CITY OF KELOWNA

MEMORANDUM

Date: March 23, 2020

File No.: Z20-0021

To: Suburban and Rural Planning (AK)

From: Development Engineering Manager (JK)

Subject: 2980 Gallagher Rd - Kirschner Mountain Phase 6 – A1 to RH3

WORKS AND SERVICES REQUIREMENTS

The City's Development Engineering Branch has the following comments and requirements with regard to this application to rezone the subject lot from A1 to RH3 to support the development of a multiple dwelling townhouse development. The Development Engineering Technician for this project is Jim Hager (jhager@kelowna.ca). The following Works and Services will be a requirement of this development.

1. GENERAL

a) 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.

b) 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.

c) The Development Engineering Branch recommends that the ultimate connection of Loseth Rd and Gallagher Rd result in a street name change at the intersection of proposed Road A (north of Road A will be Loseth Rd; south of Road A will be Gallagher Rd).

2. DOMESTIC WATER AND FIRE PROTECTION

a) The subject lot is within the Black Mountain Irrigation District (BMID) water supply area. The Developer is required to make satisfactory arrangements with BMID for all water and fire protection-related issues. All charges for service connection(s) and upgrading costs, as well as any costs to decommission existing services, shall be the responsibility of the Developer.

b) The Developer's Consulting Mechanical Engineer will determine the fire protection requirements of this proposed development and establish hydrant requirements and

service needs. All fire flow calculations approved by BMID are to be shared with the Development Engineering Branch upon submittal of off-site civil engineering drawings.

c) Provide an adequately sized domestic water and fire protection system complete with individual lot connections. The water system must be capable of supplying domestic and fire flow demands of the project in accordance with the Subdivision, Development & Servicing Bylaw. No. 7900. Provide water flow calculations for this development to confirm bylaw conformance. Ensure every building site is located at an elevation that ensures water pressure is within the bylaw pressure limits. Note: Private pumps are not acceptable for addressing marginal pressure.

3. SANITARY SEWER SYSTEM

a) Provide an adequately sized sanitary sewer system complete with individual lot connections.

b) Provide full build out unit counts for all phases of this development for model analysis to confirm downstream capacity.

c) Arrange for individual lot connections before submission of the subdivision plan, including payment of connection fees (provide copy of receipt).

4. STORM DRAINAGE

a) The property is located within the City of Kelowna drainage service area. The hillside areas of Kelowna are not suitable for groundwater recharge or disposal of on/offsite drainage via infiltration. Roof or site drainage for this subdivision must discharge directly to the City of Kelowna's storm system. The City will not permit infiltration to ground except for foundation drainage. Each lot shall require a storm system service connection.

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) As part of the City of Kelowna's 2030 Official Community Plan (OCP), Loseth Road and Gallagher Rd are planned to connect (Map 7.3 of OCP). The connection is currently designated as a Major Collector. The south end of Loseth Rd terminating a 2980 Gallagher Rd is a ~930-m long dead end road (measured from the intersection of Sunrise Rd and Loseth Rd). This dead end section of road currently hosts over 150 residential lots without a formalized secondary road access. A further 20 residential lots are also proposed as part of S19-0081 and 21 residential lots as part of S19-0082. Regardless of this application (Z20-0021), Loseth Rd is planned to service close to 200 residential lots. The City's Subdivision, Development & Servicing Bylaw currently allows a maximum length of 400 m for temporary or staged dead-end road (Bylaw 7900, Schedule 4, Section 4.4) before a formalized second point of access is required.

b) The proposed development will add an additional 250 m to the length of Loseth Rd and roughly 76 additional residential units. As a result, this phase of the development will trigger the construction and dedication of the connection of Loseth Rd and Gallagher Rd.

c) Gallagher Rd / Loseth Rd is to be designed as a modified SS-H6 hillside road standard, complete with 1.8-m wide bike lanes. It is understood that the SS-H6 cross section shows a shared 4.3-m wide travel lane for cars and bicycles. Given the modified nature of the standard detail, the Development Engineering Branch will work with the Applicant's Consulting Engineer to achieve a typical cross section that will address the needs of all parties.

   NOTE: Landscaping and irrigation can be completed in phases along the frontage of development as it occurs.

d) Based on the additional information received from CTQ (April 02, 2020), proposed Road A is planned to serve ~77 units as part of a future phase of development. Based on this information, Road A will serve less than 200 units, resulting in a Local Street classification and hillside standard of SS-H12.

e) Road A should intersect Loseth Road at 90 degrees and properly align with the access to the east.

f) A three-dimensional sight line and stopping distance analysis will be required to support the proposed accesses to from Road 1 and Road 2 to Road A, and the proposed rear yard setback variance from 4.5 m to 3.0 m (DVP20-0084). Ensure the sight and stopping distances are considered as per Bylaw 7900 Schedule 4 Section 4.1 *General* AND Section 7. Hillside Street Standards TABLE 2 Alignment Design Criteria.

g) Strata boundaries are not to cross dedicated sections of roads (i.e., Loseth Rd and Road A). All strata accesses from public roadways are to be demarcated with concrete letdowns (as per SS-S7).

h) Provide traffic control and street name signs where required. The City will install all signs and traffic control devices at the Developer's expense. The developer will sign a third-party work order and pay the cost of traffic sign installation prior to the registration of the subdivision.

i) Grade the fronting road boulevards in accordance with the standard drawing. Major cut/fill slopes must start at the property lines.

j) Landscaped boulevards, complete with underground irrigation, are required on proposed roadways. This will be included as a line item in the estimate for the Servicing Agreement performance security. Details and plant selection are to be approved by the City of Kelowna Parks department.

k) Verify that physical driveway access will satisfy City requirements for all lots. For steeper lots (15% and greater), show driveways on the lot grading plan with grades or profiles.

l) A temporary cul-de-sac statutory right of way (SRW) will be required at the terminal end of Road A. The interim SRW and cul-de sac shall be designed as per SS-R17. The interim cul-de-sac does not require asphalt paving, but an adequate road structure must be installed to support snowploughs and fire trucks.

m) There will be no extension of transit service for this area due to the lack of adequate density.

6. POWER AND TELECOMMUNICATION SERVICES

a) Underground services will be required for all power and telecommunications to each lot in the proposed subdivision.

b) Streetlights must be installed on all roads. All streetlighting designs are to be approved by the Development Engineering Branch at the same time as other "issued for construction" drawings.

c) Make servicing applications to the respective Power and Telecommunication utility companies. The utility companies are required to obtain the City's approval before commencing construction.

d) Before making application for approval of your subdivision plan, please make arrangements with Fortis for the pre-payment of applicable charges and tender a copy of their receipt with the subdivision application for final approval.

e) Re-locate existing poles and utilities, where necessary. Remove aerial trespass (es).

f) If any road dedication affects lands encumbered by a Utility right-of-way (such as B.C. Gas, etc.) please obtain the approval of the utility prior to application for final subdivision approval. Any works required by the utility as a consequence of the road dedication must be incorporated in the construction drawings submitted to the City's Development Manager.

7. GEOTECHNICAL STUDY

a) Provide a geotechnical report 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 Development Services Department (Subdivision Approving officer) for distribution to the Development Engineering Branch 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, perimeter drains and septic tank effluent on the site.

   vii. Any items required in other sections of this document.

c) 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 Amendment No. 1 to the Soil Removal and Deposit Regulation Bylaw No. 9612, specifically Section 6 PERMIT REQUIREMENTS – (k) and (g).

d) 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*).

e) 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.

f) 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) The proposed development will trigger the subdivision and the creation of the necessary number of separate strata lots.

b) Loseth Rd is to be dedicated to the City of Kelowna with A 18.2-m wide right of way (SS-H6). The alignment of the dedication is to roughly follow the existing access easement connecting Loseth Rd to Gallagher Rd.

c) Road A is to be dedicated to the City of Kelowna with a 14.1-m wide right of way (SS-H12).

d) A 6.0 m corner rounding will be required on corner lots of intersecting public roads.

e) Provide all necessary Statutory Rights-of-Way for any utility corridors required, including those on proposed or existing City Lands and private lands.

9. DEVELOPMENT PERMIT AND SITE-RELATED ISSUES

a) All retaining walls are to be contained within privately-owned lots.

b) As Loseth Rd is classified as a Major Collector, waste collection vehicles cannot back onto Loseth Rd. Please provide on-site turning movements showing an MSU vehicle turning on site without having to back onto Loseth Rd.

10. OTHER ENGINEERING COMMENTS

a) Clarify the proposed legal protections (e.g., no-build/no-disturb covenants) for the 2H:1V fill slopes outside of the proposed property lines.

11. 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 Works & Utilities 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.

12. SERVICING AGREEMENTS FOR WORKS AND SERVICES

a) A Servicing Agreement is required for all 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.

c) Should it be determined that any Park-related work be included under the scope of the Servicing Agreement, the Development Engineering Branch reserves the right to require a performance security for these works. Note: The Development Engineering Branch's Engineering and Inspection Fee will not include the scope of any Parks-related work.

13. CHARGES, FEES, AND SECURITIES

a) Development Cost Charges (DCC's) are payable

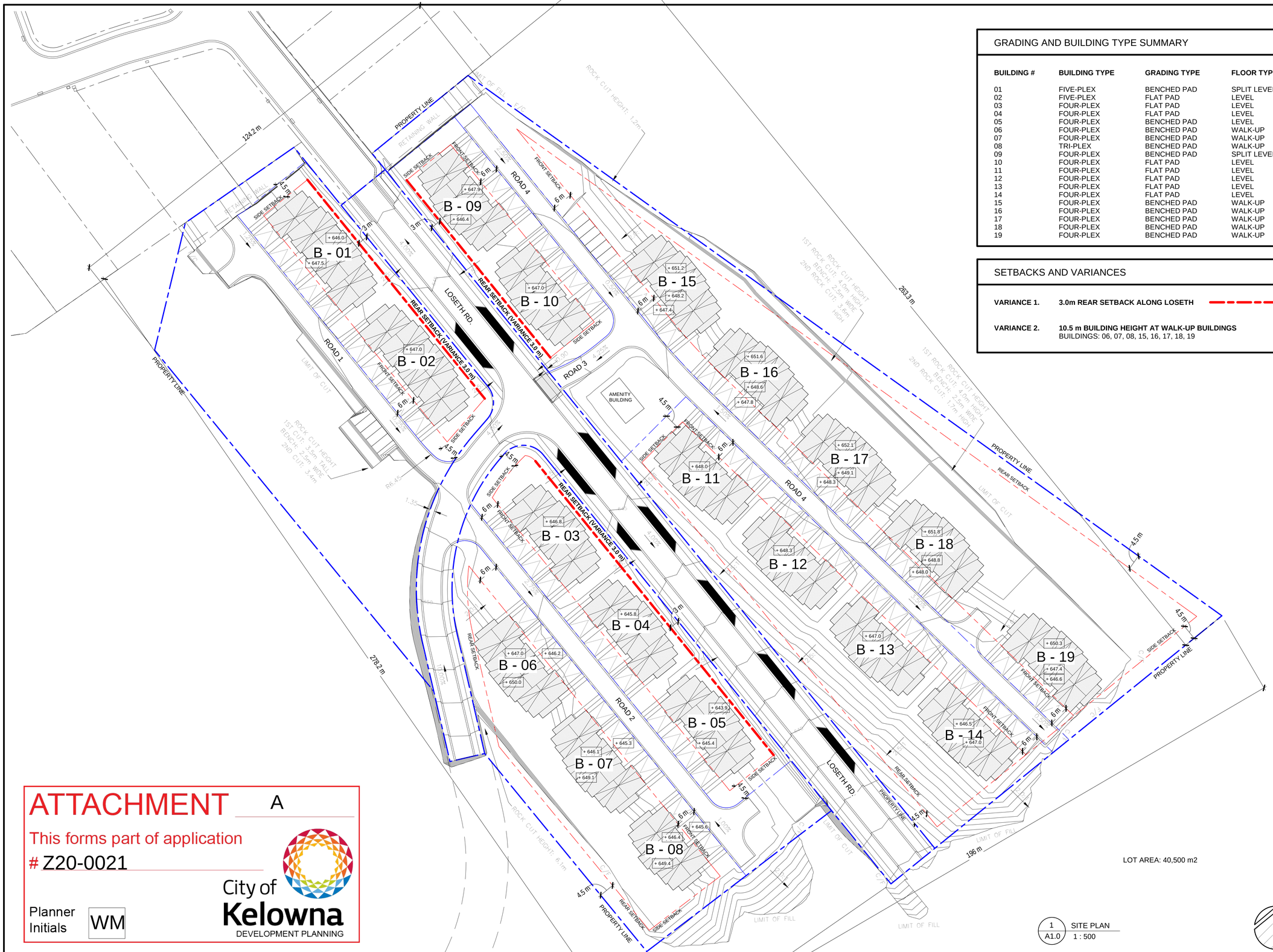
b) Fees per the "Development Application Fees Bylaw" include:

i) Street/Traffic Sign Fees: at cost (to be determined after design).
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) Engineering and Inspection Fee: 3.5% of construction value (plus GST).

James Kay

James Kay, P.Eng.
Development Engineering Manager

JKH



GRADING AND BUILDING TYPE SUMMARY

BUILDING #	BUILDING TYPE	GRADING TYPE	FLOOR TYPE
01	FIVE-PLEX	BENCHED PAD	SPLIT LEVEL
02	FIVE-PLEX	FLAT PAD	LEVEL
03	FOUR-PLEX	FLAT PAD	LEVEL
04	FOUR-PLEX	FLAT PAD	LEVEL
05	FOUR-PLEX	BENCHED PAD	LEVEL
06	FOUR-PLEX	BENCHED PAD	WALK-UP
07	FOUR-PLEX	BENCHED PAD	WALK-UP
08	TRI-PLEX	BENCHED PAD	WALK-UP
09	FOUR-PLEX	BENCHED PAD	SPLIT LEVEL
10	FOUR-PLEX	FLAT PAD	LEVEL
11	FOUR-PLEX	FLAT PAD	LEVEL
12	FOUR-PLEX	FLAT PAD	LEVEL
13	FOUR-PLEX	FLAT PAD	LEVEL
14	FOUR-PLEX	FLAT PAD	LEVEL
15	FOUR-PLEX	BENCHED PAD	WALK-UP
16	FOUR-PLEX	BENCHED PAD	WALK-UP
17	FOUR-PLEX	BENCHED PAD	WALK-UP
18	FOUR-PLEX	BENCHED PAD	WALK-UP
19	FOUR-PLEX	BENCHED PAD	WALK-UP

SETBACKS AND VARIANCES

VARIANCE 1. **3.0m REAR SETBACK ALONG LOSETH**

VARIANCE 2. **10.5 m BUILDING HEIGHT AT WALK-UP BUILDINGS**
BUILDINGS: 06, 07, 08, 15, 16, 17, 18, 19

LOT AREA: 40,500 m2

1 A1.0 SITE PLAN 1 : 500

ATTACHMENT A

This forms part of application

Z20-0021

Planner Initials WM

City of Kelowna
DEVELOPMENT PLANNING

Notes:

- THIS DRAWING MUST NOT BE SCALED.
- VERIFY ALL DIMENSIONS AND DATUMS PRIOR TO COMMENCEMENT OF WORK. REPORT ALL ERRORS AND OMMISIONS TO THE ARCHITECT.
- VARIATIONS AND MODIFICATIONS ARE NOT ALLOWED WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT.
- THIS DRAWING IS THE EXCLUSIVE PROPERTY OF THE ARCHITECT.
- ANY REPRODUCTION MUST BEAR THEIR NAME AS ARCHITECT.

NO.	DATE	BY	DESCRIPTION
2	08.1.2019	CP	CLIENT REVIEW
1	29.03.2018	CP	CONCEPT DESIGN

DESIGN CONSULTANT

gta

GTA ARCHITECTURE LTD.

243 1889 SPRINGFIELD ROAD
Kelowna, British Columbia.
V1Y 5V5
TELEPHONE: (250)979-1668
www.gtarch.ca

DEVELOPED BY:

KIRSCHNER MOUNTAIN

PROJECT

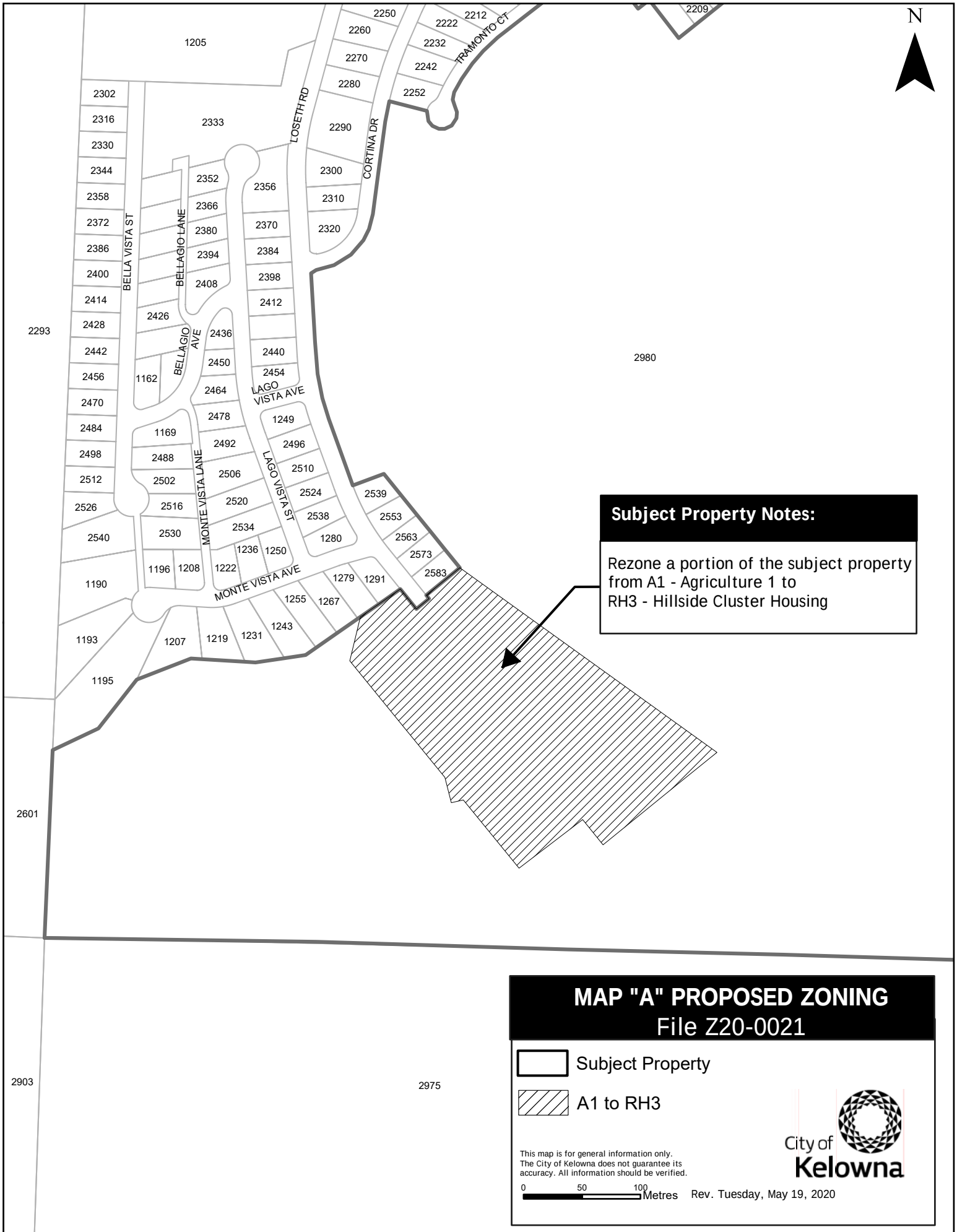
KIRSCHNER MOUNTAIN PH. 6
KIRSCHNER MOUNTAIN

SHEET TITLE

SITE PLAN

DRAWN BY:	CP	DRAWING NO.	A1.0
DESIGNED BY:	CP		
SCALE:	As indicated		
DATE:	2019/11/08	FILE:	A18-08

Project File Name and Location: *P:\2018 Architecture\A18-08 Kirschner Mountain Phase 6\3.0 Drawings\A18-08 Site Plan(2019.10.29).rvt*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BELLAGIO AVE
LAGO VISTA AVE
MONTE VISTA LANE
LAGO VISTA ST
MONTE VISTA AVE
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Subject Property Notes:
Rezone a portion of the subject property from A1 - Agriculture 1 to RH3 - Hillside Cluster Housing
MAP "A" PROPOSED ZONING
File Z20-0021
Subject Property
A1 to RH3
This map is for general information only.
The City of Kelowna does not guarantee its accuracy. All information should be verified.
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Metres
City of Kelowna
Rev. Tuesday, May 19, 2020