submission shall be a percentage of the initial application fee plus an additional fee for each parcel added to the proposal from the original application. No fees will be refunded if the number of proposed lots is reduced.

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5.3.4 If the applicant cannot apply for approval of the subdivision within one calendar year from the date of issuance of the Approving Officer's Statement of Conditions, the applicant may request a six (6) month extension and in such cases shall pay an extension fee. Notwithstanding the date of the extension request, the date of expiration will be six (6) months from the issuance of the Statement of Conditions. If no request for extension has been made after this one-year period, the applicant must apply for a new Statement of Conditions. If, in the opinion of the Approving Officer the delay in subdivision approval is due to unreasonable delays on the part of the City of Langford, then the extension may be granted beyond the six (6) month period.

5.3.5 Applications for approval of a phased strata plan must be accompanied by a fee in accordance with Table 1.

5.3.6 For a Bare Land Strata plan that amends the plan to create fee simple lots, the fee to examine the plan shall be in accordance with Table 1, Unit fees for Pre-Design Meeting of a Subdivision.

5.4 Referrals to Agencies

The City will forward referrals to agencies of the Capital Regional District, the Government of B.C. and the Government of Canada whose input is required by law or required in the opinion of the Approving Officer regarding the application for the Statement of Conditions for the Approval of a Subdivision. Should the agency require a fee for this referral, the City will provide this information to the applicant. The applicant will be responsible for paying the applicable fees to that agency at that time. The City will not process payments to other agencies.

B.L. # 1211
02MAR09

5.5 Application for a Pre-Design Meeting

Any applicant intending to construct works or services required for the approval of a subdivision or development shall arrange for a pre-design meeting and pay, at the request for the meeting, an administration fee and a fee for each parcel to be created in addition to the number of existing parcels.

5.6 Application to Construct Works and Services Required for Approval of a Subdivision or Development.

5.6.1 Any applicant intending to construct works or services required for the approval of a subdivision or development shall pay, at the time of application and prior to the commencement of work, an administration fee plus a drawing review and construction inspection fee equal to a fixed percentage of the estimated cost of the works and services to be constructed plus an administration fee. The cost of the work shall be estimated and certified by the Professional Engineer designing the works and services.

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5.6.2 Should the construction of off site works be required as a condition of subdivision, building permit or rezoning, the applicant shall pay a drawing review and construction inspection fee in accordance with the Highways Use Bylaw (Bylaw 33).

5.7 Application for Subdivision Approval

B.L. # 840,
05APR04

- 5.7.1 Any applicant intending to apply for final approval of a subdivision shall pay an administration fee and an application fee for each parcel to be created in addition to the number of existing parcels.
- 5.7.2 Should the approved subdivision plans require additional signatures due to expiry of the plans, the approval or rejection by the Land Titles Office for any other reason, an additional fee applies.
- 5.7.3 Where the proposed subdivision is a boundary adjustment which complies with the requirements of Zoning Bylaw No. 300 and the Official Community Plan Bylaw No. 150, an application fee is required.
- 5.7.4 Final approval of the subdivision will not be granted to the applicant by the Approving Officer unless the applicant has received a letter of acceptance from the City Engineer that all works are complete, or the applicant has entered into a Servicing Agreement in accordance with section 7.0 of this Bylaw.
- 5.7.5 Any rights of way required to service a subdivision or development with future maintenance obligations for the City require a fee for document review in accordance with Schedule 1 of this bylaw.
- 5.7.6 Subdivision plans submitted for final subdivision approval must be accompanied by 4 paper copies, one digital copy to NAD83, and one digital PDF file, a current state of title certificate and all legal documentation as required by the Approving Officer in duplicate.

B.L. # 666,
17JUN02

B.L. # 840,
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5.8 Strata Title Conversions

- 5.8.1 A fee for an application for Strata Title Conversion that complies with all City Policies and Bylaws is required.
- 5.8.2 A fee for an application for Strata Title Conversion that will require a determination from Council as to substantial compliance with the City Policies and Bylaws is required.

5.9 Park Land Dedication

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05OCT09

Any application for Subdivision Approval that creates three or more new parcels requires that the applicant dedicate parkland to the City in accordance with the *Local Government Act* s.941. The proposed parkland location and size must be approved by the City.

5.10 Panhandle Lots

Any panhandle lots proposed with the subdivision application must conform to the City of Langford Panhandle Policy No. 3320-00.

5.11 Duplex Lots

Any proposed parcels of land that comply with Zoning Regulations for duplex construction must comply with the Requirements of the Langford Official Community Plan, Bylaw No. 150 and Bylaw No. 322 as it pertains to Two Family and Multi-Family Residential Land. A development permit is required for duplex construction.

5.12 Refunds

Refunds are available under the following conditions:

B.L. # 1240
05OCT09

- 5.12.1 Full refund less a \$50 administration fee for an application for Statement of Conditions, Boundary Adjustment, a revision to a Subdivision Application, or a Strata Title Conversion if the application is withdrawn prior to referrals being sent to outside agencies.
- 5.12.2 No refunds are available for final approval of a subdivision.

Revised Table 1 to Bylaw No. 500, 2004 Applications and Fees

Section Number	Application Type	Admin Fee	Unit Fee
B.L. # 1244 17AUG09	5.3.1	Application for the Approving Officers Statement of Conditions (Residential Lots)	\$250 Plus, per new lot created: ➤ \$50 for <550m ² lots (any zone) ➤ \$50 for >550m ² and <835m ² lots in an R2 zone ➤ \$50 all other residential
B.L. # 666, 17JUN02 B.L. # 840, 05APR04	5.3.1	Application for the approving Officers Statement of Conditions (Commercial or Industrial)	Plus per new lot created ➤ \$500 for Commercial or Industrial
B.L. #1211 02Mar09	5.3.2 & 5.3.3	Revised application for a Statement of Conditions (when applied for <i>within one year</i> of original application)	\$750
B.L. # 840, 05APR04	5.3.4	Extension of a Statement of Conditions (valid for 6 months)	\$750
B.L. # 840, 05APR04	5.3.7	Approval of a phased strata plan, or amendment of strata plan (due upon Form P submission)	\$500 per phase
B.L. # 840, 05APR04	5.5	Application for <i>Pre-Design</i> meeting	\$500 Plus, per new lot created: ➤ \$200 for <550m ² lots (any zones) ➤ \$300 for >550m ² and <835m ² lots in an R2 zone ➤ \$500 all other residential ➤ \$500 Commercial or Industrial
B.L. # 1244 17AUG09	5.6.1	Application to Construct – (On site) (Construction Administration Fee)	\$700 Plus 2.5% of engineers estimate of cost of works and services up to \$200 000 and 1% of the remainder
B.L. # 1240 05OCT09	5.6.2	Application to Construct – (Off site) (In existing road RoW) (Construction Administration Fee)	In accordance with Bylaw No. 33 <i>To include all utilities except Hydro</i>
B.L. # 840, 05APR04	5.7.1 & 5.7.7	**Application for Final Approval of a Subdivision	\$250 Plus, per new lot created: ➤ \$150 for <550m ² lots (any zone) ➤ \$200 for >550m ² and <835m ² lots an R2 zone ➤ \$400 all others residential ➤ \$500 Commercial and Industrial DCC Payment Due (Residential ONLY)
B.L. # 840, 05APR04	5.7.2	Signature Expiration	\$100
B.L. # 840, 05APR04	5.7.3	Boundary Adjustment	\$750 Plus \$250 per each additional lot line to be adjusted.
B.L. # 840, 05APR04	5.8.1	Strata Title Conversion Residential Compliant	\$750

B.L. # 840, 05APR04	5.8.2	Strata Title Conversion Residential Non-Compliant	\$2000	
B.L. # 840, 05APR04	5.8.1	Strata Title Conversion Commercial/ Multi Family/ Industrial Compliant	\$1500	
B.L. # 840, 05APR04	5.8.2	Strata Title Conversion Commercial/ Multi Family/ Industrial Non-Compliant	\$3000	
B.L. # 1244 17AUG09				

B.L 721
06JAN03

- 5.13 In accordance with s.944. (3) of the *Local Government Act*, Council hereby delegates the exception of a parcel from a statutory or bylaw minimum frontage requirement to the Approving Officer.

6.0 DRAWINGS AND CONSTRUCTION STANDARDS

B.L.#539
02APR01

- 6.1 All works and services required for a subdivision or development by the Approving Officer or by this Bylaw or any other Bylaw of the City shall be constructed in accordance with the City of Langford Supplements and the Master Municipal Construction Documents (MMCD) 2000, in that order.

BL #501
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BL #666,
17JUN02
& BL #791
15SEF03

- 6.2 The applicant shall not begin the construction of any works and services required under this Bylaw for a subdivision or a development until 4 copies of drawings for those works and services prepared, signed and sealed by a Professional Engineer have been provided to and approved by the City Engineer, except that a qualified landscape designer shall prepare and certify the landscaping plans for all work under Schedule 4 of this Bylaw and for all landscaping works in excess of \$15,000, which may also include the installation of trees. The City of Langford file number shall be included on all construction drawings.

In addition to the digital AutoCAD file to NAD83 coordinates, the owner shall provide an A1 size digital pdf file with the as-built submission.

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- 6.3 The applicant shall not construct any works and services required under this bylaw for a subdivision or a development except under the supervision of a Professional Engineer who shall certify the As-Constructed Drawings as required in Section 6.2 and the supervision of a qualified landscape designer in respect of landscaping work under Schedule 4 of this bylaw who shall certify the As-Constructed drawings for all landscaping works in excess of \$15,000, which may also include the installation of trees.

- 6.4 Prior to the approval of construction drawings, any Professional Engineer engaged by the developer must provide the City with a letter that outlines the scope of the engagement. The scope of the engagement shall include, but is not limited to:

- 6.4.1 Expected inspections required,
- 6.4.2 The proposed inspection schedule,
- 6.4.3 Assurance of the completeness of the survey and design,
- 6.4.4 Certification of construction drawings,
- 6.4.5 Certification and submission of As-Built drawings.

A statement from the engineer that the engineer has read and understands the relevant City Bylaws, Policies and specifications, is required.

- 6.5 The Professional Engineer must advise the City Engineer of any severance of their engagement during the course of the subdivision or development design and construction.

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- 6.6 The City Engineer is to be notified by the developer or the Professional Engineer engaged by the developer by fax or otherwise in writing 48 hours before any construction begins and then at the following stages of work:

- 6.6.1 Completion of excavation in any area at least 24 hours before beginning deposition in that area.

- 6.6.2 Completion of sub-grade in any road or driveway area at least 24 hours before beginning deposition of sub-base in that area.
- 6.6.3 Completion of road-base or curb-base in any road at least 24 hours before beginning paving or curbing in that road.
- 6.6.4 Completion of sanitary sewers, storm sewers or any in-ground services requiring approval of the City Engineer at least 24 hours before the works are to be covered.
- 6.7 The Professional Engineer must provide copies of all site inspection reports to the City Engineer.
- 6.8 No excavation is permitted in an existing highway right of way without the express approval of the City Engineer. Trenchless technology is to be used wherever possible. Any person or company working within the right of way must provide to the City Engineer proof of \$5,000,000 general liability insurance.
- 6.9 A geotechnical concept plan showing the intent and scope of all geotechnical works on and off site must be certified by a Professional Engineer and submitted with the construction drawings for approval. The Professional Engineer must apprise the City Engineer of any changes, alterations or unforeseen circumstances relating to the geotechnical works. Inspection reports for all geotechnical works and findings relating to on and off site works for the subdivision or development are to be copied to the City Engineer.
- 6.9.1 The Geotechnical Engineer shall provide a digital photographic record of all complete and certified works. This shall include a photograph of each prepared building site, retaining walls and slopes. The elevation of walls or slopes shall be indicated by a levelling rod.
- 6.10 **Geotechnical Certification**
- 6.10.1 All slopes greater than 30% created by the construction of the development or subdivision are to be shown on the engineer's As-Constructed drawings and certified stable by a registered Professional Engineer, in the long term and for the B.C. Building Code earthquake design.
- 6.10.2 Areas of fill must be recorded on the engineer's As-Constructed drawings and certified by a registered Professional Engineer as to load carrying capability and long term stability.
- 6.10.3 **Retaining structures greater than 1.2 above finished grade** must be certified by a registered Professional Engineer for the B.C. Building Code earthquake design.
- 6.11 **Stacked Boulder Walls**
- 6.11.1 Stacked rock walls require a form of creeping vegetation planted between the rocks if, in the opinion of the City Engineer, such plantings will improve the appearance of the rock walls. Acceptable forms of vegetation are as follows. The developer may propose substitutions when submitted with a landscaping plan certified by a registered landscape architect.
- 6.11.2 The maximum height for a stacked rock boulder wall is 2.5 metres from finished grade.

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- 6.11.3 Notwithstanding the above, the stacked boulder wall may exceed 2.5 metres in height if, in the opinion of the City Engineer, the wall will not have a visual impact on surrounding properties or the general public or the wall is terraced in 2.5 metre lifts with a minimum 1.5 metre landscaping area provided and landscaping and irrigation are installed prior to subdivision approval.
- 6.12 All surplus materials, tools, temporary structures, debris, dirt and rubbish shall be removed from the land before subdivision or development approval. No burning of debris on site is permitted.
- 6.13 No letter of acceptance or occupancy permit shall be issued for any subdivision or development until two paper copies and one digital copy and an A1 size pdf file of the As-Built drawings have been submitted to the City Engineer. The engineering drawings shall be altered to show the works and services and the property lines as constructed and located relative to the 1983 North American Datum and have been certified by the Professional Engineer inspecting the work. The drawings shall be produced in accordance with the standards in the Master Municipal Construction Documents (MMCD), latest edition and the City of Langford Supplements and Schedule 11 to this Bylaw.
- 6.14 In areas of extreme hazard severity classification as identified in the wild land/urban interface and urban/urban intermix assessment in Chapter 2 of NFPA299 1997 edition as amended, no building shall be constructed until clearing of vegetation has taken place for fire protection meeting the requirements of this document. The area to be cleared shall be shown on the building permit drawings submitted for approval.

6.15 Blasting Requirements

Where blasting is required for site development and servicing and where the volume of rock to be blasted for the entire site exceeds 500m³ (in situ),

- 6.15.1 The construction approval drawings as submitted in accordance with s.6.2 and Bylaw No. 650 shall indicate the estimated location and approximate quantity of the proposed blasting and shall include a blasting plan, risk assessment and blasting schedule.
- 6.15.2 A certificate of insurance providing a minimum of \$5,000,000 general liability coverage for the blasting contractor, the Owner and the City of Langford against liability for loss or damage to persons or property as a result of blasting must be submitted to the City Engineer prior to the commencement of any blasting, and the insurance shall be maintained and a fresh certificate submitted to the City Engineer upon each renewal of the insurance through the course of the blasting.
- 6.15.3 At least one recording seismograph shall be used on the site of all blasting in accordance with the manufacturer's instructions and the records retained by the blasting contractor and submitted to the City Engineer by facsimile upon request.
- 6.15.4 Where blasting is proposed within 200 metres of an occupied building, the blasting contractor must engage the services of a consultant to review the blasting contractor's blasting plan and risk assessment and to certify that the documents have been reviewed and were properly prepared. The blasting plan and risk assessment and the consultant's certification shall be made available on site prior to the start of blasting and at all times during the blasting. The City Engineer must be allowed access to the documents to verify that they are present. The consultant must not be an employee of any company making or distributing

explosives nor an employee or partner of any blasting contractor, and must be a Professional Engineer with experience in the preparation of blasting plans and the assessment and mitigation of public safety risks related to the use of explosives.

- 6.15.5 The City Engineer and owners and occupiers within 300 metres of the perimeter of the blast site shall be given 48 hours notice in writing of the commencement of any blasting by the blasting contractor and at least seven (7) days notice shall be given of any blasting expected to continue for more than one calendar week. The area of proposed notification shall be submitted to the City Engineer and shall be modified at the discretion of the City Engineer on the basis of the likely impact of blasting, and all notification of owners and occupiers required under this bylaw shall be given in the area as approved by the City Engineer. The notice shall describe the work to be done, the expected date of commencement, duration of the project, methods to be used to safeguard life and property and warning methods used to signal an impending blast and the name and phone number of the representative of the blasting contractor or Owner who will provide additional information.
- 6.15.6 Blasting shall be exempt from all provisions of this section if the blasting is specifically authorized by a statute or regulation other than the *Local Government Act*, or if the blasting is, in the opinion of the City Engineer, required on an urgent basis to lessen or eliminate an imminent threat to life, safety, property or public transportation routes and communication systems.
- 6.15.7 Every person who fails to comply with any of the requirements of this section of this Bylaw is liable to a fine and penalty of not more than \$10,000 for each offence and each day that an offence continues shall constitute a separate offence.

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- 6.16 Community Mailboxes** and access to them shall be shown on the construction drawings. Canada Post shall review and approve all new community mailbox locations.

6.17 Service Rights of Way

- 6.17.1** Service rights-of-way for storm or sanitary sewers shall have a width equal to twice the depth of the service.
- 6.17.2** No part of any building foundation shall be located within a horizontal distance of the centreline of buried services equal to twice the depth of the service unless a Professional Engineer certifies that a lesser separation will permit excavation of the service without damage to the foundation. Any portion of a parcel in which a foundation is not permitted under this subsection, that is not within a statutory right-of-way shall be subject to a s.219 Covenant in favour of the City prohibiting the location of any part of a building foundation.
- 6.17.3** All service rights-of-way on private property shall be unobstructed by buildings and structures.

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- 6.18** During construction of the subdivision or development the developer must ensure that all streets adjacent to the subdivision or development are cleaned every Friday before 3:00 p.m. for the duration of works on site, and as required by the City Engineer. If the developer fails to do so, the City may arrange for the street cleaning at the cost of the developer, which cost shall be payable to the City immediately upon the presentation of the City's invoice to the developer.

- 6.19** If in the opinion of the City Engineer, debris and soils entering the drainage system due to site development or building activity could cause contamination to the drainage system

B.L. # 630,
17DEC01

downstream from the development, catch basins adjacent to and within the development shall be provided with a "Silt Sack®" or approved equivalent silt containment system during construction of the subdivision or development and for the duration of building activity on site. The City will provide the "Silt Sack®" and the developer will be responsible for the installation.

6.20 If the proposed subdivision or development has highway frontage on a minor collector or greater classification, or a new road is classified as a minor collector or greater, the City Engineer may require bus bays in accordance with B.C. Transit specifications.

B.L #721
06JAN03

7. WORKS AND SERVICES AGREEMENTS

B.L. # 1211
2MAR09

7.1 In the event that an owner of land wishes to obtain approval of a subdivision or issuance of a building permit prior to the construction and installation of works and services required by this bylaw, the owner may enter into a servicing agreement with the City in the form attached to this Bylaw as Schedule 6. All Works and Services Agreements may be executed by the City of Langford Authorized Signatories. No such agreement shall be entered into with respect to works affecting soil stability including stacked boulder retaining walls. This agreement must be prepared as a Section 219 (of the *Land Title Act*) Covenant in favour of the District, to be registered with the subdivision plans.

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B.L. # 630,
17DEC01

7.2 Any owner intending to enter into a servicing agreement pursuant to s.7.1 must provide to the City a letter of credit, cash or other form of security acceptable to the City, equal to 100% of the cost of the works and services required, the estimate of which is to be certified by a Professional Engineer and must provide a date for the completion of the works and services for the purposes of s.940 of the *Local Government Act*.

B.L. # 840,
05APR04

B.L. # 976,
19SEP05

7.3 The final approval fee imposed by s.5.6.1 shall be increased in accordance with **Table 1** where an owner enters into a servicing agreement pursuant to s.7.1.

8.0 HIGHWAYS AND WALKWAYS

B.L. # 840,
05APR04

8.1 This section, in conjunction with Schedules 1, 2, 4, 5, 9 and 10 of this Bylaw, shall govern the design and construction of all roads and walkways within the District.

8.2 Classification and Width

The classification of the highway required for a subdivision or development shall be in accordance with Schedule 1 for new roads, Schedule 1 or 2 for existing roads and Schedule 9 for roads within Bear Mountain Estates. The City Engineer shall determine the classification of the highways to be constructed or improved in accordance with the following criteria:

B.L. # 791,
15SEP03

8.2.1.1 The width of right-of-way and the design speed for horizontal elements shall be determined from the highest future classification of the highway which, in the opinion of the City Engineer, will result from the subdivision or development proposed and in accordance with in the Official Community Plan.

8.2.1.2 If, in the opinion of the City Engineer the topographical and/or traffic calming considerations warrant and all services and boulevard plantings can be located with the road right-of-way then the right-of-way for a local road may be reduced from 18 metres to no less than 14 metres.

8.2.1.3 Where a highway is required for a subdivision or development in accordance with Schedule 9 only, the City Engineer shall require the highest road standard unless in his opinion, off street parking and pedestrian circulation design warrants a reduction in right-of-way and sidewalk width.

B.L. # 840,
05APR04

8.2.1.4 Traffic circles at new or existing road intersections are required, unless in the opinion of the City Engineer, a signed or lighted intersection will provide more efficient traffic management. Other traffic calming devices are required on new or existing highways adjacent to the development for any classification of highway. If in the opinion of the City Engineer traffic calming will effectively reduce driving speeds pavement width, road crossings and geometric configuration of highway may be varied.

8.2.1.5 If, in the opinion of the City Engineer, the traffic calming plan warrants review by a Professional Transportation Engineer, the developer shall engage a Professional Transportation Engineer at the developer's expense.

B.L. # 791,
15SEP03
Deleted 8.2.2

8.2.2 The width of a cul-de-sac or local road may be reduced to 6.0 metres where paved off-street parking constructed to the same standard as the road is provided for public use and allows for one parking space for every two parcels, which have frontage on or obtain access from the road. Where the longitudinal road grade is less than 3%, invert gutters shall be continuous through the parking space and barrier curbs are permitted for the parking space.

B.L. # 630,
17DEC01

8.2.3 All roads except rural roads shall be constructed with concrete curbs and gutters on each side of the paved surface. On cul-de-sacs, small lot, one and two-way roads and local roads, the curbs may be mountable but all other curbs shall be non-mountable. Curbs shall be continuous through private road (up to three lanes in width) or driveway intersections with a public highway. The curb shall be continuous with either a curb drop or invert gutter.

B.L. # 539,
02APR01 &
B.L. #630
17DEC01

8.2.3.1 If the storm water management plan for the subdivision or development requires bioswales parallel to the road, 200mm thick by 300mm wide flat concrete curbs are required. Construction specifications shall be in accordance with MMCD 02523.

B.L. #721
06JAN03

8.2.4 Any roads adjacent to a subdivision or development must be reconstructed to the centreline by the developer of that subdivision or development. The road designation and construction standards shall be identified by the City Engineer in accordance with Schedule 1 and Schedule 2 of this bylaw, and Bylaw No. 497. The centreline shall be considered the centreline of the existing road right-of-way, or be compatible with the future road alignment as determined by the City Engineer. Where the existing road is in a condition satisfactory to the City Engineer, the developer shall be required to pave between the new curb and gutter to the existing asphalt.

B.L. # 539,
02APR01

8.2.5 Small Lot Subdivision Road Specifications (zoned RS1)

8.2.5.1 Small lot subdivision roads must be designed to the 30kmh design standard in accordance with Schedule 1.

8.2.5.2 The maximum length for a cul-de-sac under this specification is 180 metres.

8.2.5.3 For cul-de-sacs under this classification (small lot roads), the cul-de-sac radius shall be as follows unless otherwise approved by the Fire Chief as part of the Fire Plan:

B.L. #721
06JAN03

8.2.5.3.1 Cul-de-sac 50 metres or less in length from the centerline of intersecting road to centre of cul-de-sac, the radius of paved surface to be a minimum of 10.5 metres in a 11.0 metre radius right-of-way

8.2.5.3.2 Cul-de-sac greater than 50 metres and less than 100 metres from the centerline of intersecting road to centre of cul-de-sac, the radius of paved surface to be a minimum of 12.0 metres in a 13 metre radius right-of-way

B.L #721
06JAN03

8.2.5.3.3 Cul-de-sac greater than 100 metres from the centerline of intersecting road to centre of cul-de-sac, the radius of paved surface to be a minimum of 13.0 metres in a 15.0 metre radius right-of-way.

8.2.5.4 deleted

B.L #721
06JAN03

8.2.5.5 If, in the opinion of the City Engineer, the developer demonstrates that all required services, parking, sidewalks and street lighting will be adequately contained within the road right-of-way, small lot one and two way road right-of-way widths may be reduced by no more than 2.0 metres.

B.L #721
06JAN03

8.2.5.6 In conjunction with the overall parking plan for a subdivision or development, the City Engineer may require "No Parking" signs on one or both sides of a new road or the existing road frontage.

B.L. # 666
17JUN02

8.2.6 Bicycle lanes shall be 1.5 meters wide measured from gutter line, except on Goldstream Avenue and Jacklin Road, where they shall be measured from the edge of curb adjacent to the travelled surface.

8.3 Cul-de-Sacs

8.3.1 The pavement radius of the turning area shall be 13.0 metres and the cul-de-sac shall have an island located at the center of the area with a radius between 4 metres and 6.5 metres. The right-of-way radius of the turning area shall be 15.0 metres.

B.L #721
06JAN03

8.3.1.1 Parking spaces within cul-de sac islands shall be provided, if in the opinion of the City Engineer, the availability or arrangement of on street parking is otherwise inadequate. Parking spaces shall be delineated by line painting.

B.L #796
06OCT03

8.3.2 Cul-de-sac islands shall not be landscaped or provided with an irrigation system, unless the developer provides a covenant in accordance with Section 219 of the *Local Government Act* that states that all adjacent property owners to the island shall be responsible for the perpetual maintenance of the landscaping. Any non-landscaped islands shall have non-mountable curbs and be infilled with 150mm thick coloured stamped concrete in a brick paver design. Concrete construction is to comply with MMCD specifications for sidewalks. If, in the opinion of the City Engineer, parking should be deterred within the cul-de-sac island due to a reduced radius, a hard landscaping treatment consisting of protruding rocks may be implemented, providing emergency vehicle access is maintained.

8.3.3 The maximum length of a cul-de-sac shall not exceed 183 metres in areas of extreme hazard severity classification as identified in the wild land/urban interface and urban/urban intermix assessment in Chapter 2 of NFPA299 1997 edition as amended. All other cul-de-sacs shall not exceed 305 metres in length.

8.3.4 Where a highway is approved for a subdivision under Section 6.1 with only one access from other highways but where it has been designed to have a second access from another highway in the future in accordance with the Official Community Plan and where, in the opinion of the Approving Officer, there is a reasonable expectation that the second access will be constructed, the maximum length of cul-de-sac given in this section may be exceeded provided that the pavement radius of the turning area is 13 metres. In this paragraph an access means an access for a fire fighting vehicle as described in Bylaw No. 210, or a

higher standard, and constructed within a Statutory Right-of-way in favour of the City or a dedicated highway.

8.3.5 A two-point turn around may be permitted in lieu of a cul-de-sac where the future extension of a road is likely and the following criteria are met to the satisfaction of the City Engineer.

8.3.5.1 It has been demonstrated by the developer that a cul-de-sac is not possible.

8.3.5.2 A turn around will allow a fire fighting vehicle as described in Bylaw No. 210 to turn around in a two point turn.

8.3.5.3 The two-point turn around complies with the City cul-de-sac road specifications.

8.3.5.4 The City of Langford Fire Chief approves the design.

B.L. # 501,
19JUN00

8.3.6 Sidewalks adjacent to cul-de-sac roads shall terminate at the curb return at the bulb, unless, in the opinion of the City Engineer, sidewalks are required within the bulb for aesthetic reasons or to provide access to amenities in or beyond the bulb.

B.L. #721
06JAN03

8.3.7 If, in the opinion of the City Engineer the topographical and/or traffic calming considerations warrant and all services and boulevard plantings can be located with the road right-of-way then the right-of-way for a local road may be reduced below 18 metres but no less than 14 metres.

B.L. #721
06JAN03

8.3.8 Where a local road terminates and future access to lands beyond is anticipated and it has been determined by the Fire Chief that accommodation for a two point turn for fire fighting apparatus is not necessary, a paved turn around for passenger vehicles is required if the road termination is greater than 50 metres from the nearest intersection. The turn around may be provided on private property if protected by a right-of-way in favour and parking covenant in favour of the City is registered in the property. The right-of-way and covenant expire when the future road connection is complete.

8.4 Vertical Curves

For the rural local or rural collector designations only, vertical curves may be omitted where the algebraic difference in grades does not exceed 2% for local roads and cul-de-sacs and 1% for other roads.

8.5 Length of Vertical Curves

Vertical curve criteria shall be in accordance with Schedule 1 of this Bylaw.

8.6 Road Grades and Crown

Road grades and crown are to be in accordance with Schedule 1 of this Bylaw and the following criteria:

8.6.1 Minimum grade of roads shall be 0.5% measured at the gutter line.

8.6.2 Maximum grade in any direction on the turnaround of cul-de-sac shall be 6.0%

8.6.3 Maximum grade of local road or cul-de-sac approach to a collector shall be 5% for a 15 m length measured from the edge of the collector right-of-way

8.6.4 Maximum grade of local road, cul-de-sac or collector approach to an arterial shall be 3% for a 15 m length measured from the arterial right-of-way edge

8.6.5 Normal crown shall be 2.5%

- 8.6.6 Intersections with Ministry of Transportation and Highways roads shall be to Ministry of Transportation and Highways standards.
- 8.6.7 Highways that have less than 6.0 metres of paved surface shall have a minimum 2.5% cross-fall and no crown.

8.7 Super-elevation

Horizontal curves on local roads and cul-de-sacs shall not be super-elevated. Collector and Arterial roads with a design speed of 60 kmh or greater and with no direct access to the road from development, may be super-elevated in accordance with the Geometric Design Standards for Canadian Roads and Streets, 1999 edition.

8.8 Horizontal Alignment

- 8.8.1 Where possible, the horizontal alignment of the road shall be centred in the highway right-of-way. This may be varied by the City Engineer to suit local conditions.
- 8.8.2 The minimum centreline radius of curve shall be in accordance with Schedule 1 of this Bylaw.
- 8.8.3 Where, in the opinion of the City Engineer, a local road or cul-de-sac, has been designed to ensure consistently low driving speeds, the minimum centre line radius may be reduced to 20 metres.
- 8.8.4 All horizontal curve design must support vehicle movement to WB-12 design standards.

B.L. # 501,
19JUN00

8.9 Cut and Fill Slopes

Cut and fill slopes, including ditch slopes, within four metres of the road edge shall be a maximum grade of 6 horizontal to 1 vertical. These slopes shall be planted with grass or trees and shall be made stable under all conditions up to the predicted 1 in 200-year weather or earth movement events. Slopes greater than 4 horizontal to 1 vertical, the stability of which, in the opinion of the City Engineer, directly affect the safety or stability of the highway, must be completely within the road right-of-way or subject to a Covenant under s.219 of *Land Title Act* or a Statutory Right-of-Way agreement which, in the opinion of the City Engineer, provide reasonable guarantees for the safety and stability of the highway.

8.10 Cross Sections

Refer to Schedule 5 for Cross Sections for each road classification.

8.11 Structural Design of Roads

The minimum compacted gravel base and asphalt requirements shall be in accordance with Schedule 1 of this Bylaw.

8.12 Stripping of Road Bed

All topsoil and organic material shall be removed from the roadways and walkways prior to placement of fills on or cuts of the subgrade.

8.13 Walkways

In addition to the requirements of Section 8.2 and Schedules 1 and 2, walkways shall be constructed where, in the opinion of the City Engineer, they are needed to provide pedestrian access to schools, playgrounds, shopping centres, transportation, trail systems, beaches and other community facilities, or for proper circulation of pedestrian traffic.

- 8.13.1 Concrete sidewalks are to be 150mm thick where mountable curbs are specified.
- 8.13.2 Brick paver walkways are to be constructed in accordance with the MMCD and the City of Langford Supplements.
- 8.13.3 Where a walkway is to be constructed in its own right-of-way the minimum width of the right-of-way shall be 4 m and the minimum width of the walkway shall be 2 m.
- 8.13.4 Walkways shall be located adjacent to property lines within the highway right-of-way except as provided in section 8.13.5 below.
- 8.13.5 Walkways are to meander where possible to avoid existing trees and natural features where deemed appropriate by the City Engineer. No walkway shall travel parallel to the adjacent highway for more than 50% of the design speed of the adjacent road in metres, unless varied by the City Engineer to suit local conditions.
- 8.13.6 Walkways at the entry of parks or designated trail systems shall be marked with a Trail Marker in accordance with Schedule 5.
- 8.13.7 The walkway grade may vary where appropriate to provide improved connectivity to other walkways, parks and trail systems.
- 8.13.8 Unpaved walkways are to conform to Schedule 5 for trail specifications.
- 8.13.9 Where a new walkway crosses any driveway and non-mountable curbs are required, walkway construction must provide driveway crossing in accordance with MMCD Drawing No. C7 and Schedule 5. The sidewalk shall be continuous through the driveways.
- 8.13.10 In industrial and commercial designated rights-of-way, coloured stamped concrete or brick strips must be provided on either side of the driveway where it intersects the walkway, in accordance with Drawing SS C9.
- 8.13.11 Where non-mountable curbs are required, provide ramps at all intersections for wheelchair access in accordance with City of Langford Supplements.
- 8.13.12 Gravel shoulders are not permitted. Grass or landscaping shall be extended to the edge of the walkway or landscaped area within the road right-of-way.
- 8.13.13 No utility lids shall be installed in sidewalks, crosswalks or curb and gutter unless, in the opinion of the City Engineer, there is no alternative location. If a manhole is permitted in a brick paver sidewalk, a 150mm thick x 100mm minimum wide square apron shall be provided around the manhole and the apron dimensions shall be block module for the type of brick pavers used.
- 8.13.14 The lateral sidewalk grade shall be no less than 2% and no more than 6%.
- 8.13.15 For small lot zoned subdivisions only, sidewalks are not required for cul-de-sacs that service 10 lots or less unless, in the opinion of the City Engineer, a sidewalk is required to access an existing or future trail, park, school, or connection to adjacent development.

B.L. #630,
17DEC01

B.L. #630,
17DEC01

B.L. #666
17JUN02

B.L. #721
06JAN03

B.L. # 539,
02APR01

8.14 Electrical Outlets

Within the areas defined in Schedule 2, duplex electrical outlets shall be located in lamp standards at no more than 20 metre spacing, 4.5m to 5.0m above finished grade.

8.15 Street Trees

- 8.15.1 Trees shall be planted on both sides of all streets in accordance with Schedule 4 of this bylaw, except RS1 roads, where trees shall be planted on one side of all streets in accordance with Schedule 4 of this bylaw.
- 8.15.2 Where a new road is designated as Rural Local or Rural Collector, if in the opinion of the City Engineer and the Municipal Planner, the developer can demonstrate that the existing road side vegetation will achieve the same aesthetic effect as street trees, street trees will not be required.
- 8.15.3 If, in the opinion of the City Engineer, it would be practical to delay the installation of street trees until the completion of building construction in the subdivision or development, the developer may choose to provide the City with the cash equivalent of the cost of the provision, installation, irrigation system and one-year maintenance of the street trees and irrigation system. The developer must provide to the City Engineer for approval, a detailed cost estimate for the works which shall include sizes and species of street trees, site preparation, installation, irrigation and maintenance for approval.
- 8.15.4 If, in the opinion of the opinion of the City Engineer, it would be practical to delay the installation of boulevard plantings until the completion of building construction in the subdivision or development, the developer may choose to provide the City with the cash equivalent of the cost of the preparation, provision, installation and one year maintenance of the boulevard and the irrigation system where required. The developer must provide to the City Engineer a detailed cost estimate for the works which shall include sizes and species of boulevard plantings, site preparation, installation and irrigation for approval.
- 8.15.5 Irrigation for each tree is to be provided for all new tree plantings in Langford, notwithstanding the requirements of Schedules 2 a, b and c for boulevard irrigation. The irrigation system shall be approved by the City Engineer prior to installation.
- 8.15.5.1 The type of irrigation shall be suitable for the variety of tree planted and the existing soil conditions.
- 8.15.5.2 The irrigation system shall be warrantied for 6 months or bonding provided.
- 8.15.5.3 The irrigation system shall have a minimum two year design life if, in the opinion of the City Engineer, the replacement system will be economical after that two-year period.
- 8.15.5.4 Tree wells must be prepared in accordance with Schedule 4 and the location staked prior to subdivision approval.

B.L #501
28JUL00
B.L. # 539,
02APR01

B.L. #501
28JUN00 &
BL#539
02APR01

B.L. # 539,
02APR01

B.L. # 840,
05APR04

8.16 Boulevards

- 8.16.1 Those portions of a road allowance not improved with paved road, curb, or sidewalk shall be landscaped. No surface finished in gravel shall be permitted except shoulders and trials adjacent to rural roads.
- 8.16.2 All landscaped areas shall have a minimum of 150 mm of topsoil under grass, 300 mm under shrubs and 1.2 metres under trees.

8.16.3 All landscaped areas as identified in Schedule 2 shall include automatic underground irrigation in accordance with the City of Langford supplements. Water for the irrigation and electrical power shall be provided from the adjacent development, unless in the opinion of the City Engineer it is impractical. The irrigation system shall be by Irritrol™ Systems. The timer and zone valves for the irrigation system shall be in the boulevard adjacent to the development.

B.L. # 539,
02APR01

Where a continuous irrigation system is required, the minimum size of main irrigation trunk line parallel to the road frontage shall be 50mm diameter, and shall be encased in a 100mm sleeve under roads or driveway crossings. This main is required in addition to the site specific irrigation zone supply lines.

B.L. #721
06JAN03

A separate zone is required to supply irrigation to the hanging baskets on lamp standards in the core area only in accordance with Schedule 2a. Lamp Standards (Single and Double Head Lumca Prestige only) shall be provided with the appropriate conduit and fittings and shall be connected to the adjacent irrigation timing system.

8.16.3.1 All landscaped areas shall include automatic underground irrigation in accordance with the City of Langford supplements for those areas identified in Schedule 2.

B.L. # 840,
05APR04

8.16.3.2 The irrigation system shall be by Irritrol™ Systems.

B.L. # 840,
05APR04

8.16.3.3 **Irrigation is to tie into existing City system wherever possible, otherwise** water for the irrigation and the electrical power for the irrigation systems exclusively shall be provided from the adjacent development, if in the opinion of the City Engineer connection of the City is impractical. **The City system shall be isolated by the appropriate valves and a blow-out connection shall be provided. Any tie ins to City irrigation systems are to be completed by the City's contractors at the developer's expense.**

B.L. # 840,
05APR04

8.16.3.4 Timers and zone valves for the irrigation system shall be in the boulevard adjacent to the development **and shall be exclusive to the City system.**

B.L. # 840,
05APR04

8.16.3.5 **Separate zones are required for turf, trees, shrubs, annuals and hanging baskets.**

B.L. # 840,
05APR04

8.16.3.6 Where a continuous irrigation system is required, the minimum size of main irrigation trunk line parallel to the road frontage shall be 50 mm diameter, and shall be encased in a 100 mm sleeve under roads or driveway crossings. This main is required in addition to the site specific irrigation zone supply lines. **A 25 mm diameter sleeve for irrigation power is to be installed in a common trench with the main irrigation trunk line and is to share any necessary irrigation sleeves.**

B.L. # 840,
05APR04

8.16.3.7 A separate zone is required to supply irrigation to the hanging baskets on lamp standards in the core area only in accordance with Schedule 2a. Lamp Standards (Single and Double Head Lumca Prestige only) shall be provided with the appropriate conduit and fittings and shall be connected to the adjacent irrigation timing system.

B.L. # 840,
05APR04

8.16.4 The developer must provide maintenance for all landscaping associated with the subdivision or development for a period of one year from the final approval of the works and services.

8.16.5 Where a sidewalk and boulevard are to be constructed within an existing road right-of-way and the right-of-way width does not allow for the required width of sidewalk plus a landscaped boulevard of the same width then the minimum boulevard plus curb width is to be equal to the width of the adjacent sidewalk.

8.17 Emergency Access

B.L. # 539,
02APR01 &
BL #630,
17DEC01

8.17.1 Any portion of any road constructed under this bylaw must be within 305 metres of a highway that has two routes available to emergency vehicles to access that point on the highway. These routes shall be constructed in accordance with Bylaw No. 210 or a higher standard and may be constructed on private land provided that the are protected by a statutory right-of-way approved by the Approving Officer for the City and in favour of the City of Langford.

8.17.2 Emergency fire, police and medical access must be available to every parcel within a subdivision or development in accordance with the following criteria and Bylaw No. 210.

B.L. #501
28JUL00
&
B.L. #539
02APR01

8.17.3 An emergency access plan must be evident on the construction drawings and be reviewed by the City of Langford Fire Chief prior to approval. The plan must show how emergency access routes will be protected and what, if any signage will be provided by the developer.

8.17.4 The centre of each building envelope in a residential subdivision shall be a maximum of 150 metres from the nearest fire hydrant, measured along the access route that shall be traveled by emergency response personnel. Fire hydrants shall comply with the requirements of section 10.0 of this bylaw.

B.L. # 840,
05APR04

8.17.5 A new road or driveway grade may be greater than 12%, but not more than 14% for 100 metres or more if, in the opinion of the City Engineer, fire-fighting platforms can be reasonably provided in accordance with the following criteria. The City Engineer and Fire Chief may waive any of the requirements of this section if they each determine that the overall emergency access plan for the subdivision is acceptable.

8.17.5.1 In addition to the requirements of s. 8.17.2, fire hydrants shall also be located within 10 metres of mid points between fire fighting platforms, and within 10 metres of the centre of the vertical curve where the grade in excess of 12% begins and ends, unless, in the opinion of the City Engineer and the Fire Chief, the 150 metre maximum distance referred to in s. 8.17.4 is adequate.

8.17.5.2 The fire fighting platform must be a minimum of 8 metres long (in the direction of travel) by 6 metres wide and have a maximum grade of 6% in any direction. The staging area must have drive in access for a fire truck from the adjacent road.

8.17.5.3 Where the fire-fighting platform is located on private property other than a private road, it must be protected by a right-of-way, and the developer must provide breakaway bollards that must not cause any delay in access, as well as signage to prohibit parking or other obstruction of the fire-fighting platform.

8.17.6 The subdivision or development plan must show driveway grades that have a maximum 6% grade for 4 metres of driveway directly adjacent to the proposed building for emergency medical access.

8.18 Street Signage

B.L. # 791,
15SEP03

Any new or replacement street signage required as a result of subdivision or development is to be provided by the developer in accordance with Schedule 5 and to the approval of the City Engineer. Proposed street sign locations are to be identified on the construction drawings. Proposed new street names shall conform to City Policy and be approved by the City of Langford Fire Department. Street names shall be shown on the plan of subdivision with the application for final approval of the subdivision.

B.L. # 840,
05APR04

8.19 **Off Street Parking and Driveways**

Driveways shall be located on the approval to construct drawings where non-mountable curbs are specified, where on street parking is provided and to avoid street light, street trees and utilities

8.20 **Work in a Right-of-Way**

Any work performed in the highway right-of-way by any utility or agency must be designed and constructed such that normal maintenance and service procedures undertaken by the City or other utilities in the right of way, with normal care will not compromise the integrity, stability and serviceability of the work.

8.21 **Playground Equipment**

All playground equipment installed on public property shall be manufactured and installed in accordance with the following requirements:

B.L. # 539,
02APR01

8.21.1 All equipment shall be designed, manufactured, installed and maintained in accordance with CAN/CSA-Z614-98 "*Children's Playspaces and Equipment*". All playground equipment shall be commercial grade. Playground equipment that is intended for residential use is not acceptable.

8.21.2 Any surfaces around playground equipment shall be in accordance with CAN/CSA-Z614-98 "*Children's Playspaces and Equipment*" and shall be fine or medium gravel as defined in Table 1 of that document.

8.21.3 Prior to acceptance of the equipment and playground by the City the owner shall provide 3 copies of maintenance manuals for each piece of equipment installed.

8.21.4 Swings shall not exceed 3 metres in height measured from finished grade to the bottom of the crossbar from which the swings are suspended.

8.22 **Street Furniture**

B.L. # 539,
02APR01

All street furniture for the core area as identified in Schedule 2 shall comply with the following:

8.22.1 Litter Bins are to be Glasdon "Brunel"TM or equivalent approved by the City Engineer.

8.22.2 Recyclable beverage container bins are to be Glasdon "Brunel"TM or equivalent approved by the City Engineer.

8.22.3 Benches are to be Victor Stanley Model s-13 with IPE Hardwood slats 6 feet long and powder coat colour DURA COAT P-6196-7 BURGUNDY MAROON, or equivalent approved by the City Engineer.

8.22.4 Bicycle racks are to be powder coat colour DURA COAT P-6196-7 BURGUNDY MAROON.

8.23 Vandal and Stunt Proofing Measures

B.L. # 666,
17JUN02

8.23.1 All concrete planters and curbs higher than 200mm above finished grade constructed in a City of Langford right-of-way or park within the downtown core area as identified in Bylaw 150 shall have 200mm long 25mm x 25mm chamfered edges at 400mm intervals, or approved alternate.

B.L. # 666,
17JUN02

8.23.2 All street trees planted within the downtown core area as identified in Bylaw 150 shall be a minimum 75mm caliper at 1200mm above finished grade. The lowest branches shall be no less than 2100mm above finished grade.

B.L. #666,
17JUN02

8.24 Line Painting and Traffic Marking

All painted crosswalks and stop bars shall be "Thermoplast" in accordance with the Ministry of Transportation specification or approved equal.

9.0 STORM WATER MANAGEMENT

9.1 Storm Water Management Requirements

B.L. #721
06JAN03

9.1.1 General Information

SD-1 illustrates the major water courses within the City of Langford. Existing major storm water control and/or treatment areas are shown. These areas are to be preserved unless professional storm water management studies indicate otherwise. The areas of the municipality where storm water infiltration and storm water detention (storage) are required for development are also shown on **SD-1**.

For all subdivisions and developments in all areas of Langford, drainage structures and features are required that will improve the quality of site drainage water, minimize erosion and retain sediments.

In the infiltration areas, the sandy and gravelly soils have high infiltration potential and surface drainage conveyance structures are limited, therefore the primary means of storm water discharge will be by infiltration.

In the detention areas, storm water storage is required to control post development storm water release rates. Storm water storage may also be used in other (non-detention) areas as an alternative to upgrading downstream conveyance capacity if analysis shows capacity to be inadequate for the design flows. Except where infiltration is required and achievable, a municipal storm drain is required to serve each existing and newly created lot.

Where parkland in excess of 0.25 ha has been dedicated to the City in conjunction with the proposed subdivision or development, storm water detention and treatment facilities may be located within the park, if in the opinion of the City Engineer the treatment and detention area will not detract from the aesthetics of the park and will not affect environmentally sensitive areas within the park and the usefulness to and safety of the public.

If, in the opinion of the City Engineer, the developer can demonstrate that a community detention area for future developments within a specific storm drainage catchment area would be preferable to permanent on site storage facilities, then permanent storage and treatment areas on site may not be required. The

developer shall provide land dedication or cash in lieu of this community detention area (by DCC or otherwise) and shall provide temporary facilities and the infrastructure to direct storm water to those future detention areas in accordance with schedule 3 of this bylaw. Any lands required for the temporary facilities shall have a right-of-way on favour of the City of Langford for storm drainage which may expire when the community detention area is constructed.

9.1.2 For subdivisions and developments of areas greater than 1.0 hectare (ha) in size (Large Sites) a storm water management plan prepared by a professional engineer is required which will show:

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9.1.2.1 Scaled topographic site plan with existing cadastral and proposed development layout.

9.1.2.2 Drainage catchment areas showing contributory area to the site, onsite subcatchments, cumulative catchments and points of discharge.

9.1.2.3 Predevelopment and post development flows.

9.1.2.4 Internal drainage structures for conveyance, control and treatment.

9.1.2.5 Existing and proposed offsite works.

9.1.2.6 Erosion and sediment control works.

For these subdivisions and developments the designer is encouraged to use combinations of engineered wetlands and ponds to conform to the water quality and runoff rate requirements.

Within the areas where storm water detention is required, the professional engineer shall certify that for all events up to the estimated 200 year runoff event there will be no increase in water levels or rates of erosion at any point in the watershed as a result of the development compared to original site conditions, before the removal of natural vegetation. Schedule 3 of Bylaw 500 provides certification requirements.

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06JAN03

9.1.3 For developments of area less than or equal to 1.0 ha in size (Small Sites) specific pre-engineered structures for storm water treatment, infiltration or detention described in these requirements may be used as an alternative to certifying that no downstream impacts will occur.

B.L #721
06JAN03

9.1.4 All structures intended for occupancy shall be designed with the underside of the floor system situated 600 mm (1000 mm adjacent to Millstream Creek, between the Trans Canada Highway and Treanor Ave.) above the 200 year peak instantaneous flood elevation. The City of Langford's Storm water Management Plan provides flood profiles for all major creeks and lakes. Where adjacent flood elevations are not available the hydraulic profile shall be extended through hydraulic analysis to the development site, except where the site is clearly above the estimated flood elevations. All habitable structures shall also be protected from flooding by grading drainage away from the structure and providing overland flow routes through the site that are capable of safely conveying away the 200 year runoff event. These routes, if not on roadways, shall be maintained in perpetuity and protected with rights of way in favour of the District.

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9.1.5 All minor systems, those designed and installed as part of the works and services for the subdivision or land development, shall be designed for a 10 year peak flow rate.

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06JAN03

- 9.1.6 All minor systems associated with a commercial, industrial, multi family or institutional development as described by Zoning Bylaw No. 300, shall be designed for the 1:25 year storm.
- 9.1.7 Previously undeveloped areas must create an overland route within the subdivision or development for the 1:200 year rainfall event to allow for the failure of the drainage system. This route must be physically protected and have a right-of-way in favour of the District.
- 9.1.8 All parking lots in subdivisions or developments that create more than three parking spaces are to be paved with asphalt, concrete or brick pavers.
- 9.1.9 Where, in the opinion of the City Engineer, future development or subdivision shown in the Official Community Plan for the City is probable for the lands adjacent to the development or subdivision, storm sewers must be extended to the property boundary and terminated with a cleanout or a manhole in accordance with this Bylaw. A right-of-way in favour of the City must be provided for this storm sewer on private property for access and maintenance.
- 9.1.10 Storm sewers are required in the road right of way adjacent to the subdivision or development for all new highways, and for existing highways in accordance with Schedule 2 of this Bylaw.
- 9.1.11 If a vertical seepage pit is installed to City of Langford standards for in ground storm water disposal systems for the 1:10 Year Storm, the developer is not required to treat storm water with a Stormceptor™ or approved equal prior to disposal unless the disposal system is constructed in conjunction with required improvements for an auto repair or service facility, gas stations, or property zoned for industrial uses.

B.L. # 539,
02APR01

9.2 Tributary Area Schematic

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06JAN03

- 9.2.1 Runoff calculation for subdivisions and development of Small Sites may be by the Rational Method. Analysis of upland and downstream catchments, up to a maximum of 10 ha, may also be calculated with the Rational Method. Calculations shall be submitted in tabular form in accordance with **SD-2** and certified by a professional engineer. For larger catchments reference shall be made to the Storm water Management Plan for pre-calculated values. The values shall be verified by the City prior to use by the developer's engineer. Original calculations for Large Sites and areas exceeding 10 ha shall be performed with a hydrograph method. Design parameters shall reflect BC west coast conditions.

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06JAN03

- 9.2.2 A tributary area plan shall accompany the runoff calculation and include:

9.2.2.1 Scaled topographic site plan with existing cadastral and proposed development layout.

9.2.2.2 Drainage catchment areas showing contributory areas to the site, on-site subcatchments for each inlet, manhole and outlet.

9.2.2.3 Locations of other drainage structures including silt traps, oil grit separators, and storage chambers.

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06JAN03

9.2.2.4 Provision shall be made for servicing lands beyond (upstream) from the site by providing a point of access on a right of way and adequate conveyance capacity within the subdivision or development.

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06JAN03

9.2.3 Rainfall intensity shall be taken from the intensity-duration-frequency (IDF) curves provided in **SD-3**. The minimum initial time of concentration shall be 10 minutes. For catchments which will remain undeveloped, the time of concentration shall be calculated using good engineering judgement.

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06JAN03

9.2.4 Runoff coefficients for subdivision or development shall, as a minimum, conform to the values below

Impervious areas	0.90
Landscaped areas	0.40
Natural areas:	Slopes up to 10% - 0.3
Slopes greater than	10% - 0.5

The professional engineer shall be responsible for selecting larger coefficients if appropriate, for the site.

9.3 Runoff Coefficients

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9.3.1 Where soils will be exposed by land clearing, measures shall be taken to minimize potential erosion following the concepts illustrated in **SD-4**, including:

- 9.3.1.1 Scheduling works for the period April through October inclusive, to the extent practical.
- 9.3.1.2 Clearing the minimum possible land area.
- 9.3.1.3 Clearing immediately before construction commences.
- 9.3.1.4 Restricting vehicle access and providing a surfaced working area.
- 9.3.1.5 Suspending construction activities during rainy periods and when soils are saturated.

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06JAN03

9.3.2 All disturbed surfaces shall be protected against the loss of soils through the use of silt fencing as shown in **SD-5** to be located wherever surface drainage will leave the site as overland flow. Watercourses and ditches shall be protected by placing the silt fencing along the bank of the channel. Bare areas subject to erosion shall be covered by hand placed straw mulch.

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9.3.3 Where disturbed catchment areas exceed 0.20 ha a sediment basin as described in **SD-6**, shall be constructed. This requirement may be waived in rocky areas or if construction is completed in the April to October period and finished with a non-erodible surface.

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06JAN03

9.3.4 Erosion and sediment control measures shall be constructed before clearing and earthworks commence and remain in place until at least 80% of all building construction and landscaping are complete. Sediment traps may be converted to constructed wetlands at this time. Sediment traps shall be clear of sediments on September 30 each year and re-excavated any time the available storage has been reduced by one-third of the original volume.

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06JAN03

9.3.5 Despite the requirements of this section it shall be the responsibility of the professional engineer to specify appropriate measures and ensure that sediment-laden water and any other deleterious substances do not leave the site or reach aquatic habitat areas.

9.4 **Pipe Main Parameters**

- 9.4.1 Roughness coefficients: 0.013
- 9.4.2 Minimum diameter: 200 mm
- 9.4.3 Minimum velocity: 0.75 m/sec. (flowing full or half full)
- 9.4.4 Maximum velocity: 7.5 m/sec
- 9.4.5 Above this maximum velocity, special consideration must be given by the Professional Engineer to incorporate pipe materials and construction methods, including pipe anchorage, scour protection and energy dissipation to the satisfaction of the City Engineer.
- 9.4.6 Pipes may be laid to a radius not less than the minimum recommended by the manufacturer. The Professional Engineer shall make allowance for head losses caused by the curvature.
- 9.4.7 Mains shall have at least 1.0m cover and be deep enough to provide drainage to 0.6m below the existing or proposed basement floor elevation of each property being serviced based on a 2.0% grade from the main obvert.
- 9.4.8 The choice of pipe material and manufacture will be governed by site condition.

9.5 **Manholes**

9.5.1 Manholes shall be provided at all changes in grade, pipe size and horizontal alignment for non-curvilinear sewers. For curvilinear sewers, manholes will be provided at the beginning and end of the pipe curvature. The maximum distance between manholes shall be as follows:

Pipe Size (mm diameter)	Maximum Distance (m)
375 and smaller	125
450 to 750	155
900 and larger	185

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- 9.5.2 Cleanout structures may be used at the upper terminus where the main will not be extended and the end of the present construction is within 45m of an existing manhole. Cleanout structures shall be constructed in accordance with drawing SS-S6. Manhole structures shall be in accordance with MMCD S2.
- 9.5.3 Drops are required at change of grade or alignment. A minimum drop of 60mm shall be provided where the inlet is not at 180° to the outlet. The maximum slope of the invert of the channels in a manhole shall be four horizontal to one vertical.
- 9.5.4 The maximum inside pipe diameter is 250mm.
- 9.5.5 The obverts of pipes entering a manhole shall match. Wherever a future storm sewer will be extended from a manhole a capped stub shall be placed at the grade size and location suitable for future extension. Where required, a temporary inlet shall be placed with its invert less than 900 mm below the road surface and connected to the stub with a manufactured wye.

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9.6 **Service Connections**

9.6.1 For all service connection criteria, refer to s. 11.4 of this bylaw.

9.7 Inspection Chambers

BL #630,
17DEC01

9.7.1 For all inspection chamber criteria, refer to s.11.5 of this bylaw.

9.8 Catch Basins

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17DEC01

B.L. # 840,
05APR04

9.8.1 Catch basins as detailed in **MMCD Drawings supplements SD11** shall be provided as required to collect from a maximum area of 400 square metres of road, at the beginning of curb returns to which water flows and at low points. Leads will be a minimum 150 mm diameter. Rim elevations shall be 30 mm below finished pavement grade.

9.8.2 Open bottom catch basins shall be used in conjunction with either a vertical seepage pit or an oil/silt treatment facility, and not as a stand alone storm water disposal unit.

B.L. # 840,
05APR04

9.9 Inlet Structures

Storm sewer inlet structures shall be provided when the following conditions are encountered:

9.9.1 Type I inlet (MMCD drawing No. S13) used where a ditch carries storm water into the storm system of the proposed subdivision or development and the inlet pipe is not greater than 450mm in diameter;

9.9.2 Type II inlet (MMCD drawing No. S13) same as Type I inlet except that the inlet pipe is greater than 450 mm in diameter;

9.9.3 Lawn basin (MMCD drawing No. S12) in local low spots where storm water is unable to reach the storm system by a ditch.

9.9.4 Headwalls other than those described in sections 9.9.1 and 9.9.2 of this bylaw must be mortared rock. Sandbag headwalls are not permitted.

B.L. # 840,
05APR04

9.10 Outfall Structures

9.10.1 Sandbag outfall structures shall be provided where the storm system discharges into an open channel other than a watercourse. The end of the storm sewer shall project 300 mm from the toe of the backfill and shall be placed on standard sandbags filled with 17 MPa dry concrete mix in accordance with MMCD S15 (replace concrete blocks with sand-cement bags). The area around and over the storm sewer shall be built up with sandbags to a height of two rows of sandbags over the storm sewer pipe. A rock riprap apron or other velocity dissipating structure shall be placed immediately downstream.

9.10.2 Cast in place reinforced concrete outfall structures shall be provided at all watercourses. In all cases energy dissipation shall be provided to reduce maximum outlet flow velocity to 1.0 m/s.

9.11 Mitigation Plan

9.11.1 The owner of lands for which an application to subdivide or develop has been submitted is required to prepare and submit a mitigation plan at his expense. The mitigation plan is required where there are reasonable grounds to anticipate discharge of contaminants, pollutants or toxic material to natural watercourses, municipal ditches and sewage systems, public or private lands, waters or the

atmosphere.

- 9.11.2 A mitigation plan shall be prepared by a Professional Engineer and submitted under professional seal. The plan shall include a statement of the expected nature, amount and concentration of contaminants, pollutants and toxic materials from the land which are expected to be discharged to adjoining lands, water, natural watercourses, utility systems or the atmosphere during the course of subdivision, construction and development of the land.
- 9.11.3 A mitigation plan shall state the pertinent environmental standards that will govern the proposed discharge of contaminants, pollutants or toxic materials to the air, soil or water during the course of subdivision, construction and development of the land.
- 9.11.4 A mitigation plan which requires works and services or facilities to control pollution or discharge during subdivision and development of the lands will include detailed plans and specifications of the works and services or facilities sealed by a Professional Engineer. Where a mitigation plan requires these works and services or facilities, the Professional Engineer shall submit a letter of supervision that is an undertaking to inspect the construction, operation and decommissioning of the pollution control works and services and facilities.
- 9.11.5 The standard of discharge for siltation setting ponds shall be in accordance with the publication: *“Interim Guidelines for Residential Development and Protection of the Aquatic Environment”*.
- 9.11.6 The mitigation plan shall be referred to the Ministry of Environmental and Parks where a discharge is anticipated to a municipal utility system or to the atmosphere; or the removal of contaminated soil or fluid from the site is required.

9.12 Vertical Seepage Pits

- 9.12.1 Vertical seepage pits are to be Lombard 1200mm drywall barrel DW-1.
- 9.12.2 Ladder rungs shall be to WCB standards.
- 9.12.3 The depth and quantity of drain rock shall be specified by the professional engineer and approved by the City Engineer.
- 9.12.4 The lid shall be 660mm stamped “Langford Drain”.
- 9.12.5 Cover and frame to be “Alf’s Castings” C44A or equivalent approved by the City Engineer.
- 9.12.6 Drain rock shall be 75-150mm clean drain rock.

B.L. # 539,
02APR01

- 9.12.7 Drainage water quality improvements for all subdivisions and land developments shall be achieved preferably with a constructed wetland as shown in **SD-12**. With outlet control and sufficient live storage, the wetland may also serve as a detention pond. The permanent water surface area (as defined by the outlet culvert invert) shall be a minimum of 1% of the contributory catchment area. The constructed wetland shall have a normal outlet capacity for the peak 10 year design flow and an emergency overflow capacity for the 200 year peak design flow that is routed in such a way that it does not flood downstream property or subject it to erosion.

B.L. #721
06JAN03

- 9.12.8 Constructed wetlands shall designed by or in consultation with a professional who specializes in wetland designs.

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06JAN03

- 9.12.9 Where constructed wetlands are not used, proprietary systems with filtration media may be approved if certified performance and a specification for the site are submitted for approval by the City Engineer.

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9.12.10 For Small Sites, or small catchments within Large Sites that cannot be directed to a constructed wetland, the following alternative storm water treatment techniques may be used:

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- SD-13 - Grass Swale
- SD-14 - Filter Strip
- SD-15 - Oil/Grit Separator Chamber with External High Flow Bypass
- SD-16 - Oil/Grit Separator - Type 1
- SD-17 - Oil/Grit Separator - Type 2

These treatment facilities shall be designed on the basis of the post development peak "6-month" event which is deemed to be 60% of the 2-year peak flow. Oil/grit separator chambers may be proprietary or non-proprietary. Design criteria for non-proprietary separators are included on the standard drawings. These concepts are expected to remove approximately 90% of the sediment particles larger than 100 microns (0.1 mm).

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9.12.11 Proprietary systems including enhanced manholes, swirl concentrations and deflection screen technologies may be used providing the project engineer can clearly demonstrate that the proposed system will treat storm water to the same criteria as 9.12.2 and the proposed system is certified for performance by the project engineer for the specific site.

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9.13 Stormwater detention (storage) may be combined with a constructed wetland or oil/grit separator chamber or provided in a separate detention facility such as a pond or underground chamber. The 2 year event shall be controlled to prevent watercourse and aquatic habitat impacts. The 10 year event shall be controlled to protect downstream conveyance capacity. The required live storage volumes and corresponding release rates are tabulated below. Where both 2 year and 10 year control is required, the combined storage requirement is also provided.

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Site Soils		2 year	10 year	2 and 10 year combined
Rocky <500 mm of soil	Live storage (m ³ /ha catchment without native vegetation)	100	120	180
	Controlled release rate (L/s/ha total catchment)	10	20	10 and 20
Soils >500 mm of silts and clays	Live storage (m ³ /ha catchment without native vegetation)	110	135	200
	Controlled release rate (L/s/ha total catchment)	8	16	8 and 16
Soils >500 mm of sands and gravels	Live storage (m ³ /ha catchment without native vegetation)	125	150	2 and 10 year combined 225
	Controlled release rate (L/s/ha total catchment)	5	10	5 and 10

The following facilities may be used alone or in combination to achieve the desired detention and treatment. **SD-18** shows a typical flow control manhole for use at stormwater detention facilities where only the two year event is being controlled. **SD-19** shows a combined detention and oil/grit separator. **SD-20** illustrates a detention facility that will serve a 0.5 ha site that will have no remaining native vegetation and is rocky with 15% slopes and must provide detention for both the 2 year (watercourse protection) and 10 year (storm drain capacity protection) events.

Stormwater storage volumes may be reduced if used in combination with an infiltration system designed in accordance with good engineering practice. The reduction in the storage requirement shall be proportional to the percentage of peak 2 year event post development discharge that is infiltrated to ground. Stormwater storage may be eliminated if the peak 2 year event post development discharge downstream from an infiltration system does not exceed the release rate tabulated above.

- 9.14 Infiltration systems shall incorporate appropriate pre-treatment systems (for example an oil/grit separator) to protect contamination of the disposal field with fines.

10.0 WATER SUPPLY

- 10.1 Each parcel in a subdivision shall have a water supply provided by the Capital Regional City Water Department except that where the proposed parcel size is greater than 0.8 hectares, the zoning is residential, agricultural or rural and the distance measured in metres from the nearest part of the land to the nearest Capital Regional City Water Department water main is more than 20 times the number of proposed parcels or where the subdivision is permitted under s.996 of the *Local Government Act*, individual wells may be permitted provided that each parcel shall have a proven source of potable water of not less than 3,400 litres per day and the individual wells are capable of fulfilling the supply and pressure requirements of the *British Columbia Plumbing Code*.

B.L. # 539,
02APR01

- 10.2 Each parcel in a residential subdivision which is provided with a water supply from the Capital Regional City Water Department shall have sufficient pressure in the water supply at the property line to meet the requirements of the BC Building Code and shall be shown to have sufficient pressure to meet the requirements of the BC Building Code for water pressure at the faucet at the highest point at which a plumbing fixture could be installed on the parcel having regard to the restrictions in the City Zoning Bylaw and in any Covenants registered on the property. A Professional Engineer shall approve and certify the required pressures.

B.L. # 501,
19JUN00

10.3 Fire Hydrants

The centre of the building envelope as identified in Bylaw 300 for the appropriate zone shall be within 150 metres, measured along the access route as defined in Building Bylaw No. 650 and along the highway to which the access route connects, of a fire hydrant capable of producing 2700 litres per minute of water for two hours with a residual pressure of 138 kilopascals. Notwithstanding any other statements in this paragraph, after December 31, 2002, the required fire hydrant production rate shall be 4800 litres per minute for two hours. For one and two lot subdivisions where the subject property is outside the jurisdiction of the Capital Regional City Water Department a fire hydrant is not required providing the property is charged with a s.219 of the *Land Title Act* covenant that

B.L #721
06JAN03

requires all buildings over 300 square feet in area to be serviced with residential fire sprinklers in accordance with NFPA 13D.

B.L #970
27JUN05

10.3.1 The centre of the building envelope as identified in Bylaw 300 for the appropriate zone shall be within 150 metres, measured along the access route as defined in Building Bylaw No. 650 and along the highway to which the access route connects, of a fire hydrant capable of producing 4800 litres per minute of water for two hours with a residual pressure of 138 kilopascals.

10.3.2 For one and two lot subdivisions where the fire flows are less than 4800 litres per minute, but greater than 2700 litres per minute, the developer need not comply with s.10.3.1 if all new buildings over 300 square feet in area on the subdivided lots are serviced with residential fire sprinklers in accordance with NFPA 13D and the subdivided lots on the property shall be charged with a s.219 of the *Land Title Act* covenant that requires all new such buildings over 300 square feet in area to be so serviced and the sprinklers properly maintained with residential fire sprinklers in accordance with NFPA 13D, unless, in the opinion of the City Engineer, it is not unreasonably cumbersome for the development to bear the costs of the system upgrade to provide adequate flows, the cost of the system upgrade is not unreasonable in view of the increased level of safety that it would afford, in which case the developer must make those improvements to achieve the 4800 lpm as a condition of subdivision approval.

10.3.3 For one and two lot subdivisions where the subject property is outside the jurisdiction of the Capital Regional District Water Department, a fire hydrant is not required providing all new buildings over 300 square feet in area on the subdivided lots are serviced with residential fire sprinklers in accordance with NFPA 13D and the subdivided lots are the property is charged with a s.219 of the *Land Title Act* covenant that requires all new such buildings over 300 square feet in area to be so serviced and the sprinklers properly maintained with residential fire sprinklers in accordance with NFPA 13D, unless, in the opinion of the City Engineer, it is not unreasonably cumbersome for the development to bear the costs of the system upgrade to provide adequate flows, the cost of the system upgrade is not unreasonable in view of the increased level of safety that it would afford, in which case the developer must make those improvements to achieve the 4800 lpm as a condition of subdivision approval.

10.4 Each parcel in a subdivision which is zoned for commercial, industrial or institutional use shall be within 30 metres of a water main capable of supplying a minimum of 5000 litres per minute of water for four hours with a residual pressure of 138 kPa.

10.5 Where ever possible and, in the opinion of the Approving Officer, practicable pipes supplying water to a subdivision or development shall be free of dead ends or shall be constructed to the property boundary of the subdivision or development so that future subdivision or development shown in the Official Community Plan for the City can provide for the continuation of these water supply lines to eliminate dead ends.

10.6 Where a water tower or reservoir is required to provide adequate supply to the subdivision or development, an independent review by an environmental and a geotechnical engineer is required. The location and access routes shall be approved by the City Engineer, adjacent municipalities, the Capital Regional City Water Department, the Capital Regional

City Parks Department, the Ministry of Environment, Lands and Parks and any other jurisdictions having authority. It must be demonstrated by the developer that the proposed tower or reservoir will not interfere with the aesthetics of the existing and potential future development of the surrounding area.

- 10.7 Fire Hydrants on private property shall have a right-of-way in favour of the City for maintenance, and shall be installed and mounted by the Capital Regional City Water Department.

BL #630,
17DEC01
(Complete
Section 11)

11.0 SEWAGE DISPOSAL

11.1 General

- 11.1.1 Each parcel in a subdivision shall be connected to the municipal sewer system unless the distance measured in metres from the land to be subdivided to the nearest municipal sewer is greater than 20 times the number of parcels which can, in the opinion of the Approving Officer, be created on the land given the minimum parcel size permitted in the relevant zone at the time of application.
- 11.1.2 Each parcel in a subdivision which is not connected to the municipal sewer system shall have an area for sewage disposal approved by the Capital Health Region Environmental Health Officer or shall have secure access to such an approved area for sewage disposal on another parcel.
- 11.1.3 No new subdivision or development that creates new parcels less than 1 hectare in area will be permitted in the City of Langford unless serviced by a municipal sanitary sewer system.
- 11.1.4 Any existing in-ground disposal system in a development or new subdivision shall be decommissioned and removed to the satisfaction of the City Engineer if it is the intent of the developer to provide a new in ground disposal system or to connect to the Municipal Sewer System. Any existing sewage disposal systems shall be shown on the construction drawings.
- 11.1.5 Wherever, in the opinion of the City Engineer, future development or subdivision shown in the Official Community Plan for the City is probable for the lands adjacent to the development or subdivision, sanitary sewers must be extended to the property boundary and terminated with a capped stub or a manhole placed at the grade. Size and location suitable for the future extension shall be to the satisfaction of the City Engineer.
- 11.1.6 Applications for approval of proposed construction crossing a high-pressure gas distribution main must be made by the Professional Engineer with the consent of the City Engineer to the proper authorities.
- 11.1.7 If, where a sewer main is to be constructed within the travelled surface of a road, and, in the opinion of the City Engineer, the road structure of the road will be compromised by the construction of the sewer, then the affected portion of the road shall be overlaid to the standards in this bylaw but with a minimum of 38mm of new asphalt for the entire width of the road.

BL #810,
15DEC04

11.2 Design Criteria

11.2.1 Sewage Flow Design Criteria

Residential Flow	250 L/capita/day
Infiltration	3,750 L/ha/day
Storm water Inflow	3,750 L/ha/day
Commercial Flow	31,500 L/ha/day
Industrial Flow	27,500 L/ha/day
Institutional Flow	34,000 L/ha/day

11.2.2 Main Pipe Parameters

Minimum Ø	200mm
Terminus piping	150mm at 2% grade
Minimum velocity:	0.61m/sec. at full pipe
Minimum gradient:	1.00% for terminal sections
Maximum velocity:	6.10m/sec
Roughness coefficients	0.013
Acceptance of existing systems	In accordance with the Official Community Plan and the Sewer master Plan as directed by the City Engineer

11.2.3 Pipes may be laid to the minimum vertical and/or horizontal radius of 60 metres or as recommended by the manufacturer, providing the design velocity (full pipe) is increased to 0.914 m/s for the curved section.

11.2.4 Mains shall have at least 1m cover and be deep enough to provide drainage at 2% minimum gradient from 600mm below basement floor elevation to obvert of pipe crown for new parcels. 1.5 metres of cover from the road surface in existing highways is acceptable. Cover shall be 0.6m at ditch inverts.

11.3 Manholes

11.3.1 Manholes shall be provided at all changes in grade, pipe size, horizontal alignment (for non-curvilinear sewers) and at the upper end of mains not to be extended in the future. Only one curve, horizontal and/or vertical, is permitted between manholes. In addition to the foregoing, additional manholes shall be constructed so that the maximum distance between manholes is as follows:

Pipe size (mm Ø)	Maximum Distance (m)
375 and smaller	125
450 and 750	155
900 and larger	185

11.3.2 In cases where the sewer will be extended in the near future and the end of the present construction is within 45m of an existing manhole, the City Engineer may allow the use of a cleanout structure in accordance with drawing SS-S6 in place of a manhole.

11.3.3

11.3.3.1 Outside-drop manholes will be permitted, if in the opinion of the City Engineer, the circumstances preclude the use of normal manholes. These shall be constructed wherever the change in invert elevations through the manhole is greater than 600mm. Elevation changes greater than 600mm shall be by way of an outside drop only. Allowance shall be made in the design for the effect of the resulting turbulence on the hydraulic capacity of the system.

11.3.3.2 The relative elevations entering and leaving a manhole must not reduce the hydraulic capacity of the system

11.3.3.2.1 Allowances for energy losses or changes in velocity are to be determined in accordance with sound hydraulic principals.

11.3.3.2.2 Junctions will require special treatment as will all situations involving a pipe flowing into a smaller pipe at a steeper grade.

11.3.3.3 Stubs shall be placed in manholes to allow for future connections. The length of the stubs shall be 600mm maximum from the outside of the manhole. The end shall be securely capped to the satisfaction of the City Engineer. Grades shall be minimal.

11.3.4 Manhole benching shall be a steel trowel finish with a constant grade from the inlet(s) to the outlet. The benching inside radius shall be no less than three times the branch diameter.

11.3.5 All channels shall be constructed to permit use of a pan and tilt camera having dimensions of 600mm x 150mm diameter. Benching must be tested with a mock up plug to ensure conformance.

11.3.6 The obvert of pipes entering a manhole shall not be lower than 50mm above the obvert of the outlet pipe. The internal channel in the manhole shall have an elevation difference of 5% from the inlet to the outlet.

11.3.7 Man-holes and cleanout lids are to be set to match existing or planned grades both longitudinally and transversely. If the highway grade is greater than 6%, manhole castings shall be encased in a concrete surround poured to 75mm below the rim.

11.3.8 All manholes shall be installed with rubber gaskets and shall be grouted inside and outside with "RCI" rapid set non-shrink grout or approved equal.

11.3.9 If, in the opinion of the City Engineer the water table may be high enough to affect the manhole, fiberglass bases in a concrete GU[®] liner are required.

11.3.10 If, in the opinion of the City Engineer the construction of buildings within the new subdivision or development may cause excessive sands, gravels and debris to be deposited in the downstream lift station, then a grit chamber shall be provided at the last downstream sanitary manhole(s) in the system.

BL #791
15SEP03

BL #791
15SEP03

11.4 Service Connections

- 11.4.1 Sanitary and storm sewer service connections of adequate size, but not less than 100mm Ø shall be provided from a main to the property line of each new or existing parcel, which forms part of the development or which fronts a highway or other right-of-way in which the sewer is to be constructed and shall be constructed in accordance with MMCD S7.
- 11.4.2 All service connections shall be provided with an inspection chamber at the property line or at service the right-of-way boundary in accordance with drawing SS-S9.
- 11.4.3 All service connections shall terminate a distance inside the property line equal to the depth at the property line for new parcels unless otherwise approved by the City Engineer and at property line for existing parcels at a location agreed upon by the owner. All stubs must have a 1% minimum gradient from the inspection chamber into private property for the Building Code and 2% minimum from the sewer main to the inspection chamber, in accordance with the MMCD Documents.
- 11.4.4 Where deep sewers exist (those installed at greater than 3 meters below finished grade), the service stub shall be terminated within 1.0 vertical meters of the minimum basement floor elevation and marked with a 2x4 stake. The service connection shall have a long radius sweep embedded in concrete and be installed at no more than 45 degrees from the vertical.
- 11.4.5 Duplex lots shall have a 150mmØ service connection with two 100mmØ stubs and two inspection chambers or may terminate at a 6 x 4 x 4 duplex inspection chamber. Storm Drain duplex inspection chambers shall have a grit sump. Lots with duplex potential shall have a 100mmØ service connection.
- 11.4.6 Wherever possible, adjoining lots shall be serviced with one 150mmØ service connection with one 100mmØ stub and one inspection chamber for each lot, or may terminate at a 6 x 4 x 4 duplex inspection chamber.

B.L. # 666,
17JUN02

B.L #721
06JAN03

11.5 Inspection Chambers

- 11.5.1 All inspection chamber (IC) lids and collars shall be “Le-Ron” plastics and shall be installed in accordance with drawing SS S9. The lid cams shall be securely tightened to ensure that they are not subject to vandalism or misuse. Cast iron IC lids may be substituted for the plastic covers in existing asphalt or concrete driveways.
- 11.5.2 Inspection chambers that fall in a driveway, path, gravel shoulder or any area that, in the opinion of the City Engineer, will be traveled upon at any time, shall have a cast iron chamber cover and concrete surround in accordance with drawing SS S9.
- 11.5.3 Any inspection chamber set in a slope greater than 3% shall have a cast iron chamber cover and concrete surround in accordance with drawing SS S9.
- 11.5.4 Wherever an IC is covered by a cast iron chamber cover, the clearance between the cast iron lid and the plastic lid shall be a minimum of 75mm.
- 11.5.5 Inspection chambers shall be supplied and installed without plugs.
- 11.5.6 The inspection chamber lid shall be fastened to the riser pipe with a stainless steel machine bolt as provided by the manufacturer.

- 11.5.7 Where property line is within 1 meter of the backside of a sidewalk or curb the inspection chamber shall be installed using cast iron inspection chamber cover specified in drawing SS S9, in a cast in place concrete apron protruding from the sidewalk or curb toward the property. This apron shall be constructed to the same engineering specifications as the sidewalk and shall provide a minimum of 200mm of concrete from the edge of the cast iron lid to the edge of the apron. An expansion joint at the sidewalk or curb to apron interface shall be provided.
- 11.5.8 Inspection chambers shall be a minimum of one meter apart from centre to centre when installed, unless, in the opinion of the City Engineer the clustering of services would be beneficial to site servicing and layout, in which case the sewer and drain connections may be installed on one adjoining property line. CRD Water meter boxes may then be installed on the next adjoining property line with the same cast in place apron.

11.6 Force Mains

- 11.6.1 At the lowest pump delivery rate anticipated to occur at least once per day, a cleansing velocity of at least 0.9m/s shall be maintained. The maximum velocity should not exceed 3.5m/s.
- 11.6.2 An automatic air/ vacuum relief valve shall be placed at high points in the force main to prevent air locking, in accordance with good engineering practice.
- 11.6.3 Force mains should enter the gravity sewer system at a point not more than 600mm above the flow line.
- 11.6.4 The minimum size for mains discharging raw sewage shall be determined for each specific project by a Professional Engineer.
- 11.6.5 Force main service connections shall be a minimum 50mm Ø, and shall have a check valve and a ball valve at the property line.
- 11.6.6 Force main service connections shall be within 1 metre of the property line on the municipal right-of-way.
- 11.6.7 A trailing wire shall be installed for the purpose of locating the force main and a warning tape clearly marked "Force Main" shall be placed a minimum of 300mm and a maximum of 600mm above the obvert of the force main and service connections. The trailing wire shall be installed along the obvert of the force main and service connection
- 11.6.8 All force mains shall be designed to prevent damage from superimposed loads, or from water hammer or column separation phenomena.
- 11.6.9 Pipe bedding shall be a minimum depth of 150mm of sand under and 300mm above the pipe. Concrete protection and depth (minimum 1.2m) and nature of cover should be designed to meet the anticipated loadings and ground conditions and generally conform to pipe manufacturer's specifications.
- 11.6.10 Cleanouts shall be provided at all low points in the system and at the system terminus.
- 11.6.11 All force main ties to gravity feed shall be designed to avoid confluence turbulence.
- 11.6.12 All force main gate valves shall be right hand closing.
- 11.6.13 Check valves shall be provided where required for maintenance.
- 11.6.14 A gate valve on the force main from the pump station is required.

B.L. # 666,
17JUN02

11.7 Testing

B.L #721
06JAN03

11.7.1 All sewer systems must be air tested to MMCD standards prior to final acceptance by the City Engineer. The contractor may wish to pre-test the system prior to this final test for his own assurances. The contractor must provide the City engineer with 24 hours notice of the air test.

B.L #721
06JAN03

11.7.2 All storm drains and sanitary sewers must be video inspected and the professional engineer must certify that all the videos have been viewed and that the sewer and connections are free of defects prior to submission to the City Engineer for review.

12.0 STREET LIGHTING, ELECTRICAL, TELEPHONE AND OTHER SERVICES SUPPLIED THROUGH WIRES

12.1 All public highways and paved walkways shall have street lighting installed. All wiring to service these lights shall be installed underground in ducts. Lighting shall be designed by a registered Professional Engineer. Lighting levels shall be in accordance with the most recent edition of the "Guide for the Design of Roadway Lighting" published by the Roads and Traffic Association of Canada and construction shall be in accordance with the B.C. Electrical Code. The type of street light required shall be in accordance with the following requirements:

12.1.1 All new and replacement streetlights in the core area shall be in accordance with Schedule 2A and Schedule 5.

12.1.2 All new and replacement streetlights on existing roads as identified in Schedules 2B and 2C shall be Type 3 as specified in Schedule 5.

BL #630,
17DEC01

12.1.3 All streetlights required for new road construction shall be in accordance with Schedule 1 and as specified in Schedule 5 for each road designation. "Powerlite TwistPak" street lights may be substituted for the Type 3 "Cyclone" street light if, in the opinion of the City Engineer, the development is adjacent to an industrial road and the development is industrial in nature in accordance with Zoning Bylaw No. 300 and the Official Community Plan.

BL #630,
17DEC01

12.1.4 Where Type 3 street lights and cobra head street lights are required, a combination thereof will be accepted if, in the opinion of the City Engineer, lighting requirements in accordance with section 12.1 of this bylaw can be achieved. If the developer wishes to upgrade the Type 3 standard, the Lumec DMS50 – Ocean Blue shall be the approved alternate to the "Cyclone" #CY1507.

12.1.5 Street lights shall be the same type and colour for new roads within a development. If street lights are to be installed on an existing road frontage, the City Engineer shall determine the colour. If the subdivision creates less than two new lots, "Landmark" style street light are in use and if in the opinion of the City Engineer the subdivision is located on an existing road where further future development is unlikely, then the "Powerlite Twistpak" type street light may be installed.

12.1.6 New highway extensions shall have the same lighting system as the existing highway, providing the lighting standard falls within the requirements of this bylaw.

B.L #721
06JAN03

12.1.7 Where a single street light or series of street lights is installed for a subdivision or development a controller base with a secure lockable compartment must be provided in accordance with manufacturer's specifications, unless a previously installed controller base exists in the series.

B.L. #840
05APR04

B.L. #840
05APR04

12.1.7.1.1 The controller base shall include on/off/auto switch and photo cell override. The on/off/override switch and panel shall be designed to accommodate the number of lights in the circuit as well as seasonal lighting and be upgradeable for future extensions. Photo cells shall be located in the light fixture not the controller base.

B.L. #840
05APR04

12.1.7.1.2 Concrete bases for all street lights shall be in accordance with MMCD drawings E1.2 for all Cyclone #1507 street lights, and shall be in accordance with MMCD drawing E1.3 for all others. If in the opinion of the City Engineer, site conditions preclude the installation of the above, a concrete base in accordance with MMCD drawings E1.5 or as designed and certified by the Professional Engineer may be permitted.

B.L. #840
05APR04

12.1.7.1.3 All street lights in the core area shall have electrical outlets.

B.L. # 840
05APR04

12.1.7.1.4 If in the opinion of the City Engineer an underground power supply in the road right of way is not available, street lights may be serviced from a temporary power source for one year, at which time they must be connected to underground service within the road right of way.

B.L. #840
05APR04

12.1.7.1.5 All street lights requiring banner arms shall have the banners supplied and installed at the time of street light installation.

BL #791
15SEP03

12.1.8 Concrete bases for street lights shall be in accordance with MMCD drawing E1.2 for all Cyclone #1507 street lights, and shall be in accordance with MMCD drawing E1.3 for all others. If in the opinion of the City Engineer, site conditions preclude the installation of the above, a concrete base in accordance with MMCD drawings E1.5 or as designed and certified by the Professional Engineer may be permitted.

B.L. #721
06JAN03

12.2 Where required by the City Engineer, streetlights must be fitted with an appropriate baffle or shield to deflect light away from private residences without compromising the effectiveness of the light on roads and walkways. All streetlights shall be fitted with an anti-cycling device.

BL #666,
17JUN02

12.3 Every parcel shall be supplied with electrical power and telecommunications services which shall include one telephone and one cable television in accordance with the requirements of the appropriate utility company.

12.4 Every extension of electrical, telecommunications services which shall include one telephone and one cable television and other services supplied through wires to a subdivision or development and any such services installed to a building constructed under Bylaw 210, shall be installed underground in ducts except in areas identified in Schedule 2 to this bylaw.

B.L. # 539,
02APR01

12.5 Where a development is adjacent to a road serviced by above ground services, the extension of electrical, telephone and other services supplied through wires to the parcel being developed must be underground except in the case of a development in an area identified in Schedule 2 to this bylaw, or of a subdivision that creates only one new lot and that is zoned residential, not located in the core area as identified in the Official Community Plan Bylaw No. 150 and adjoined properties on each side by a panel serviced by overhead wires. Any streetlights required in the frontage of the development must be serviced by underground wires.

B.L. # 539,
02APR01

12.6 Where the proposed residential development is not located in the core area as identified in the Official Community Plan Bylaw No. 150 and is creating no more than 6 new parcels that front on an existing highway serviced by overhead wires on the same side of the road as the proposed new parcels, those new parcels be serviced overhead through wires.

B.L #721
06JAN03

12.7 For roads 6 metres wide or less, if, in the opinion of the City Engineer, individual service boxes will create congestion, underground services shall use joint boxes wherever possible.

B.L. #787
5MAY03

12.8 Add Schedule 9, Road and Lighting Standards for Bear Mountain Estates. Road and Lighting Standards for Bear Mountain Estates shall apply to those lands as shown in Schedule 10 and no others.

13.0 REPEAL

“City of Langford Subdivision Servicing Bylaw No. 190 is hereby repealed.

READ a first time this 20th day of March, 2000.

READ a second time this 20th day of March, 2000.

READ a third time this 20th day of March, 2000.

ADOPTED this 3rd day of April, 2000.

Stewart Young
Mayor

Geoff Pearce
Clerk-Administrator

Amendments to Bylaw 500:

**Bylaws 501, 507, 539, 581, 630,
666, 721, 750, 787, 791, 796, 810,
840, 970, 975, 976, 1211, 1240
and 1244**