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



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**Date:** February 23, 2023  
**File No.:** Z23-0002  
**To:** Urban Planning (MT)  
**From:** Development Engineering Manager (NC)  
**Subject:** 815 – 865 Clement Ave RU4 to MF3

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The Development Engineering Department has the following comments associated with this Rezoning application from RU4 – Duplex Housing to MF3 – Apartment Housing to facilitate an apartment housing development.

The Development Engineering Technician for this file is Sarah Kelly (skelly@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. The City of Kelowna reserves the rights to modify some or all items in this memo if the zone amendment bylaw is not adopted within this time.
- b. This proposed development may require the installation or modification 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 determine requirements.
- c. All City Trees must be protected as per Bylaw 8042 Schedule C – Tree Barrier and Installation Policy requirements. Removal of City Trees will require prior approval of the City’s Urban Forestry Supervisor and may be subject to replacement, at a minimum two for one ratio, and compensation payment as per the City of Kelowna Equitable Compensation as defined in Section 8.2 of Bylaw 8042.
- d. There is a possibility of a high groundwater table or surcharging of storm drains during major storm events. Non-basement buildings may be required. This should be considered in the design of the onsite system, lot grading, and minimum basement elevations.
- e. Comments and requirements contained herein assume the subject properties will be consolidated into a single lot.

**2. DEVELOPMENT PERMIT COMMENTS AND SITE-SPECIFIC REQUIREMENTS**

- a. All vehicle access to the subject property must be from the lane, no loading zone or vehicle access will be permitted from Clement Ave.

- b. A Transportation Assessment is required of this development to assess connectivity with and impacts to the surrounding transportation network including potential road dedication requirement along the lane frontage. The results of this assessment may inform additional requirements. Please contact the development technician for this file to obtain terms of reference for completing the analysis.
- c. The Developer must provide excess and extended services along the Clement Ave frontage of the proposed development. The excess and extended services shall include design and construction of all frontage improvements extending to the centreline of Clement Ave and east to the Ethel St intersection. The cost of installation of the excess and extended portion of the works must be borne by the Developer *may* be eligible for cost recovery via a Latecomer Agreement or DCC Credit. Costs for directly attributable components shall be borne by the Developer without eligibility for cost recovery.
  - i. The cost of excess and extended services shall be included in the calculation of the City Engineering Administration and Inspection Fee.
  - ii. The entire cost of all works shall be included when determining the performance security.
  - iii. The developer must provide a public and competitive bidding process for the frontage related works that are eligible for cost recovery.
  - iv. Please contact the development technician for this file for more information.
- d. Indicate, on the site, the locations of loading zones and garbage/recycle collection areas. Provide turning movements for an HSU vehicle to confirm maneuverability on site without requiring a reverse movement onto public roads or lanes, if vehicles are required to enter the site to access these areas.
- e. Provide turning movements to confirm that the proposed site layout meets the requirements for fire truck access and circulation.

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

- a. The subject property is located within the City of Kelowna Water Supply Area. Our records indicate that this property is currently serviced with multiple connections off Clement Ave. Only one service connection will be permitted for this development.
- b. The Developer's Consulting Engineer will determine the domestic water servicing and fire protection requirements for this development. If upgrades are necessary to achieve adequate servicing, hydrant spacing, or fire protection, 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 and the internal building sprinkler demand of the proposed development does not exceed the Bylaw 7900 requirement of 150 L/s for High-Density Residential.
- d. The City estimates that the minimum fire flow of 150 L/s for High-Density Residential, in accordance with Bylaw 7900 standards, is available from the watermain fronting the subject property, given our modelling assumptions. The Developer's Consulting Engineer should contact the development technician for this file to confirm the City's modeling assumptions are suitable for this proposed development.

- 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 Bylaw 5968-87.

#### **4. SANITARY SEWER SYSTEM**

- a. Our records indicate that this property is currently serviced with multiple connections off a 150 mm diameter main, running at 0.2%, along Clement Ave. Only one service connection will be permitted for this development.
- b. The Developer's Consulting Engineer will determine the sanitary sewer servicing requirements for this development, including downstream capacity and flow velocity analysis. Upgrading and decommissioning works are expected to be necessary to achieve adequate servicing. The Developer must complete all necessary work at their cost. Please contact the development technician for this project to arrange for network modeling analysis.
  - i. Required upgrades are expected to include upgrading the existing 150 mm diameter sanitary main fronting the subject property to a 200 mm diameter main downstream of the proposed service connection location.
  - ii. Decommissioning of the existing 150 mm diameter main, services, and manholes upstream of the proposed service connection location.
- c. Service connection is to be completed as per SS-S7 with an inspection chamber and Brooks Box, with consideration given to SS-S50 for connections to mains.

#### **5. STORM DRAINAGE**

- a. The subject property is located within the City of Kelowna drainage service area. Only one service connection will be permitted per lot.
- b. The Applicant must engage a Consulting Engineer to provide the 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*;

- 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. Register 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. Show details of dedications, rights-of-way, setbacks and non-disturbance areas.
- d. 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. Intermittent pumping of groundwater for structures within seasonal range of the groundwater table may be permitted with some conditions. 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.

## **6. ROADWAY AND STREETScape**

- a. Clement Ave is classified in the 2040 OCP as a Core Area Major Arterial and must be upgraded to an urban standard along the full frontage of the subject property to facilitate additional corridor density associated with this development. Required upgrades to include sidewalk, curb and gutter, LED street lighting, landscaped and irrigated boulevard, pavement removal and replacement, and re-location or undergrounding of utilities 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. Lane must be upgraded to an SS-R2 standard along the full frontage of this proposed development including drainage system, burial of overhead wires and removal of poles as necessary to ensure minimum 6 m unencumbered ROW width, pavement removal and replacement, and re-location or undergrounding of utilities if required to accommodate the upgrading construction. Additional lane width may need to be dedicated from the subject property to achieve operational requirements.
- c. 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.
- d. 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.

**7. POWER AND TELECOMMUNICATION SERVICES**

- a. Re-locate or underground existing poles and utilities within the lanes where necessary to remove aerial trespass(es), achieve setbacks, and maintain 6 m unencumbered ROW width.
- b. Re-locate or underground existing poles and utilities along Clement Ave where necessary to remove aerial trespass(es), achieve setbacks, and meet road cross-section standards.
- c. All proposed 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. Utility companies are required to obtain the City's approval before commencing construction.
- d. Provide all necessary Statutory Rights-of-Ways for any utility corridors as may be required.

**8. GEOTECHNICAL STUDY**

- a. Provide a Geotechnical Report prepared by a Professional Engineer competent in the field of geotechnical or hydrogeological engineering as applicable. The Geotechnical Report must be submitted to the Development Services Department as part of the Building Permit submission and prior to the City's review of Engineering drawings. 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, 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 erosion and sedimentation controls for water and wind;
  - vii. Any items required in other sections of this memo;
  - viii. Recommendations for roof drains and perimeter drains on the site;

**9. DESIGN AND CONSTRUCTION OF OFFSITE WORKS**

- a. Offsite Works and Services are required of this development as outlined above. The Developer must Design and enter into a Servicing Agreement and provide security for the Construction of the Works prior to adoption of the Zone Amendment 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.
- d. Construction of the required Works and Services must be completed in accordance with Bylaw 7900 requirements and is subject to several approvals prior to work commencing. These include, but are not necessarily limited to, the following:
  - i. Before any construction of the Works commences, design drawings must be reviewed and approved for construction by the City Engineer.
  - ii. A “Consulting Engineering Confirmation Letter” (City template provided upon request) must be executed by the Owner and Consulting Engineer and provided to the City.
  - iii. The Developer’s Consulting Engineer must undertake adequate inspections during construction of the Work, as outlined in EGBC’s *Guide to the Standard for Documented Field Reviews During Implementation or Construction*. A Quality Control and Assurance Plan acceptable to the City Engineer must be submitted prior to construction approval. Refer to Bylaw 7900, Schedule 3.
  - iv. Insurance requirements are outlined in Bylaw 7900, Section 7.3. A compliant Certificate of Insurance must be provided prior to construction approval.
  - v. Contractor must provide a current WorkSafe BC Clearance Letter.
- e. Construction completion, maintenance period, and return of Performance Security requirements are outlined in Bylaw 7900, Sections 9.5 - 9.7 and Sections 10.0 - 10.4.

## 10. **CHARGES, FEES, AND SECURITIES**

- a. Fees per the “Development Application Fees Bylaw” include:
  - i. Survey Monument Fee: \$50.00 per newly created lot (GST exempt).
  - ii. Survey Monument Replacement Fee: \$1,200.00 (GST exempt) – only if disturbed.
  - iii. Engineering and Inspection Fee: 3.5% of offsite works and services (plus GST).

  
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Nelson Chapman, P.Eng.  
Development Engineering Manager

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