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**CITY OF KELOWNA**  
**MEMORANDUM**

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**Date:** March 7, 2022  
**File No.:** Z21-0022 Rev 1  
**To:** Planning and Development Officer (KB)  
**From:** Development Engineering Manager (NC)  
**Subject:** 1319, 1325, 1329 Bertram St. RM5 to C7r

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The Development Engineering Branch has the following comments and requirements associated with this application to rezone the property from the RM5 zone to the C7r zone to facilitate a sixteen-story rental housing project.

**1. GENERAL**

- a. The following requirements are valid for two (2) years from the reference date of this memo, or until the application has been closed, whichever occurs first. The City of Kelowna reserves the rights to update/change some or all items in this memo once these time limits have been reached.
- b. This proposed development may require the installation of centralized mail delivery equipment. Please contact Arif Bhatia, Delivery Planning Officer, Canada Post Corporation, 530 Gaston Avenue, Kelowna, BC, V1Y 2K0, (250) 859-0198, arif.bhatia@canadapost.ca to obtain further information and to determine suitable location(s) within the development.
- c. There is a possibility of a high water table or surcharging of storm drains during major storm events. This should be considered in the design of the onsite system.
- d. The proposed Development triggers a Traffic Impact Assessment (TIA). Prior to initiation of the TIA, Terms of Reference (TOR) will not be required in exchange of design and construction contributions to the Bertram Cycle track.

**2. DOMESTIC WATER AND FIRE PROTECTION**

- a. The subject lots are located within the City of Kelowna water supply area. The existing lots are each serviced with a 13-mm diameter water service. Only one service will be permitted per legal lot. The Applicant, at their cost, will arrange for the removal of the existing services and the installation of one new larger metered water service.
- b. Connection of new water service to AC water main within Bertram St must adhere to WorkSafe BC approved procedures.
- c. The Developer's Consulting Engineer will determine the domestic and fire protection requirements of this proposed development and establish hydrant requirements and service needs. The bylaw requirement for this development is 150 L/s. If it is determined that upgrades to any existing water distribution system

must be made to achieve the required fire flows, additional bonding will be required.

- d. All fire flow calculations are to be shared with the Development Engineering Branch upon submittal of off-site civil engineering drawings.
- e. A Water meter is mandatory for this development and must be installed inside a building on the water service inlet as required by the City Plumbing Regulation and Water Regulation bylaws. The Developer or Building Contractor must purchase the meter from the City at the time of application for a building permit from the Inspection Services Department and prepare the meter setter at their cost.

### **3. SANITARY SEWER SYSTEM**

- a. Our records indicate that the subject lots are currently each serviced with a 100-mm diameter sanitary sewer service off Bertram St. The Applicant's Consulting Mechanical Engineer will determine the requirements of the proposed development and establish the service needs.
- b. Only one service will be permitted, the applicant will arrange for the removal and disconnection of the existing services and the installation of one new larger service at the applicants cost. If one of the existing service connections are to be utilized it must be completed with an inspection chamber (c/w Brooks Box) as per SS-S7 & SS-S9.

### **4. STORM DRAINAGE**

- a. The property is located within the City of Kelowna drainage service area. For on-site disposal of drainage water, a hydrogeotechnical report will be required complete with a design for the disposal method (i.e. trench drain / rock pit). The Lot Grading Plan must show the design and location of these systems.
- b. Provide the following drawings:
  - i. A detailed Lot Grading Plan (indicate on the Lot Grading Plan any slopes that are steeper than 30% and areas that have greater than 1.0 m of fill);
  - ii. A detailed Stormwater Management Plan for this subdivision; and,
  - iii. An Erosion and Sediment Control Plan is to be prepared by a Professional Engineer proficient in the field of erosion and sediment control. The plan is to be prepared as per section 3.14 of Schedule 4 of Bylaw 7900. If a line item for ESC is not included in the Engineer's cost estimate for off-site work, then an additional 3% will be added to the performance security based on the total off-site construction estimate.
- c. On-site detention systems are to be compliant with Bylaw 7900, Schedule 4, Section 3.11.1 *Detention Storage*.
- d. As per Bylaw 7900, Schedule 4, Section 3.1.3 *Climate Change*, the capacity of storm works will include an additional 15 percent (15%) upward adjustment, and applied to the rainfall intensity curve stage (IDF) in Section 3.7.2.
- e. Show details of dedications, rights-of-way, setbacks and non-disturbance areas on the lot Grading Plan.

- f. Register right of ways on private properties for all the storm water infrastructure carrying, conveying, detaining and/or retaining storm water that is generated from the public properties, public road right of ways, and golf course lands.
- g. Where structures are designed or constructed below the proven high groundwater table, permanent groundwater pumping will not be permitted to discharge to the storm system. The City will approve designs that include provisions for eliminating groundwater penetration into the structure, while addressing buoyancy concerns. These design aspects must be reviewed and approved by the City Engineer.

## **5. ROAD IMPROVEMENTS**

- a. Bertram St required frontage upgrades include; removal and replacement of deteriorated sidewalk, replacement of curb and gutter, LED street lighting, landscaped and irrigated boulevard, pavement removal and replacement and re-location or adjustment of utility appurtenances if required to accommodate the upgrading construction. A cross section will be provided at time of detailed design.
- b. North Lane fronting this development must be upgraded to SS-R2 commercial lane standard; including concrete driveway crossing, road fillet paving, storm drainage, and relocation or adjustment of existing utility appurtenances if required to accommodate the upgrading construction.
- c. East Lane fronting this development must be upgraded to SS-R2 commercial lane standard; including road fillet paving, storm drainage including catch basin(s), and relocation or adjustment of existing utility appurtenances if required to accommodate the upgrading construction. Connection of catch basin lead(s) to AC storm main within Bertram St must adhere to WorkSafe BC approved procedures. No overbuild manholes permitted.
- d. All Landscape and Irrigation plans require design and inspection by a Qualified Professional registered with the BCSLA and the IABC, are to be included as a line item in the estimate for the Servicing Agreement performance security. Landscape and irrigation plans require approval by the Development Engineering Branch at the same time as other “issued for construction” drawings.
- e. Streetlights must be installed on all public roads. All streetlighting plans are to include photometric calculations demonstrating Bylaw 7900 requirements are met and approval by the Development Engineering Branch at the same time as other “issued for construction” drawings.

## **6. POWER AND TELECOMMUNICATION SERVICES**

- a. All proposed distribution and service connections are to be installed underground. It is the developer’s responsibility to make a servicing application with the respective electric power, telephone and cable transmission companies to arrange for these services, which would be at the applicant’s cost.
- b. If any road dedication or closure affects lands encumbered by a Utility right-of-way (such as Hydro, Telus, Gas, etc.) please obtain the approval of the utility. Any works required by the utility as a consequence of the road dedication or closure must be incorporated in the construction drawings submitted to the City’s Development Manager.
- c. Re-locate existing poles and utilities, where necessary including within lanes. Remove aerial trespass(es).

## 7. GEOTECHNICAL STUDY

- a. Provide a comprehensive geotechnical report (3 copies), prepared by a Professional Engineer competent in the field of hydro-geotechnical engineering to address the items below: **NOTE: The City is relying on the Geotechnical Engineer's report to prevent any damage to property and/or injury to persons from occurring as a result of problems with soil slippage or soil instability related to this proposed subdivision.**
- b. The Geotechnical reports must be submitted to the Planning and Development Services Department (Planning & Development Officer) for distribution to the Works & Utilities Department and Inspection Services Division prior to submission of Engineering drawings or application for subdivision approval.
  - i. Area ground water characteristics, including any springs and overland surface drainage courses traversing the property. Identify any monitoring required.
  - ii. Site suitability for development.
  - iii. Site soil characteristics (i.e. fill areas, sulphate content, unsuitable soils such as organic material, etc.).
  - iv. Any special requirements for construction of roads, utilities, and building structures.
  - v. Recommendations for items that should be included in a Restrictive Covenant.
  - vi. Recommendations for roof drains and perimeter drains.
  - vii. Recommendations for erosion and sedimentation controls for water and wind.
  - viii. Any items required in other sections of this document.
- c. Should any on-site retaining walls surpass the following limits, an Over Height Retaining Wall Permit will be required:

“Retaining walls on all lots, except those required as a condition of subdivision approval, must not exceed a height of 1.2 m measured from natural grade on the lower side, and must be constructed so that any retaining walls are spaced to provide a 1.2 m horizontal separation between tiers. The maximum number of tiers is two with a maximum total height of 2.4 m. Any multi-tier structure more than 2 tiers must be designed and constructed under the direction of a qualified professional engineer.”

The design of all retaining walls is to conform with Engineer & Geoscientists British Columbia's Professional Practice Guidelines for Retaining Wall Design. Submission requirements for the Over Height Retaining Wall Permit include Engineer of Record documents (Appendix A of Retaining Wall Design Guideline) and any necessary independent reviews (as per EGBC's Documented Independent Review of Structural Designs).

- d. Any modified slopes having a finished slope greater than 2H:V1 (50%) and an elevation change greater than 1.2 m must be installed under the direction of a qualified professional engineer.

- e. Any exposed natural rock surface on a lot that has the potential for materials to displace causing a hazardous condition, must be reviewed by a qualified professional engineer with the appropriate and measures undertaken as prescribed by the engineer. For adequate Rockfall Protection adjacent to walls and rock cuts, please consider BC MoTI Supplement to TAC Geometric Design Guide 440, page 440-8, which outlines a ditch bottom width depending on wall height. Sidewalks and utilities should be kept out of this protection area. Additional ROW may be required.

Where walls are on the high side, the City's preference is that the walls remain setback and on private property. Where the walls hold up a public road, the City's preference is that additional dedication be provided, and the walls be owned by the City. Please design any geogrids or tie-backs so that they do not encroach into the required road ROW.

## **8. ROAD DEDICATION/SUBDIVISION REQUIREMENTS**

- a. A dedication of approximately 0.8 m along the full frontage of the north lane is required to achieve a 7.6 m laneway.
- b. A dedication of 0.8 m along the full frontage of the east lane is required to achieve a 7.6 m laneway.
- c. A request for dedication of 1.0m along Bertram St. for future Cycle track.

## **9. DESIGN AND CONSTRUCTION**

- a. Design, construction supervision and inspection of all off-site civil works and site servicing must be performed by a Consulting Civil Engineer and all such work is subject to the approval of the City Engineer. Drawings must conform to City standards and requirements.
- b. Engineering drawing submissions are to be in accordance with the City's "Engineering Drawing Submission Requirements" Policy. Please note the number of sets and drawings required for submissions.
- c. Quality Control and Assurance Plans must be provided in accordance with the Subdivision, Development & Servicing Bylaw No. 7900 (refer to Part 5 and Schedule 3).
- d. A "Consulting Engineering Confirmation Letter" (City document 'C') must be completed prior to submission of any designs.
- e. Before any construction related to the requirements of this subdivision application commences, design drawings prepared by a professional engineer must be submitted to the City's Development Engineering Department. The design drawings must first be "Issued for Construction" by the City Engineer. On examination of design drawings, it may be determined that rights-of-way are required for current or future needs

## **10. SERVICING AGREEMENT FOR WORKS AND SERVICES**

- a. A Servicing Agreement is required for all offsite works and services on City lands in accordance with the Subdivision, Development & Servicing Bylaw No. 7900. The applicant's Engineer, prior to preparation of Servicing Agreements, must provide adequate drawings and estimates for the required works. The Servicing Agreement must be in the form as described in Schedule 2 of the bylaw.

- b. Part 3, “Security for Works and Services”, of the Bylaw, describes the Bonding and Insurance requirements of the Owner. The liability limit is not to be less than \$5,000,000 and the City is to be named on the insurance policy as an additional insured.

**11. CHARGES AND FEES**

- a. Development Cost Charges (DCC’s) are payable.
- b. Fees per the “Development Application Fees Bylaw” include:
  - i. Street Marking/Traffic Sign Fees: at cost (to be determined after detailed design completed).
  - ii. Survey Monument Fee: \$50.00 per newly created lot (GST exempt).
  - iii. Survey Monument, Replacement Fee: \$1,200.00 (GST exempt) – only if disturbed.
  - iv. Hydrant Levy Fee: \$250 per newly created lot (GST exempt).
  - v. Engineering and Inspection Fee: 3.5% of construction value (plus GST).

  
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Nelson Chapman P.Eng.  
Development Engineering Manager

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# SITE PLAN

1/32"=1'-0"

