

DISTRICT OF LANGFORD

BYLAW NO. 721

AMENDMENT NUMBER 7 TO BYLAW NUMBER 500, "SUBDIVISION AND DEVELOPMENT SERVICING BYLAW NO. 500, 2000"

The Council of the District of Langford, in open meeting assembled, enacts as follows:

A. The District of Langford Subdivision and Development Servicing Bylaw No. 500, 2000 is amended as follows:

1. Add section 5.12

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

2. Add section 6.9.1

"The Geotechnical Engineer shall provide a digital photographic record of all completed 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."

3. Add section 6.21

"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. "

4. Add section 8.2.4.2:

"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."

5. Revise s.8.2.6.3 to read:

"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:

8.2.6.3.1 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

8.2.6.3.2 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

8.2.6.3.3 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.

6. Delete s. 8.2.6.4

7. Add section 8.2.6.5

“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.”

8. Add section 8.2.6.6

“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.

9. Add section 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”

10. Add section 8.3.7

“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 District is registered in the property. The right-of-way and covenant expire when the future road connection is complete.”

11. Add section 8.13.14

“ 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.”

12. Revise 8.16.3 to read:

“All landscaped areas as identified in Schedule 2 shall include automatic underground irrigation in accordance with the District 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.

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.”

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.”

13. Revise s.9.1 to read:

9.1.1 General Information

SD-1 illustrates the major water courses within the District of Langford. Existing major stormwater control and/or treatment areas are shown. These areas are to be preserved unless professional stormwater management studies indicate otherwise. The areas of the municipality where stormwater infiltration and stormwater 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 stormwater discharge will be by infiltration.

In the detention areas, stormwater storage is required to control post development stormwater release rates. Stormwater 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 District 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 District 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 stormwater management plan prepared by a professional engineer is required which will show:

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 stormwater 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.

- 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.
 - 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 District of Langford's Stormwater 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.
 - 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.
 - 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.”
14. Revise s.9.2 to read:
- 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 Stormwater Management Plan for precalculated values. The values shall be verified by the District 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.

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.

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.

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.

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.

15. Revise s.9.3 to read:

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.

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.

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.

- 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.
- 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.
16. Add section 9.12:
- 9.12.1 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.
- 9.12.2 Constructed wetlands shall designed by or in consultation with a professional who specializes in wetland designs.
- 9.12.3 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.
- 9.12.4 For Small Sites, or small catchments within Large Sites that cannot be directed to a constructed wetland, the following alternative stormwater treatment techniques may be used:
- 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).
- 9.12.5 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."

17. Add section 9.13:

9.13.1 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.

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.”

18. Add section 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.”

19. Revise s.10.3 to read:

“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 4,800 litres per minute for two hours. 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 the property is charged with a s.219 of the *Land Title Act* covenant that requires all buildings over 300 square feet in area to be serviced with residential fire sprinklers in accordance with NFPA 13D.”

20. Revise section 11.4.5 to read:

“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.”

21. Revise 11.7.1 to read:

“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.”

22. Add section 11.7.2 to read:

“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.”

23. Revise section 12.1.7 to read:

“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 manufacturers specifications, unless a previously installed controller base exists in the series. The controller base shall include on/off/auto switch and photo cell override”

24. Revise section 12.2 to read:

“All streetlights shall be fitted with an anti-cycling device.”

25. Add section 12.8:

“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.”

26. Revise Schedule 1 and drawings RX1 and RX2 to read:
 - a) One Way Roads: Road Width 5.0 meters
 - b) Two way roads: Road Width 6.0 metres.

27. Revise Schedule 2b to delete bike lanes two sides for Happy Valley Road (Luxton to Metchosin boarder), Sooke Lake Road, Humpback Road, Brock Avenue (Spencer to Florence Lake), Leigh Road South, Atkins Avenue (Winster to Silverstone), Selwyn Road South, Strandlund Road and Mill Hill Road and to require bike route signage in accordance with the District of Langford Bicycle Plan.

28. Revise Schedule 2c to delete bike lanes two sides for all roads and to require bike route signage in accordance with the District of Langford Bicycle Plan.

29. Schedule 4, Specifications for Tree Planting
 - a. Revise section 1.2 to read:

“Street Trees shall be planted in accordance with drawings L1, L2, L3a &b, L4 and L6 for the appropriate planting situation, and spaced between 15 and 20 metres for the trees in Table 1 and between 7.5 and 11 metres for trees in Table 3.”
 - b. Delete section 3.1
 - c. Delete drawing TR-1
 - d. Add drawings:
 - i. L1 - Street Tree Planting Detail – 1200mm- 1800mm Landscaped Boulevard Width
 - ii. L2 - Street Tree Planting Detail – 1800mm or Greater Landscape Boulevard Width
 - iii. L3a - Tree Planting Detail – Structural Growing Medium Pit
 - iv. L3b - Tree Planting Detail – Structural Growing Medium Pit
 - v. L4 - Tree Planting Detail for Slopes up to 3:1
 - vi. L6 - Shrub Planting Detail

30. Revise Schedule 5 to include the following:
 - a. Add drawing SD-1 Stormwater Control and Treatment Areas
 - b. Add drawing SD-2 Drainage Calculation Sheet
 - c. Add drawing SD-3 Langford Rainfall Intensity duration Frequency Curve
 - d. Add drawing SD-4 Lot Development Erosion and Sediment Control
 - e. Add drawing SD-5 Silt Fence
 - f. Add drawing SD-6 Sediment Basin
 - g. Add drawing SD-7 Temporary Inlet Protection
 - h. Change the reference number of drawing D-5 to SD-8
 - i. Change the reference number of drawing SS S11 to SD-9
 - j. Add drawing SD-9a Trapping Hood Detail
 - k. Change the reference number of drawing SS S11a to SD-10
 - l. Change the reference number of drawing SS S11b to SD-11
 - m. Add drawing SD-12 Combined Constructed Wetland and Detention Facility
 - n. Add drawing SD-13 Grass Swale
 - o. Add drawing SD-14 Filter Strip
 - p. Add drawing SD-15 Oil/Grit Separator Chamber with External High Flow Bypass

- q. Add drawing SD-16 Oil Grit Separator Type 1
 - r. Add drawing SD-17 Oil Grit Separator Type 2
 - s. Add drawing SD-18 Flow Control Manhole
 - t. Add drawing SD-19 Combined Detention for 2 year Control & Oil Grit Separator
 - u. Add drawing SD-20 Storage and Outlet Sizing
 - v. Add drawing S-10 Sanitary Force Main Connection
31. In Schedule 5d, add section 5.0:
“Street sign installations shall comply with the following criteria:
5.1 Break-off shall be 1.75” x 15” long telspar secured with 3/8” hex bolts or “J” bolts
5.2 Bases shall be 16” high, have a 10” square bottom, a 8” square top and shall have a 2” telspar inset strengthened with 2-1/4” telspar.
5.3 The top of the base shall be flush with finished grade.
5.4 Backfill shall be native material and be properly compacted in layers.”
32. In Schedule 6 add section 1.2.15
“In the case where the valve chamber is a separate structure the design shall incorporate a flexible joint between it and the wet well structure.”
33. In Schedule 6 add section 1.2.16
“Provide a 20mm diameter threadolet fitting for test gauges. Location as approved by the City Engineer.”
34. In Schedule 6 add section 1.3.10
“Any drain line from any chamber to the wet well requires a backflow preventor valve.”
35. In Schedule 6 replace section 1.5.1
“Chamber covers shall be Flygt Safe-Hatch™ or approved equivalent (size to be approved by the City Engineer). An H-20 load rating shall be required where vehicular loads on the chambers are possible.”
- B. This Bylaw may be cited as “Subdivision and Development Servicing Bylaw Amendment No. 7, Bylaw No.721, 2002”

READ a first time this 16th day of December, 2002.

READ a second time this 16th day of December, 2002.

READ a third time this 16th day of December, 2002.

ADOPTED this 6th day of January, 2003.

MAYOR

CLERK-ADMINISTRATOR