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## CITY OF KELOWNA

# MEMORANDUM

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**Date:** June 8, 2022

**File No.:** Z21-0061 Rev 1

**To:** Planning and Development Officer (KB)

**From:** Development Engineering Manager (RO)

**Subject:** 350 Doyle Ave P1 to C7R

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The Development Engineering Branch has the following comments and requirements associated with this application to rezone the subject property from the P1 – Major Institutional zone to the C7r – Central Business Commercial (Residential Rental Tenure Only) zone.

### **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) must be established. The applicant's consulting transportation engineer shall contact the Development Engineering Technician for this development who, in collaboration with the City's Integrated Transportation Department, will determine the terms of reference for the study. Recommendations from the Traffic Impact Analysis (TIA) will become requirements of this development.
- e. These Development Engineering comments/requirements are subject to the review and requirements from the Ministry of Transportation and Infrastructure (MoTI).

### **2. DOMESTIC WATER AND FIRE PROTECTION**

- a. The subject lot is located within the City of Kelowna water supply area. The existing lots does not currently have a water service. Only one service will be permitted per legal lot.

- b. 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.
- c. An approved backflow protection device must also be installed on site as required by the City Plumbing Regulation and Water Regulation bylaws.
- 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 lot is currently with serviced with one 100-mm and one 150-mm diameter sanitary sewer service. 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 for this development, 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.
- c. 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.
- d. Connection of new sanitary service to AC sewer main within Doyle Ave must adhere to WorkSafe BC approved procedures. Overbuild manhole will not be permitted.

### **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. Identify clearly on a contour map, or lot grading plan, all steep areas (>30 %). Provide cross sections for all steep areas at each property corner and at locations where there are significant changes in slope. Cross sections are to be perpendicular to the contour of the slope. Show the proposed property lines on the cross sections. Not all areas have a clear top of bank; and therefore, field reconnaissance by City staff and the applicant may be needed to verify a suitable location for property lines.
- h. If individual lot connections are required, ensure that payment of connection fees has been completed (please provide receipt).
- i. 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. Doyle Ave must be upgraded to a full urban standard (modified SS-R6) along the full frontage (to centreline) of the subject property and extending west to the Doyle/Water roundabout, installation of new crosswalk to the road centreline in conjunction with the proposed Artwalk at location to be provided by Development Technician at time of detailed design, curb and gutter, sidewalk, LED street lighting, landscaped and irrigated boulevard, storm drainage system, pavement removal and replacement and re-location or adjustment of utility appurtenances if required to accommodate the upgrading construction. Road cross section will be provided to consulting engineer, upon request, at time of detailed offsite design.
- b. Design and construction of the Artwalk for the entire area between the centreline of Doyle Ave north to the the extents of the existing portion north of Smith Ave will be a requirement of this development. Artwalk design requires approval by the City at the same time as other "issued for construction" drawings. The City reserves the right to require excess or extended works of the developer necessary for the Crosswalk south of the Doyle Ave centreline to be completed at the City's cost.
- c. North-south lane fronting this development to the east will be reviewed prior to construction of Development and the condition will be assed at that time. If any damage or deficiencies are noted as a result of construction at the subject property, the entire lane will need to be remove and replaced with reverse asphalt crown and storm drainage.
- d. All Landscape and Irrigation plans require design and inspection by a Qualified Professional registered with the BCSLA and the IIABC, 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.

## **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. No driveway access will be permitted to Doyle Ave. All vehicle access to the development site is to be provided from the lane.
- b. Indicate on the site the locations of loading bays as well as the garbage and recycle bins. Provide turning movements for a MSU vehicle to confirm manoeuvrability on site and within lane. No reverse movement within or into the lane will be permitted.
- c. Perimeter access must comply with the BC Building Code. Fire Truck access designs and proposed hydrant locations will be reviewed by the Fire Protection Officer.

## **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, Replacement Fee: \$1,200.00 (GST exempt) – only if disturbed.
  - iii. 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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