

CITY OF KELOWNA

MEMORANDUM

Date: ~~February 7, 2023~~ **April 17, 2023**
File No.: Z23-0001
To: Community Planning Manager (WM)
From: Development Engineering Manager (NC)
Subject: 410 Providence Ave (**Rev 1**) Rezoning

The Development Engineering Department has the following comments and requirements associated with this application to rezone the subject property from P2 – Educational and Minor Institutional to RU1 – Large Lot Housing, RU2 – Medium Lot Housing, RU3, Small Lot Housing, MF2 – Townhouse Housing, and P3 – Parks and Open Space to accommodate a 99 unit, single family, duplex and townhouse residential development.

The Development Engineering Technician for this file is John Filipenko (jfilipenko@kelowna.ca).

1. GENERAL

- a. The following comments and requirements are valid for a period of two (2) years from the reference date of this memo, or until the application has been closed, whichever occurs first.
- b. On-site/internal utility and transportation servicing requirements will be established at time of Subdivision. In order to determine that the City’s utility networks can support the proposed zones, as a condition of rezoning the Developer must prepare a Functional Servicing Report specific to this development to identify any offsite utility servicing needs in accordance with Subdivision, Development, and Servicing Bylaw 7900 requirements. Please contact the Development Technician for this file to arrange Terms of Reference for the study.
- c. **The City will accept a voluntary direct funding contribution of \$240,000.00 toward the Frost 1 Road Extension DCC project (Killdeer Rd to Chute Lake Rd), in addition to their required contribution to the City’s Road DCCs, as proposed by the Applicant. The voluntary contribution is intended to help advance the road project for earlier completion in order to receive the anticipated benefits of improved accessibility to and from the proposed development.**

2. DOMESTIC WATER AND FIRE PROTECTION

- a. The subject property is located within the 551 m pressure zone of the City of Kelowna Water Supply Area.
- b. The Developer’s Consulting Engineer will determine the domestic water servicing and fire protection requirements for this development. The minimum available fire flow for High-Density Residential Lots is 150 L/s. If upgrades are necessary to achieve adequate servicing

or fire flow, the Developer must complete any such upgrades at their cost and any obsolete services must be fully decommissioned at the main.

- c. The Developer must demonstrate that both the calculated FUS fire flow demand or any internal building sprinkler demands within the proposed development does not exceed the Bylaw 7900 requirement of 150 L/s for High-Density Residential land use.
- d. Please contact the development technician for this project to arrange for formal engineering modeling analysis of the City Network's ability to adequately supply the subject property.

3. SANITARY SEWER SYSTEM

- a. The Developer's Consulting Engineer will determine the sanitary sewer servicing requirements for this development. If upgrades are determined to be necessary to achieve adequate servicing, the Developer must complete any such upgrades at their cost.
- b. Provide full build out unit counts for all phases of this development. Please contact the development technician for this project to arrange for formal engineering modeling analysis of the City Network's ability to adequately supply the subject property.

4. STORM DRAINAGE

- a. At time of Subdivision, the Developer must engage a Consulting Engineer to prepare a Stormwater Management Report that addresses the requirements of Bylaw 7900, including accommodation of upstream systems and mitigation of impacts on downstream systems.
- b. At time of Subdivision, the Developer must engage a Consulting Engineer to prepare following drawings for the site, in accordance with Bylaw 7900 requirements:
 - i. A detailed Lot Grading Plan;
 - a. Indicate on the Lot Grading Plan the building slab elevations, finished grade elevations throughout the site, any slopes that are steeper than 30%, areas that have greater than 1.0 m of fill, finished grade slopes, and perimeter grades to match existing grades;
 - b. Grading directly to a natural drainage path must include adequate erosion control and water quality improvement measures;
 - ii. A detailed Stormwater Management Plan;
 - a. Surface runoff during a storm event of 1:100 year return period from this development must not discharge from the site in excess of the 1:5 year pre-development rate;
 - b. On-site detention systems are to be compliant with Bylaw 7900, Schedule 4, Section 3.11.1 *Detention Storage*. Explore opportunities for decentralized storage throughout the drainage corridors.
 - c. 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, applied to post-development rainfall intensity curve stage (IDF) in Section 3.7.2;
 - iii. An Erosion and Sediment Control (ESC) Plan;

- a. Prepare as per section 3.14 of Schedule 4 of Bylaw 7900 and best practices;
- b. 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. Registration of statutory right of ways on site for all storm water infrastructure or flow paths carrying, conveying, detaining and/or retaining storm water that is generated from the public properties or public road right of ways will be required at time of Subdivision. Show details of dedications, rights-of-way, setbacks and non-disturbance areas.

5. ROADWAY AND STREETScape

- a. Internal road network criteria and access locations to Quilchena Drive will be established at time of Subdivision.
- 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.
- e. Streetlights must be installed on all public roads. All streetlighting plans are to include photometric calculations demonstrating Bylaw 7900 requirements are met and 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 services and 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. Utility companies are required to obtain the City's approval before commencing construction.
- b. Provide all necessary Statutory Rights-of-Ways for any utility corridors as may be required.

7. GEOTECHNICAL STUDY


- a. Provide a Geotechnical Report prepared by a Professional Engineer competent in the field of geotechnical or hydrogeological engineering as applicable at time of Subdivision. Geotechnical Report to address, at a minimum, any of the applicable items below:
 - i. Site suitability for development;
 - ii. Area ground water characteristics, including any springs and overland surface drainage courses traversing the property, as well as any monitoring required;
 - 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. Slope stability, rock fall hazard and slippage including the effects of drainage and septic tank effluent on the site;
 - vi. Identify slopes greater than 30%;
 - vii. Top of bank assessment and location including recommendations for property line locations, septic field locations, building setbacks, and ground water disposal locations;
 - viii. Any special requirements that the proposed development should undertake so that it will not impact the banks(s), including erosion and structural requirements;
 - ix. Recommendations for items that should be included in a Restrictive Covenant;
 - x. Recommendations for erosion and sedimentation controls for water and wind;
 - xi. Any items required in other sections of this memo;
 - xii. Recommendations for roof drains, perimeter drains, and septic tank effluent on the site;
- b. Should any on-site retaining walls surpass the following limits, an Over Height Retaining Wall Permit will be required:
- i. 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.
 - ii. 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*).
 - iii. Where walls are on the high side of a municipal road and retaining private property, the City's preference is that the walls are situated on private property. Where the walls are retaining a municipal road, the City's preference is that the wall be located within the ROW, with additional dedication provided for maintenance and equipment access. Geogrids or tie-backs for private walls must not encroach into municipal ROW.
- c. 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.
- d. If any blasting is proposed as part of this subdivision, a Soil Removal and Deposit Application must be made to the City for such works. The proposed blasting work is to comply with Soil Removal and Deposit Regulation Bylaw No. 9612, specifically Section 6 PERMIT REQUIREMENTS.
- e. Any exposed natural rock surface or constructed rock cut that has the potential for materials to displace, causing a hazardous condition, must be reviewed by a qualified professional engineer, with appropriate measures undertaken as prescribed by the engineer for rockfall hazard mitigation. For adequate Rockfall Protection adjacent to walls and rock cuts, refer to BC MoTI Supplement to TAC Geometric Design Guide Figure 440-H, which outlines a ditch

bottom width depending on wall height. Additional ROW may be required to accommodate catchment ditches adjacent to municipal roads. Sidewalks and utilities should be kept out of rockfall catchment area.

8. **DESIGN AND SECURITY FOR OFFSITE WORKS**

- a. Offsite Works and Services may be required of this development as a condition of Rezoning. The Developer must Design and enter into a Servicing Agreement and provide security for the Construction of the Works prior to adoption of the rezoning bylaw.
- b. Design of all offsite works and site servicing must be completed in accordance with Subdivision, Development, and Servicing Bylaw No. 7900 and is subject to the approval of the City Engineer prior to construction or execution of a Servicing Agreement.
 - i. See Bylaw 7900 Sections 6.0, 7.0, and 9.0, as well as Schedule 4 for procedural guidance, approval requirements, and design standards.
 - ii. Design must be completed by a suitably qualified and experience Consulting Engineer.
 - iii. Engineering drawing submissions are to be in accordance with *Council Policy 265 – Engineering Drawing Submission Requirements*. Drawings must be submitted digitally in PDF format and sealed in accordance with EGBC Guidelines.
- c. A Servicing Agreement is required for all Works and Services on City lands (Offsite Works).
 - i. The Servicing Agreement must be in the form of Schedule 2 of Bylaw 7900.
 - ii. The Developer's Consulting Engineer, prior to preparation of a Servicing Agreement, must provide adequate drawings and estimates for the Works to the City Engineer.
 - iii. Bylaw 7900, Part 3 – Security for Works and Services, Sections 7.1 - 7.2, describes the Security requirements of an Owner for entering into Servicing Agreements. Security must be in the form of an irrevocable letter-of-credit, bank draft, or certified cheque.



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