

REGIONAL DISTRICT OF NORTH OKANAGAN

BYLAW No. 3037

A bylaw to amend Electoral Areas “D” and “E” Official Community Plan Bylaw No. 2485, 2011 and amendments thereto

WHEREAS pursuant to Section 472 [Authority to adopt a bylaw] of the *Local Government Act*, the Board of the Regional District of North Okanagan may, by Bylaw, adopt one or more official community plans;

AND WHEREAS the Board has enacted the “Electoral Areas “D” and “E” Official Community Plan Bylaw No. 2485, 2011” as amended to provide a statement of objectives and policies to guide decisions on planning and land use management, within the area covered by the plan;

AND WHEREAS, pursuant to Section 460 [Development approval procedures] of the *Local Government Act*, the Board must, by bylaw, define procedures under which an owner of land may apply for an amendment to an Official Community Plan and must consider every application for an amendment to the plan;

AND WHEREAS the Board has enacted the “*Regional District of North Okanagan Development Application Procedures and Administrative Fees Bylaw No. 2677, 2018*” as amended to establish procedures to amend an Official Community Plan, a Zoning Bylaw, or a Rural Land Use Bylaw, or to issue a Permit:

AND WHEREAS the Board has received an application to amend the Official Community Plan designation;

NOW THEREFORE, the Board of the Regional District of North Okanagan in an open meeting assembled, hereby **ENACTS AS FOLLOWS**:

CITATION

1. This Bylaw may be cited as “***Electoral Areas “D” and “E” Official Community Plan Amendment Bylaw No. 3037, 2025***”.

AMENDMENTS

2. The Official Community Plan marked Schedule “B” attached to and forming part of the Electoral Areas “D” and “E” Official Community Plan Bylaw No. 2485, 2011 and amendments thereto is amended by changing the land use designation of a portion of the property legally described as Lot 2, DL 3736, ODYD, Plan KAP72265, Except Plans KAP88361 & EPP78287 and located at 44 Ladyslipper Road, Electoral Area “D” from **Non-Urban** to **Small Holding** as shown on the attached Schedule “A”.

Read a First Time	this	16th	day of	April, 2025
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Bylaw considered in conjunction with the Regional District Financial Plan and Waste Management Plan	this	16th	day of	April, 2026
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Read a Second Time

this 22nd day of July, 2026

Advertised on

this 28th day of August, 2026
this 1st day of September, 2026

Public Hearing held

this 10th day of September, 2026

Read a Third Time

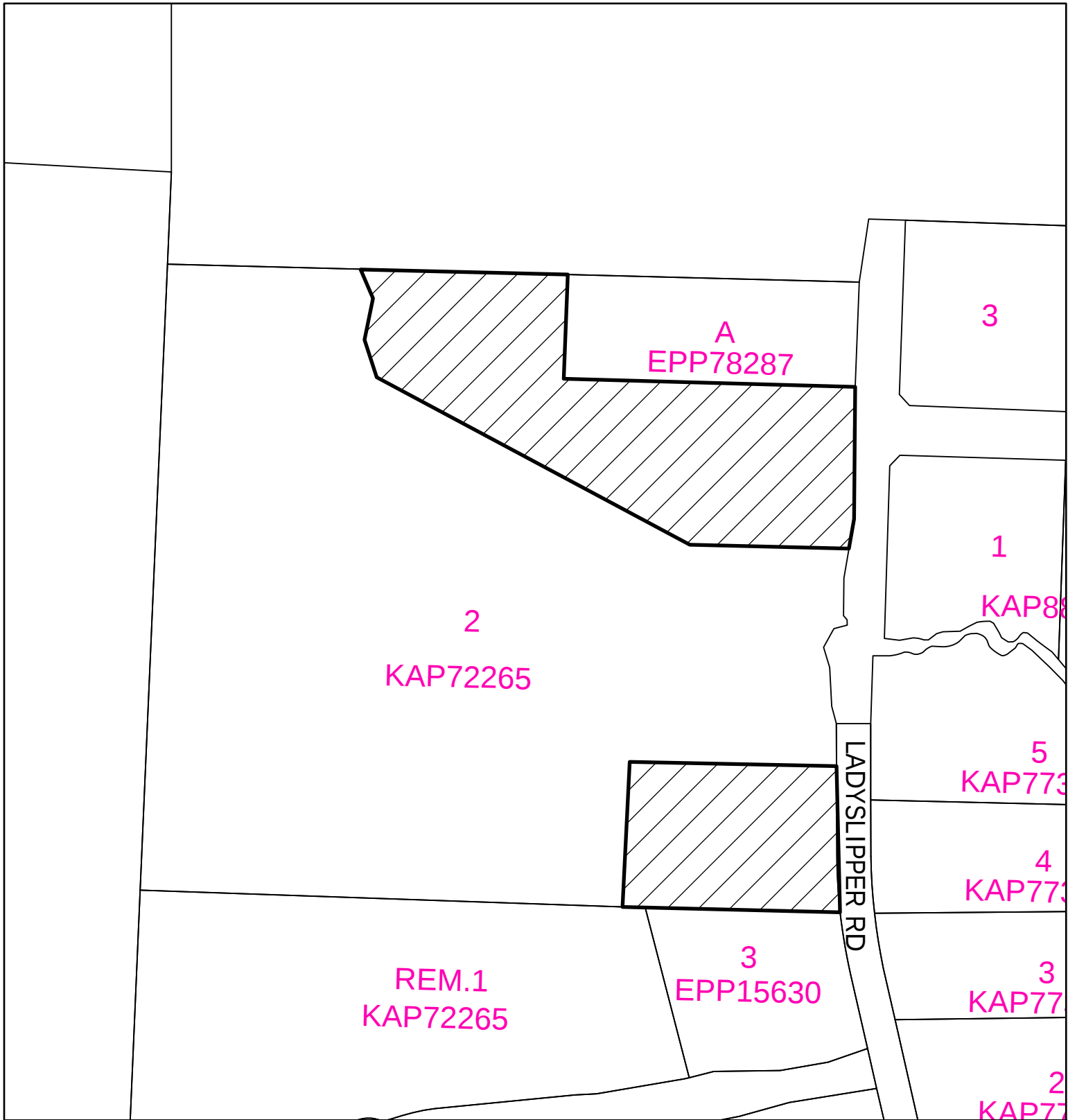
this day of , 2026

ADOPTED

this day of , 2026

Chair
Shirley Fowler

Corporate Officer
Ashley Bevan



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SCHEDULE "A" to accompany Electoral Areas "D" and "E" Official Community Plan Amendment Bylaw No. 3037, 2025.

Area redesignated from Non-Urban to Small Holding shown as...



I hereby certify this to be a true and correct copy of SCHEDULE "A" to accompany the Electoral Areas "D" and "E" Official Community Plan Amendment Bylaw No. 3037, 2025.

Dated at Coldstream, BC this _____ day of _____, 2026

Corporate Officer

REGIONAL DISTRICT OF NORTH OKANAGAN

BYLAW No. 3038

A bylaw to rezone lands and amend the Zoning Map attached to the Regional District of North Okanagan Zoning Bylaw No. 3000, 2023 to change a zone designation.

WHEREAS pursuant to Section 479 [Zoning bylaws] of the *Local Government Act*, the Board of the Regional District of North Okanagan may, by Bylaw, divide the whole or part of the Regional District into zones, name each zone, establish boundaries for the zones and regulate uses within those zones;

AND WHEREAS the Board has created zones, named each zone, established boundaries for these zones and regulated uses within those zones by Bylaw No. 3000, being the “*Regional District of North Okanagan Zoning Bylaw No. 3000, 2023*” as amended;

AND WHEREAS, pursuant to Section 460 [Development approval procedures] of the *Local Government Act*, the Board must, by bylaw, define procedures under which an owner of land may apply for an amendment to a Zoning Bylaw and must consider every application for an amendment to the bylaw;

AND WHEREAS the Board has enacted the “*Regional District of North Okanagan Development Application Procedures and Administrative Fees Bylaw No. 2677, 2018*” as amended to establish procedures to amend an Official Community Plan, a Zoning Bylaw, or a Rural Land Use Bylaw, or to issue a Permit:

AND WHEREAS the Board has received an application to rezone property;

NOW THEREFORE, the Board of the Regional District of North Okanagan in open meeting assembled, hereby **ENACTS AS FOLLOWS**:

CITATION

1. This Bylaw may be cited as “**Zoning Amendment Bylaw No. 3038, 2025**”.

AMENDMENTS

2. The zoning of a portion of the property legally described as Lot 2, DL 3736, ODYD, Plan KAP72265, Except Plans KAP88361 & EPP78287 and located at 44 Ladyslipper Road, Electoral Area “D” is hereby changed on Schedule “A” of the Regional District of North Okanagan Zoning Bylaw No. 3000, 2023 from the **Non-Urban (N.U)** zone to the **Small Holding (S.H)** zone as shown on the attached Schedule “A”.

Read a First Time	this	16th	day of	April, 2025
Read a Second Time	this	22nd	day of	July, 2026
Advertised on	this	28th	day of	August, 2026
	this	1st	day of	September, 2026
Public Hearing held	this	10th	day of	September, 2026
Read a Third Time	this		day of	, 2026

ADOPTED

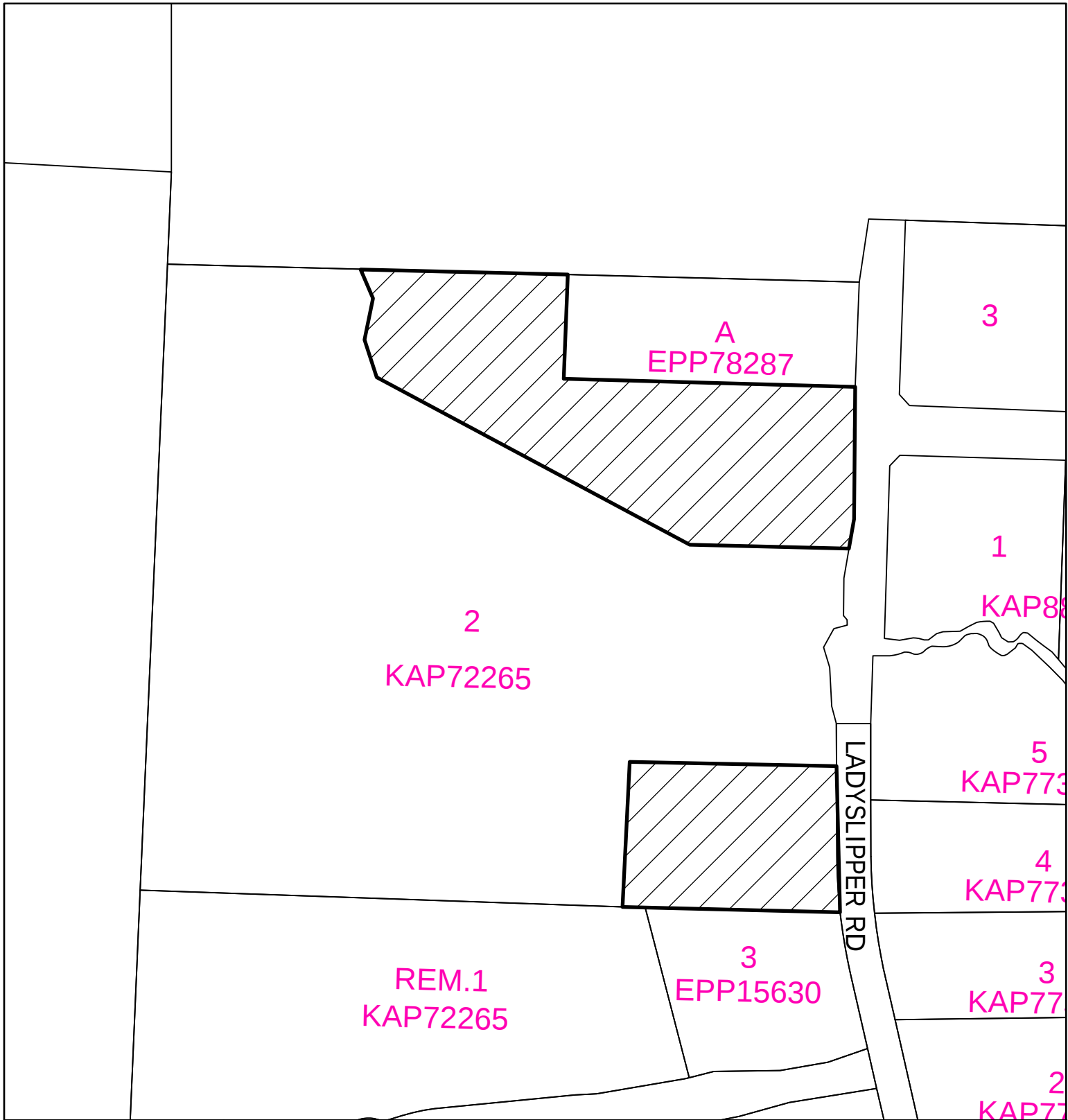
this

day of

, 2026

Chair
Shirley Fowler

Corporate Officer
Ashley Bevan



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SCHEDULE "A" to accompany Zoning Amendment Bylaw No. 3038, 2025.

Area rezoned from Non-Urban (N.U) to Small Holding (S.H) shown as...

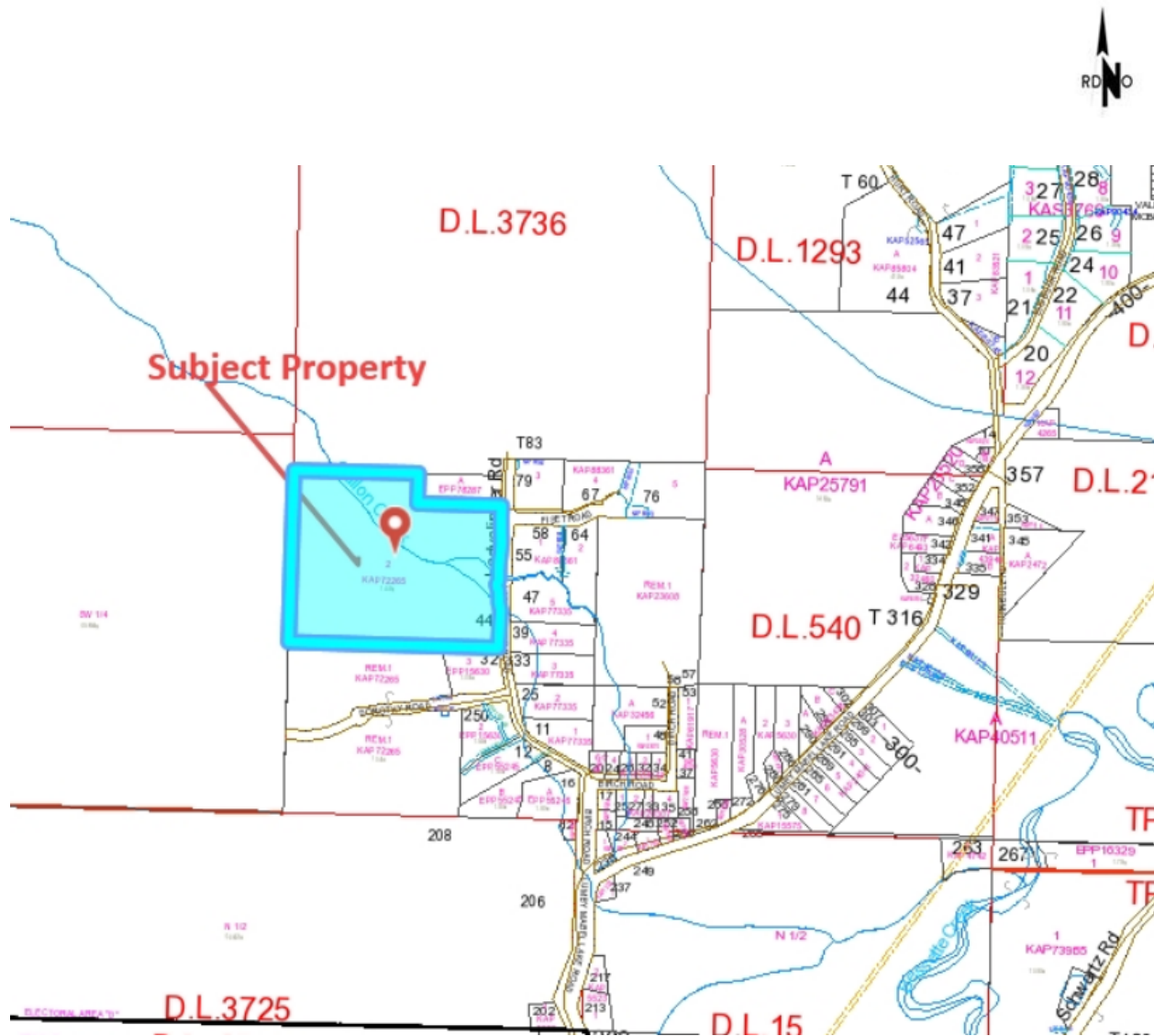


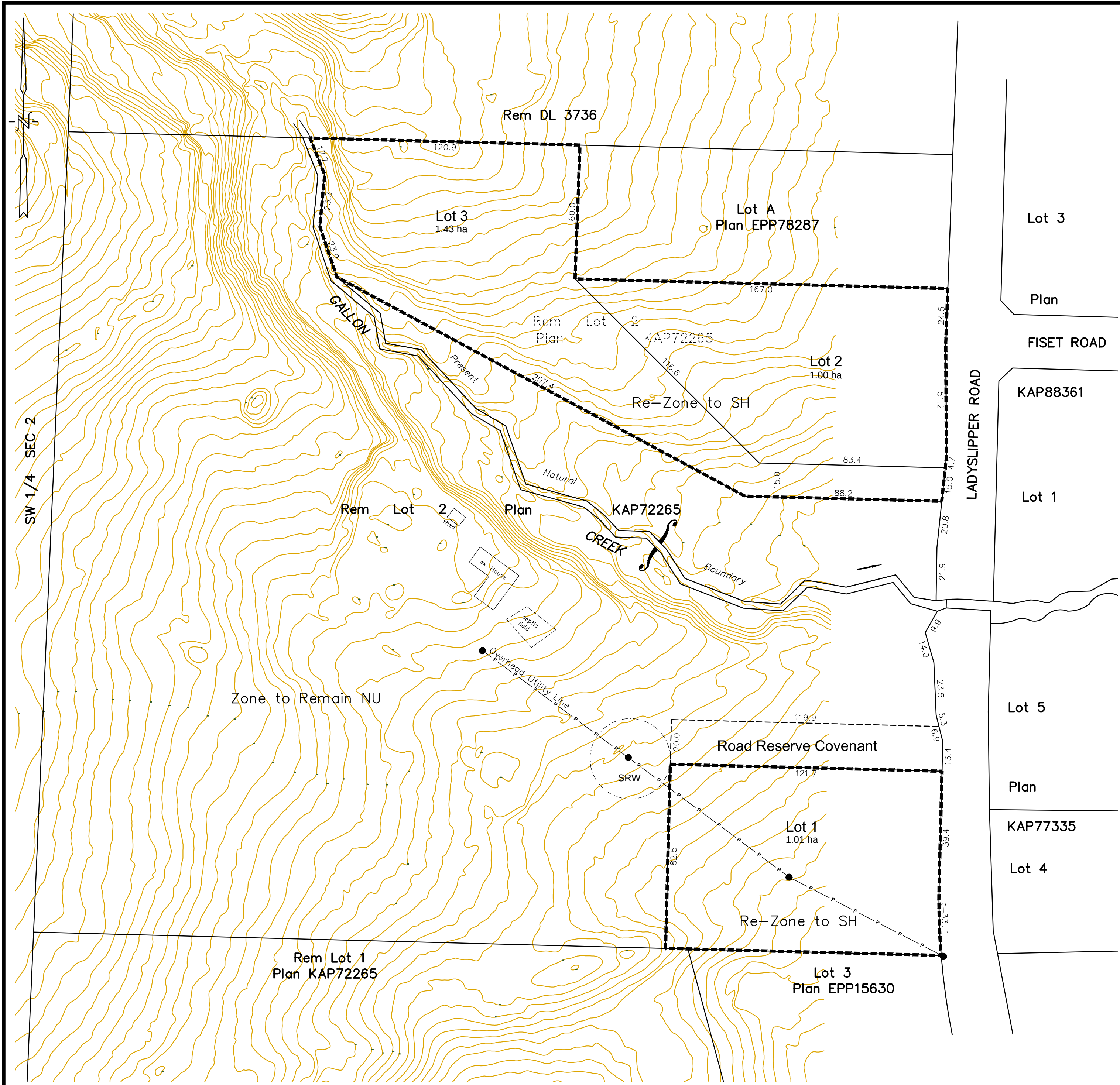
I hereby certify this to be a true and correct copy of SCHEDULE "A" attached to and forming part of Zoning Amendment Bylaw, 3038, 2025.

Dated at Coldstream, BC this _____ day of _____, 2026

Corporate Officer

File: 24-0807-D-OR
Location: 44 Ladyslipper Road





Plan showing proposed subdivision of part of Lot 2, DL 3736, ODYD, Plan KAP72265 except Plan KAP88361, EPP78287

Client: Hornell
Civic address: 44 Ladyslipper Road

SCALE 1:1250

25m 0m 25m 50m 75m

The intended plot size of this plan is 560mm in width by 432mm in height (ANSI C) when plotted at a scale of 1:1250

Contour interval = 1m

LEGEND

● denotes power pole

This plan was prepared for design purposes and is for the exclusive use of Hornell.

Distances are shown in metres and decimals thereof.

Parcel dimensions are derived from Plan KAP72265/ field survey.

This plan shows horizontal ground level distances except where otherwise noted.

Bearings and distances are derived from field survey observations and are referred to the central meridian of UTM zone 11N, NAD83 CSRS

The Certificate of Title PID 025-580-451 was searched on March 12, 2024.

January 7, 2025 - revised zoning
January 2, 2025 - proposed sub revised
November 4, 2024 - added grades
October 25, 2024 - added 1m contours
September 13, 2024

Jason R. Shortt accepts no responsibility for and hereby disclaim all obligations and liabilities for damages including, but not limited to, direct, indirect, special, and consequential damages arising out of or in connection with and direct or indirect use or reliance upon the Plan beyond its intended use.

russell shortt

land SURVEYORS

2801-32nd Street, Vernon, B.C. V1T 5L8

Phone: (250)545-0511

Email: jasons@jrshortt.ca

FILE: 30759

F.B. 1301 Pg. 36

TO: Board of Directors
FROM: Planning Department

File No: 24-0807-D-OR
Date: July 14, 2026

SUBJECT: OCP Amendment Bylaw No. 3037 and Zoning Amendment Bylaw No. 3038

RECOMMENDATION:

That Official Community Plan Amendment Bylaw No. 3037 which proposes to amend the Electoral Areas “D” and “E” Official Community Plan Bylaw No. 2485, 2011 by changing the land use designation of a 3.43 ha portion of the property legally described as Lot 2, DL 3736, ODYD, Plan KAP72265, Except Plans KAP88361 & EPP78287 and located at 44 Ladyslipper Road, Electoral Area “D” from Non-Urban to Small Holding, be given Second Reading and be forwarded to a Public Hearing; and further,

That Zoning Amendment Bylaw No. 3038, which proposes to amend the Regional District of North Okanagan Zoning Bylaw No. 3000 by changing the zoning of a 3.43 ha portion of the property legally described as the Lot 2, DL 3736, ODYD, Plan KAP72265, Except Plans KAP88361 & EPP78287 and located at 44 Ladyslipper Road, Electoral Area “D” from the Non-Urban (N.U) zone to the Small Holding (S.H) zone, be given Second Reading and be forwarded to a Public Hearing; and further,

That the Public Hearing for Bylaw No. 3037 and Bylaw No. 3038 be delegated to the Electoral Area Advisory Committee under Section 231 of the *Local Government Act*.

BACKGROUND:

This report relates to an application to amend the Official Community Plan (OCP) land use designation and zoning of a 3.43 ha portion of a 14.4 ha property located at 44 Ladyslipper Road in Electoral Area “D” from Non-Urban to Small Holding. If approved, the applicant is proposing to subdivide the property to create three new lots.

At the Regular Meeting held on March 19, 2025, the Board of Directors considered the application and resolved that staff be directed to prepare an OCP Amendment Bylaw and a Zoning Amendment Bylaw for First Reading. The Board also resolved that Second Reading of the Bylaws be withheld until:

1. the applicant has held a Public Information Meeting in accordance with the Public Information Meeting Guide and submitted a follow-up report in accordance with the Regional District of North Okanagan Public Information Meeting Guide; and
2. the applicant has provided a report prepared by a professional engineer who has:
 - a. reviewed the proposed development, the physical characteristics of the subject property, and location relative to Gallon Creek;
 - b. provided recommendations, if any, regarding the protection of the proposed development from hazards associated with flooding and debris flow from Gallon Creek; and
 - c. has confirmed that the proposed new lots would be safe for the use intended.
 - d. provided recommendations, if any, regarding the protection of the proposed development from hazards associated with flooding and debris flow from Gallon Creek; and
 - e. has confirmed that the proposed new lots would be safe for the use intended.

At the Regular Meeting held on April 16, 2025, the Board gave First Reading to the associated Electoral Areas "D" and "E" Official Community Plan Amendment Bylaw No. 3037 and Zoning Amendment Bylaw No. 3038.

TECHNICAL REPORT:

Hazards associated with Gallon Creek

In follow-up to the Board's resolution, the applicant has provided a report from Associated Engineering (BC) Ltd. dated June 2026 (Attachment A). The report states that the subject property may be used safely for the intended use and states there is a low to very low avulsion hazard probability. The report further states that comprehensive flood mitigation measures are unnecessary and the Zoning Bylaw can safely govern the building requirements related to floodplain. The report states that the bank gully wall cannot be altered or removed but also notes this is highly unlikely to ever be proposed.

PUBLIC INFORMATION MEETING:

In follow-up to the Board's direction, the applicant held a Public Information Meeting (PIM) at 6:00 PM on Thursday, July 2, 2026. The PIM was held at the White Valley Community Centre located at 2250 Shields Avenue in Lumby. In accordance with the requirements of the Regional District Public Information Meeting Guide, the applicant submitted a report to staff regarding the PIM including the following information:

- photos of the meeting notification sign posted on the property on June 11, 2026;
- copies of the advertisement that was run in the June 19 and June 26, 2026 editions of the Vernon Morning Star newspaper;
- a copy of the mail-out that was delivered to surrounding property owners including the following:
 - o date, time, and purpose of the Public Information Meeting;
 - o address of the location of the PIM and of the subject property;
 - o site plan of the property;
 - o contact information for the applicant and for the Regional District of North Okanagan;
 - o a description of the proposed OCP and Zoning amendments; and
 - o a comment sheet inviting recipients to submit written comments to the Regional District.
- Minutes of the PIM indicate no members of the public attended the meeting.
- No written comments regarding the proposal were received directly by the Planning Department.

DISCUSSION:

The following outlines how the above noted conditions of Second Reading of the subject Bylaws have been addressed.

Hazards associated with Gallon Creek

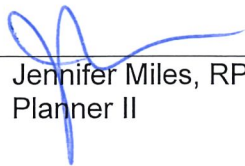
As directed by the Board, the applicant has provided confirmation in writing from a qualified professional Geotechnical Engineer that the subject property is safe for the intended use. A Hazardous Lands Development Permit will also be required at the time of subdivision, unless an exemption applies.

Public Information Meeting

As directed by the Board, the applicant has held a Public Information Meeting in accordance with the Public Information Meeting Guide. No comments were received at or after the meeting as outlined above.

Staff note that the sign posted on the property did not comply with the Public Information Meeting Guide as it did not include the date, time or location of the meeting. However, staff have not received any inquiries or concerns expressed by the public in regards to the sign provided. The Board could require the applicant to hold another Public Information Meeting, if the Board is not satisfied that the applicant followed the guidelines.

Submitted by:



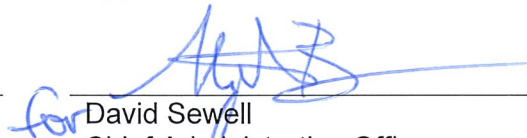
Jennifer Miles, RPP, MCIP
Planner II

Endorsed by:



Rob Smailes, RPP, MCIP
General Manager, Planning and Building

Approved for Inclusion:



for David Sewell
Chief Administrative Officer



Associated
Engineering

GLOBAL PERSPECTIVE.
LOCAL FOCUS.

Attachment A
24-0807-D-OR

REPORT

David & Sheri Hornell
44 Ladyslipper Road, Lumby, BC

Site-Specific Flood Hazard Assessment (FHA)
Gallon Creek



JUNE 2026



Platinum
member

Attachment A

24-0807-D-OR

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This report was prepared by Associated Engineering (B.C.) Ltd. for the account of David & Sheri Hornell 44 Ladyslipper Road, Lumby, BC. The material in it reflects Associated Engineering (B.C.) Ltd.'s best judgement, in the light of the information available to it, at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Associated Engineering (B.C.) Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

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1 INTRODUCTION & BACKGROUND

Associated Engineering (B.C.) Ltd. (Associated) was engaged by **David & Sheri Hornell** (the Owners) to complete a site-specific **flood hazard assessment** (FHA) at 44 Ladyslipper Road (the subject property). The Owners want to subdivide the subject property into four Lots (three new Lots and one Remainder Lot). Gallon Creek flows through and bisects the subject property and an FHA is necessary for the proposed land development.

The subject property is in the Regional District of North Okanagan (RDNO) Electoral Area D and is therefore subject to Bylaw No. 2485 Official Community Plan (OCP) for Electoral Areas “D” and “E”, and Bylaw No. 3000 Zoning Bylaw. In addition to RDNO bylaws, the safety of the proposed subdivision should be evaluated following Engineers and Geoscientists BC (EGBC) professional practice guidelines EGBC (2018).

Associated completed a site visit on June 11, 2025. A preliminary assessment memo (Task 1) was prepared for the subject property to summarize initial findings. Following the preliminary assessment the Owners agreed to move forward with Task 2 for an FHA. The FHA report herein summarizes the results of a Class 1¹ FHA (EGBC 2018) completed for the subject property and includes field review, hydrotechnical assessments, hydraulic modelling results, flood hazard summary, and recommendations.

1.1 Proposed Land Development

The subject property is currently occupied by a home and accessory building (garage / shop) (**Figure 1-1**). The legal address of the subject property is:

LOT 2, DISTRICT LOT 3736, OSOYOOS DIV OF YALE, PLAN KAP72265, EXCEPT PLAN KAP88361 & EPP78287

Russell Shortt Land Surveyors completed a topographic survey and proposed subdivision plan of the subject property that is included in **Appendix A**. In addition, this survey plan identifies the present natural boundary of Gallon Creek. It is understood that the accessory building was constructed without a Building Permit. **Appendix A** also includes a property report from the RDNO.

The Owners applied to subdivide the subject property. The RDNO wrote the following in their response to the Official Community Plan / Rezoning Application:

- “[T]he applicant has provided a report prepared by a professional engineer who has:
 - a) reviewed the proposed development, the physical characteristics of the subject property, and location relative to Gallon Creek;
 - b) provided recommendations, if any, regarding the protection of the proposed development from hazards associated with flooding and debris flow from Gallon Creek; and
 - c) has confirmed that the proposed new lots would be safe for the use intended.”

Therefore, the RDNO requires this information to be submitted for their review and approval on the proposed subdivision and existing accessory building. This FHA provides the requested information.

¹ Class 1 refers to the FHA Level of Effort suggested by EGBC in Table D-1 (EGBC 2018) for a small subdivision (3 to 10 lots).

Figure 1-1 Google Earth Aerial Image of the Subject Property



1.2 Previous Study

Associated Environmental Consultants Inc.² (2020) completed a flood hazard and erosion assessment for the neighbouring property to the south of the subject property (Lot 1, DL 3736, ODYD, Plan KAP72265 except Plan EPP15630). The previous work included desktop and field review of Gallon Creek in 2020. The results of the study concluded that there is low likelihood of a flood hazard from Gallon Creek and a low hazard of an avulsion on the alluvial fan. This was largely attributed to the Gallon Creek channel being confined in a deep incised gully.

1.3 History of Flooding

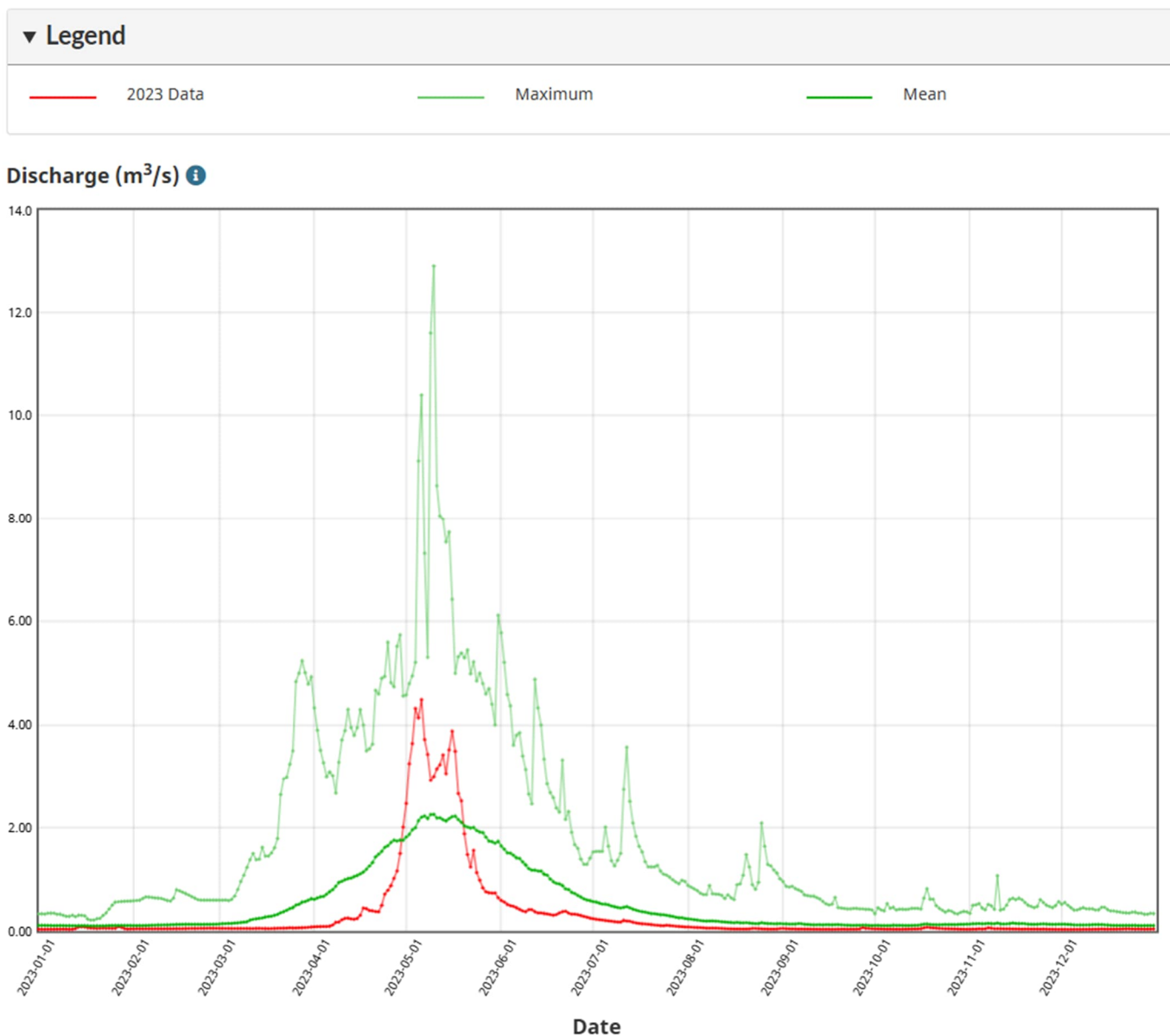
There are no known hydrometric records for Gallon Creek. However, available hydrometric records on nearby Coldstream and Vance Creeks show that higher streamflow events typically occur between April and June during freshet. Refer to **Figure 1-2** for an example of the Vance Creek hydrograph.

A memorandum issued by RDNO (1996) indicated that Gallon Creek had flooding and erosion on (or around) June 1, 1996 from a rain-on-snow event. This event impacted the 'Birch Road subdivision' that is located downstream of the subject property, east of Ladyslipper Road.

² Part of the Associated Engineering Group of Companies

Associated (2020) noted that a debris flow occurred in the year 2000 due to a blocked culvert in an upslope forest operation (forestry access road). Water and sediment damaged the road and continued downgradient as a debris flow eventually resting on a gentler slope. The Ministry of Forests and Range assisted with reclamation of the damage and later placed a covenant on the impacted area to preclude residential development, which is north of the subject property. This event was not on Gallon Creek and was isolated to the forest operation.

Figure 1-2 Daily Discharge Graph for Vance Creek below Deafies Creek (WSC 08LC040)



2 SCOPE OF WORK & METHODS

2.1 Scope of Work

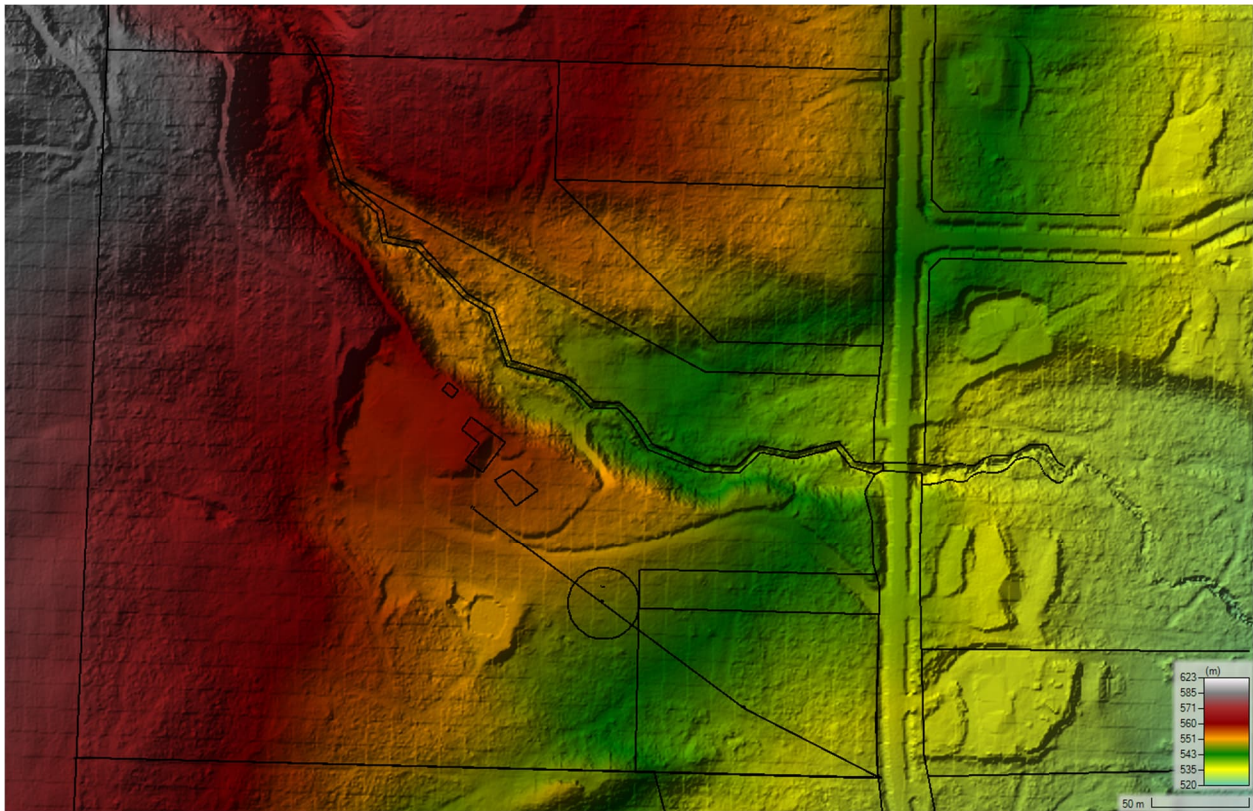
The FHA included the following tasks:

- Background and field reviews, including relevant land information for the subject property;
- Confirmation and review of subject property boundary, proposed subdivision plans, and topographic survey (provided by Russell Shortt Land Surveyors) (**Appendix A** and **Figure 2-1**);
- Review of digital elevation model (DEM) obtained from LiDAR BC (**Figure 2-2**);
- Hydrologic analysis to estimate design flow conditions;
- Hydraulic modelling with HEC-RAS;
- Assessment of flood hazards and mitigation measures; and
- Preparation of the Class 1 flood hazard assessment report.

Figure 2-1 Subdivision Plan and Topographic Survey Overlayed on Google Earth Image



Figure 2-2 Subdivision Plan Overlaid on LiDAR Digital Elevation Model (DEM)



3 ASSESSMENT CRITERIA

3.1 Engineers and Geoscientists BC Guidelines

EGBC (2018) guidelines are intended to describe practice standards and outline the general services required for FHA work. Based on the number of Lots proposed (three new and one remaining) and following EGBC (2018) guidelines, Associated completed a Class 1 FHA. This type of assessment is applicable to a “Small Subdivision” (EGBC 2018). The typical deliverables for a Class 1 FHA include:

- Creek cross sections with water levels,
- Flood mapping showing flood extents with depths or elevations,
- Water velocities,
- Identification of hazard areas,
- Assessment of erosion, and
- FHA reporting.

The guidelines require a *Flood Assurance Statement* to accompany the FHA. For the FHA completed herein, the EGBC guidelines were followed, and the accompanying *Flood Assurance Statement* is provided in **Appendix B**.

3.2 Bylaws

Section 6 of RDNO's Zoning Bylaw (RDNO 2023) stipulates the following floodplain management regulations:

1. The flood construction level (FCL) is 1.5 m above the natural boundary of Gallon Creek.
 - The underside of any floor system that is used for dwelling purposes, business, or storage of goods must be above the FCL.
2. The floodplain (horizontal) setback is 15 m from the natural boundary of Gallon Creek.
3. A professional engineer must assess if the subject property is safe for the use intended.

In addition, the RDNO's OCP Bylaw (RDNO 2011) identifies that the subject property is on an alluvial fan. It is therefore within the Hazardous Lands Development Permit Area, and the proposed subdivision requires a Hazardous Lands Development Permit.

3.3 Hydrologic Criteria

A 200-year return period streamflow is a broadly accepted design criterion for the assessment and mitigation of flood hazards in BC (EGBC, 2018). The 200-year event has an associated annual exceedance probability (AEP)³ of 0.5% and was adopted to evaluate flooding at the subject properties. This is a standards-based approach to the FHA.

EGBC (2018) guidelines require an assessment of climate change for flood hazard assessments (FHA). A climate change assessment was conducted to consider potential changes in climate conditions and subsequent impacts to the hydrologic regime over time.

Lastly, 'clear flow' conditions have been assumed for the FHA. Larger flows from debris flood or debris flow conditions have not been modelled. Refer to Section 4.2 for rationale.

4 FLOOD HAZARD ASSESSMENT

EGBC (2018) defines a flood as:

"a condition in which a watercourse or body of water overtops its natural or artificial confines and covers land not normally under water. When a flood becomes a source of potential harm it becomes a hazardous flood."

The overarching objective of an FHA is to identify potential flood hazards, quantify flooding conditions, assess safety, and determine if mitigation measures are necessary. A Qualified Professional (QP) ultimately must submit a *Flood Assurance Statement* (**Appendix B**) to confirm that the subject property is safe for the use intended.

4.1 Field Inspection

Associated (Geoffrey Cahill, P.Eng. and Diego Lazarte) completed a site visit on June 11, 2025 to meet the Owners, observe Gallon Creek and the proposed subdivision area on the subject property, and make a preliminary field assessment of any flood hazards. About 500 m of the channel was observed from Ladyslipper Road to just above the

³ An AEP of 0.5% means there is a 0.5% probability that the flood event will occur in any given year.

subject property boundary. Water was flowing in the channel; however, the flow was small and not measured. The flow depth was less than 10 cm. Photos of the channel are provided in [Appendix C](#).

The existing structures, including the dwelling and accessory building, are situated south of Gallon Creek and approximately 220 m west of Ladyslipper Road. The existing structures are on a natural terrace feature above Gallon Creek. Based on the survey drawing provided ([Appendix A](#)), the existing structures are approximately 10 m to 11 m higher than the channel elevation. This is a large vertical separation between the structures and channel.

4.2 Gallon Creek Geomorphology

The field inspection showed that Gallon Creek has cascade-pool morphology and wood has a functional role in the channel. The channel has incised bank sections. The dominant bed material size is cobble. Gravel-sized material is intermixed between the cobbles and there were sporadic boulders observed in the channel. Photos of the channel are provided in [Appendix C](#).

Two culverts were observed and their diameters were measured. At Ladyslipper Road there is a 1,600 mm diameter culvert crossing. An access road upstream of the property has a 900 mm culvert. The inlet areas are armoured with riprap at both culvert crossings.

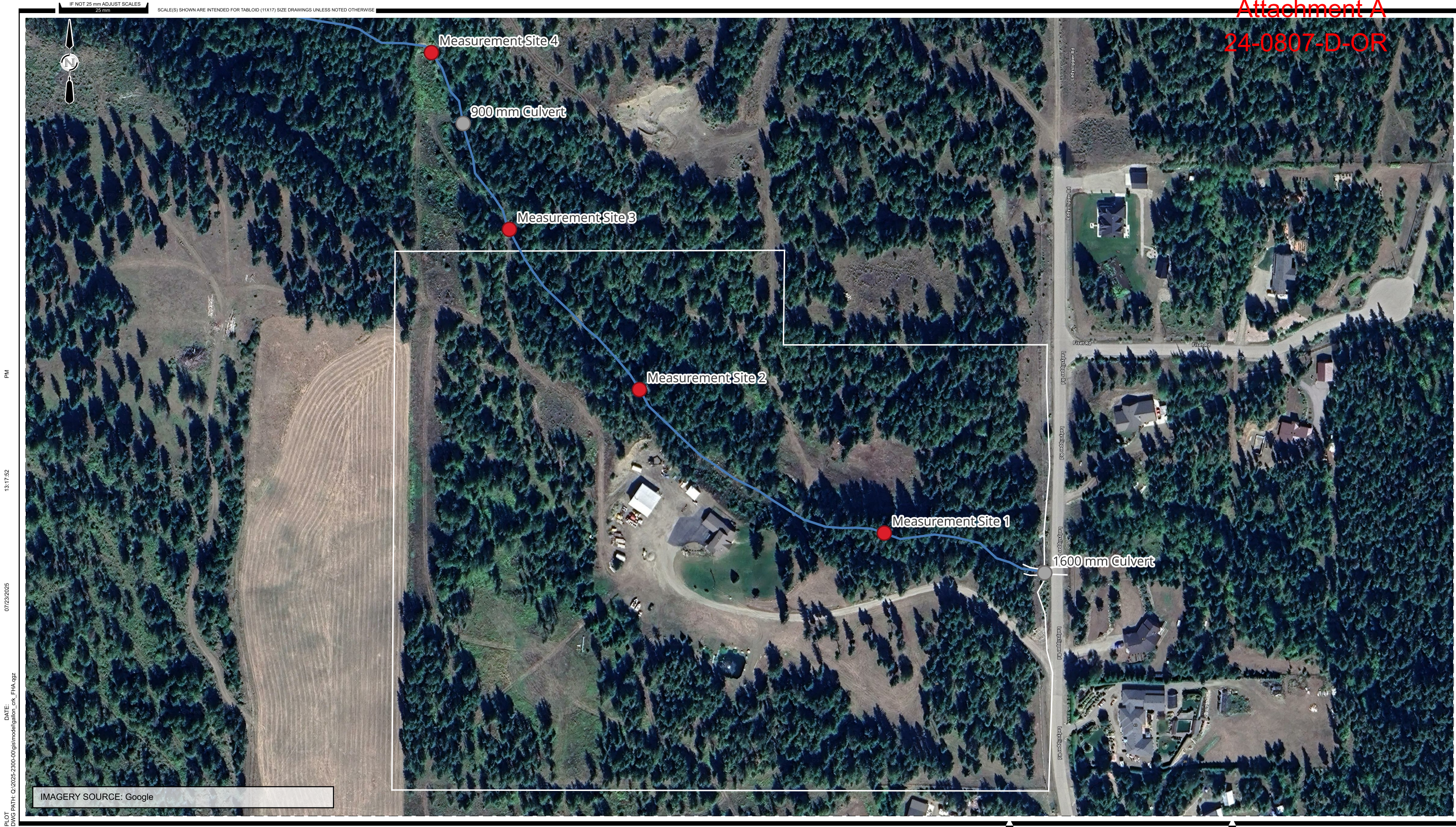
The riparian area is mature forest along Gallon Creek. There is an old access road that parallels the channel. It is narrow and only accessible by all-terrain vehicles.

As with most natural stream channels there was variation in width and depth observed. Bankfull⁴ measurements were taken and these are summarized in [Table 4-1](#). The approximate measurement locations are shown on [Figure 4-1](#). The observed channel had an average bankfull width of 2.16 m and bankfull depth of 0.28 m. The channel gradient was not measured in the field. However, the channel is considered steep, and the Russell Shortt survey drawing indicates the channel gradient is between 4% and 7%.

Table 4-1 Bankfull Measurements of Gallon Creek at Subject Property

Measurement Location	Bankfull Depth (m)	Bankfull Width (m)
1. Upstream of Ladyslipper Road 1,600 mm Culvert	0.32	1.39
2. Upstream of Accessory Building	0.28	2.99
3. Upstream of Property Boundary	0.28	1.63
4. Clearing / Upstream of 900 mm Culvert	0.22	2.62
Average of Four Locations:	0.28	2.16

⁴ The term 'bankfull' refers to the water elevation and flow that regularly occur (statistically approximately every 2 years). It is considered equivalent to the surveyed natural boundary and vegetation line observed on a creek bank.



PM

13:17:52

07/23/2025

PLOT DATE: 07/23/2025
DWG PATH: Q:\2025-2300-00\gis\models\gallon_crk_FHA.qgz

Associated (2020) divided the Gallon Creek channel into four sections for evaluation and reporting. A summary of Associated's (2020) channel assessment is provided below.

Channel Reaches

Associated (2020) divided Gallon Creek into four distinct reaches extending from the upland watershed to Ladyslipper Road. In the upland watershed, small seasonal tributaries flow across a hilly plateau into the head of a gorge, and extensive forestry activity—particularly cutblocks and roads—has likely increased peak flows by reducing forest cover and increasing snow accumulation and melt rates. Despite these changes, there has been no evidence of channel relocation or avulsion in the upper area. As the creek enters the bedrock gorge, it flows through a narrow, deeply incised corridor with steep slopes and fractured bedrock. The gorge contains gravel, cobbles, and wood debris, showing signs of high streamflow but no indications of debris flows or major past erosional disturbances.

Downstream of the gorge, the creek transitions onto the alluvial fan in a wide and deeply incised gully. This section contains scattered recent sediment deposits, such as gravel wedges, but remains highly confined. Old trails and a 1970s irrigation intake road intersect this reach but do not significantly alter channel behaviour. Closer to Ladyslipper Road, the channel remains incised by 1 m to 10 m until just above the road crossing, where the gully shallows. Although some crossings and culverts impede sediment movement, they do not divert the stream, and the incision continues to contain water effectively within the gully.

Alluvial Fan

Associated (2020) notes that the apex of the fan is located at the outlet of the bedrock gorge, where the creek flows into a single, deeply incised gully that extends across the fan. The fan sediments consist of well-drained sandy and gravelly materials, likely more than ten metres thick. There is no evidence of historical channel avulsions, relict channels, or overbank flooding on the fan surface. Although minor sloughing occurs along roadcuts on the gully walls, these small failures do not obstruct flow or alter the channel's alignment. The fan surface beyond the gully shows no signs of past flood disturbance.

Associated (2020) concludes that Gallon Creek is consistently confined—first in a bedrock gorge and then in a deep gully incised into the alluvial fan. This confinement prevents water from escaping the channel, even during high-magnitude events. While forestry activity in the watershed may have increased peak flows and sediment movement, the creek remains too deeply entrenched for overbank flooding or avulsion toward the subject property to occur. Erosion and sedimentation occur locally but do not threaten the integrity of the gully or raise the channel enough to overtop the fan surface. Even under climate-change-driven increases in snowmelt and rain-on-snow events, the creek is not expected to escape its confined path.

Channel Avulsion Potential

Associated (2020) evaluated the potential for channel avulsion using the Boyer (2001) method, which incorporates stream power and fan sensitivity. The stream power rating for Gallon Creek is low because the channel is small, with a cross-sectional area of 1 m² to 2 m² and a gradient of 4% to 8 %, and because the gully confines flow. The alluvial fan itself has low sensitivity due to deep incision, the presence of only one active channel, limited stored sediment, and moderate amounts of woody debris that do not influence channel stability significantly. When combined, these factors yield an overall avulsion hazard classified as low to very low. Even large floods, wildfire-induced hydrologic changes, or upstream sediment inputs are unlikely to cause an avulsion or create a flood hazard to the subject property.

4.3 Aerial Photograph Review

Historical aerial photographs were reviewed between 1967 and 2007 ([Table 4-2](#)) (plus available imagery in Google Earth) to assess if there have been any channel changes over time. Images are provided [Appendix D](#).

Table 4-2 List of Aerial Photographs Reviewed

Roll	Frame	Media	Date	Time	Scale	Focal Length
BC5246	58	Black and White	15-Jun-1967	10:25AM	1:32,000	153 mm
BC7373	83	Black and White	8-Aug-1971	9:30AM	1:15,840	305 mm
BC7878	264	Black and White	10-Sept-1976	11:40AM	-	305 mm
BC81023	294	Black and White	24-Jun-1981	2:05PM	1:10,000	153 mm
BC85093	58	Black and White	4-Oct-1985	10:46AM	1:16,000	153 mm
BCC708	172	Colour	21-Aug-1987	9:56AM	1:15,000	305 mm
BCC90080	202	Colour	27-Aug-1990	10:31AM	1:15,000	305 mm
BCC94043	193	Colour	8-Jul-1994	10:40AM	1:15,000	305 mm
BCC97025	182	Black and White	28-Jul-1997	10:01AM	1:40,000	153 mm
BCC04015	115	Colour	16-Jul-2004	9:37AM	1:30,000	153 mm
BCC07002	171	Colour	26-Jun-2007	10:21AM	1:20,000	153 mm

Interpretation of the historical aerial photograph review is summarized below:

- There are several roads or trails visible in the watershed in 1967. There does not appear to be any cutblocks.
- The gorge reach of Gallon Creek is clearly visible, but the channel downgradient of the gorge is indiscernible.
- Ladyslipper Road did not exist in 1967. However, the first section of Birch Road of the Lumby-Mabel Lake Road is noticeable.
- The second section of Birch Road (east-west direction) is noticeable in 1971.
- The Birch Road subdivision is clearly visible built-out in 1976. There is a trail or access road in the general alignment of Ladyslipper Road off the corner of Birch Road.
- There is forest harvesting upgradient of the (current) Ladyslipper Road area visible in 1981. Ladyslipper Road is still not present.
- The 1981 aerial photograph is better resolution and larger scale, but the Gallon Creek channel downgradient of the gorge is indiscernible. This indicates the channel is small and has not moved or caused any disturbance.
- There are no noticeable changes between the 1981, 1985, and 1987 aerial photographs. The 1987 aerial photograph is the first colour image.
- There are forest harvesting and roads in the watershed between 1989 and 1997.
- The Ladyslipper Road alignment has been cleared in 2001. Clearing of the subject property is also visible.
- The subject property driveway has been constructed in 2004.

- The subject property dwelling is visible in 2007.
- There are no noticeable changes to Gallon Creek in the photograph period of record.

4.4 Hydrology and Climate Change

Associated completed a climate change and hydrologic analysis to identify changes to design events in the future and the subsequent impacts on Gallon Creek. Further details are provided in the ensuing subsections about the Gallon Creek watershed (4.4.1), climate change analysis (4.4.2), and flow estimation procedure (4.4.3).

4.4.1 Watershed Overview

The watershed area upstream of Ladyslipper Road drains an area of approximately 13.6 km². The elevation ranges from around 540 m up to 1,220 m, which includes upland hills over a steep gorge and lower valley. Topographic mapping shows upland channels converging from the east and the north to form the mainstem of Gallon Creek, which ultimately flows southeast into the lower gorge. The upland area is forested with some areas showing cutblocks from prior forestry activities. Provincial mapping shows the biogeoclimatic zone is Interior Cedar – Hemlock (ICH).

4.4.2 Climate Change

Consideration of climate change in FHA work is standard practice in BC (EGBC 2018). Hydrologic regimes in BC are being affected by global climate change, and the QP must include an assessment. Flow estimates are adjusted upwards to estimate design flows that include climate change. The amount of adjustment depends on the watershed location and climate data.

Associated estimated the effects of climate change on rainfall using the temperature scaling Clausius Clapeyron Method per CSA 4013-19. Projected rainfall intensities (R_p) are estimated from current rainfall intensities (R_c) and a temperature scaling factor (CC_{adj}), along with a projected change in local temperature (T) as noted in the following equation (CSA 2019):

$$R_p = R_c \times (CC_{adj})^T$$

It is recommended that an increase of 7% per 1°C warming be applied in the equation, resulting in a value of 1.07 for CC_{adj} . Climate Data Canada web-based portal released CMIP6 and SSP5-8.5 scenarios predict a mean annual temperature increase of 5.5°C, ranging from 4.4°C to 8.1°C. Accordingly, we estimated the percent increase in precipitation intensity using the Clausius Clapeyron relation with a mean annual temperature increase of 5.5°C. The result is a 45% increase in future rainfall intensity.

A rain gauge near the watershed was used to estimate the 200-year rainfall depth. The Environment and Climate Change Canada (ECCC) weather station at Lumby (ID: 1164729) was chosen as it was reasonably close and has at least 20 years of data. A frequency analysis was completed to estimate design rainfall depths. Monthly peaks for May, June, and July were analyzed and fitted with distributions using the *Lmomco* (version 2.4.72) R package. The resulting 200-year rainfall depth was 41.76 mm. With a 45% climate change adjustment the rainfall depth is 60.56 mm. This value was used as part of the flow estimation procedure further described in section 4.4.3.

4.4.3 Flow Estimation

Regional analysis, watershed transfer, and hydrologic modelling methods were used to estimate design flows in Gallon Creek. Regional analysis and watershed transfer methods infer ungauged flows based on streamflow observations from gauged watersheds that are thought to exhibit similar hydrologic behaviour. In contrast, a hydrologic model provides a site-specific flow estimate by simulating a direct representation of the ungauged watershed.

Regional Analysis

Regional analysis is applicable to ungauged watersheds greater than 10 km² in area. Flow estimates produced through regional analysis is influenced by multiple gauged watersheds and their corresponding range of drainage areas.

Associated reviewed regional stream gauges operated by the Water Survey of Canada (WSC), initially selecting gauged watersheds based on the following factors:

- Proximity to the Gallon Creek watershed and hydrologic zone,
- Size of the watershed,
- Similarities in watershed attributes (elevation band, land cover, no lake storage, no flow regulation), and
- Years of record with peak annual flow observations (minimum 15).

Associated performed flood frequency analysis of WSC hydrometric station records selected as part of the regional analysis, based on the screening criteria noted above. A final list of eight WSC hydrometric stations were selected for the regional analysis of Gallon Creek and these are summarized in **Table 4-3**.

For completion of the flood frequency analysis, we used the *Lmomco* (version 2.4.72) R package to find the best-fit distribution to the peak annual flow rates from each hydrometric station record. *Lmomco* was used to rapidly fit six theoretical distribution types (i.e., Generalized Extreme Value [GEV], Gamma [GAM], Gumbel [GUM], Log-Normal (2 parameters) [LN2], Pearson Type III [PE3], and Log-Pearson Type III [LP3]) to the peak annual flow datasets. Goodness of fit tests (Kolmogorov-Smirnov [K-S] and Chi-squared [C-S] tests) were used to assess which theoretical distributions best fit the annual maximum daily peak streamflow dataset. We then used regression analysis to calculate flow rates for various return periods based on the drainage area for Gallon Creek.

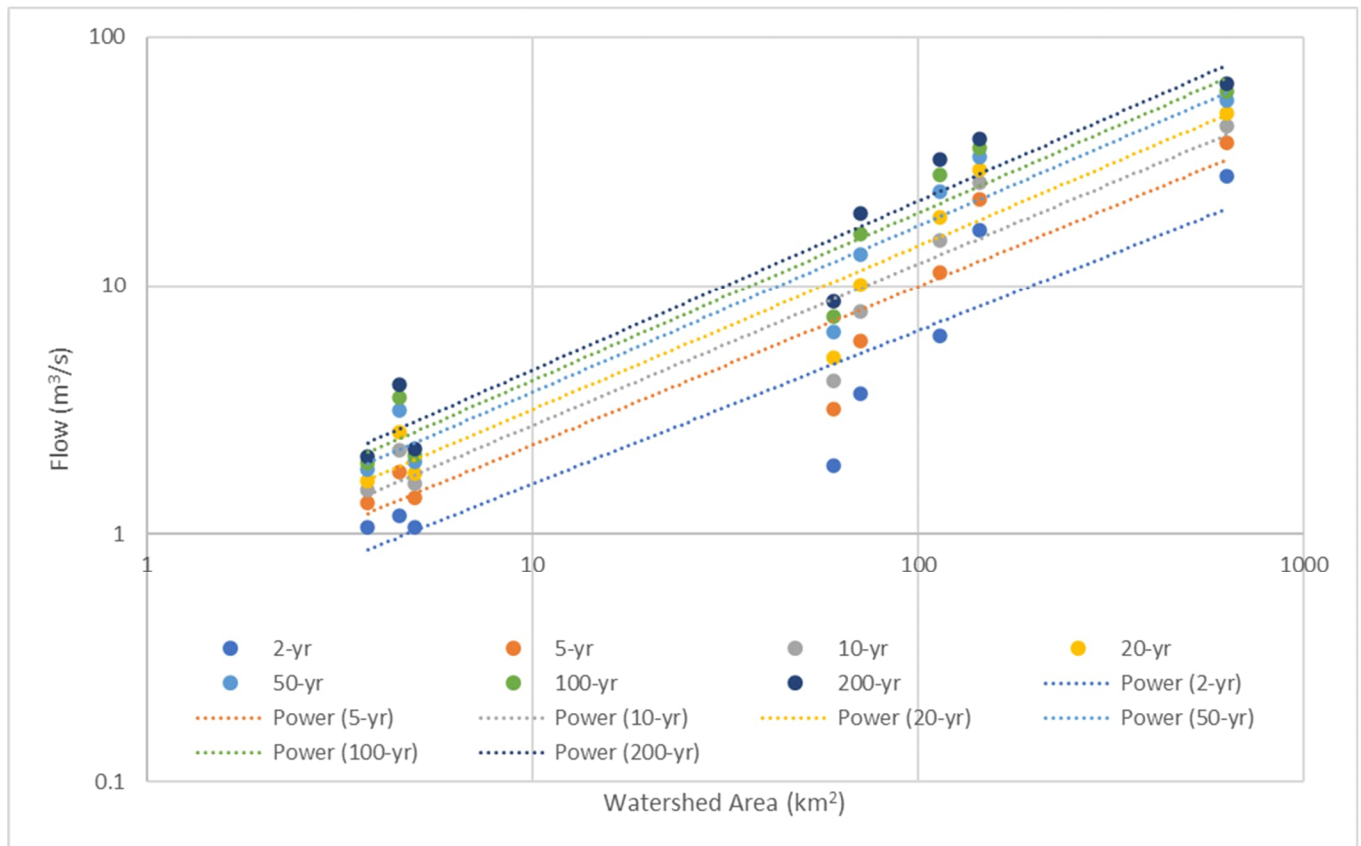
The regional analysis chart is shown in **Figure 4-2**. Based on a power function trendline with a coefficient of determination (R^2) of 0.912, the 200-year flow estimate (without climate change) is 5.62 m³/s.

Table 4-3 WSC Hydrometric Stations included in Regional Analysis Flow Estimation

Hydrometric Station Name	Station Number	Watershed Area (km ²)	Hydrologic Zone
Bessette Creek Above Lumby Lagoon Outfall	08LC042	632	Okanagan Highland
Trapping Creek near the Mouth	08NN019	145	Okanagan Highland
Whiteman Creek Above Bouleau Creek	08NM174	114	Fraser Plateau
Vance Creek Below Deafies Creek	08LC040	70.9	Okanagan Highland
Coldstream Creek Above Municipal Intake	08NM142	60.6	Okanagan Highland

Hydrometric Station Name	Station Number	Watershed Area (km ²)	Hydrologic Zone
Two Forty Creek Near Penticton	08NM240	4.94	Southern Thompson Plateau
Two Forty-One Creek Near Penticton	08NM241	4.5	Southern Thompson Plateau
Dennis Creek Near 1780 Metre Contour	08NM242	3.73	Southern Thompson Plateau

Figure 4-2 Regional Analysis Chart (Without Climate Change)



Watershed Transfer Method

A watershed transfer method was also used to estimate Gallon Creek flows, as per the following equation:

$$Q_{\text{ungauged}} = Q_{\text{gauged}} \times \left(\frac{\text{Area}_{\text{ungauged}}}{\text{Area}_{\text{gauged}}} \right)^b$$

where the exponent b is the scaling factor, which was assumed to be 0.85 for the Gallon Creek watershed (NHC 2021). All eight WSC hydrometric stations listed in Table 4-3 were calculated for the 200-year flow estimate and an average of these were taken. As noted above the Gallon Creek watershed is approximately 13.6 km². Using this method, the 200-year flow estimate (without climate change) is 5.21 m³/s.

Hydrologic Modelling with HEC-HMS

A HEC-HMS model implementation of the SCS Method was used to estimate design flows and evaluate differences under historic and climate change-adjusted rainfall events. The HEC-HMS model simulated catchment runoff responses to the 200-year, 24-hour design rainfall event, implemented with and without climate change as a Type II SCS storm. The Type II SCS storm was selected based on fit of rainfall data to various SCS storm distributions (Millar 2017) using published short duration rainfall intensity-duration-frequency (IDF) data for the Vernon Climate Station (1128551) that is near the Gallon Creek watershed.

The HEC-HMS model represented the Gallon Creek watershed as one forested catchment. This is a simplified hydrologic model and is suitable for small watersheds⁵. The selected SCS Curve Number was 60, representing 'Woods' with a 'Fair' hydrologic condition (USDA 1986). This was for an average antecedent moisture condition (AMC II) in the soil layer. The estimated Time of Concentration (T_c) was 2.4 hours based on the Hathaway and Bransby Willams empirical methods. The Lag Time was 1.44 hours (i.e., 60% of T_c). The simulated design flows from the HEC-HMS model were 3.93 m³/s and 6.93 m³/s under historical and future climate conditions, respectively. The climate-adjusted estimate represents a 77% increase from historical conditions.

Summary and Design Flow Estimate

A comparison of the results is shown in [Table 4-4](#). The first two methods (regional analysis and watershed transfer) resulted in a larger flow estimate under historical conditions without climate change. However, the hydrologic model with climate change resulted in the most conservative flow estimate. Thus, the recommended design flow for Gallon Creek at the subject property is 6.93 m³/s.

Table 4-4 Comparison of Hydrologic Method Results

Method	200-year Flow (m ³ /s) Without Climate Change	200-year Flow (m ³ /s) With Climate Change
Regional Analysis	5.62	n/a
Watershed Transfer	5.21	n/a
Hydrologic Model	3.93	6.93

4.5 Hydraulic Modelling

A hydraulic model was built to analyze flood characteristics of Gallon Creek at the subject property and to determine if there are flood hazards and mitigation measures required. The model provides estimates of hydraulic characteristics of design flow conditions to support the FHA, with areas of overland flooding being the primary result to assess.

4.5.1 Model Build

HEC-RAS software from the US Army Corps of Engineers was used for hydraulic modelling. Available LiDAR from the province was used to create the DEM for the hydraulic model surface. The channel geometry was not altered within the DEM as detailed bathymetry data was not available. Therefore, the model will estimate conservative flood elevations, and this was accepted given the purpose of the FHA. A 2-dimensional (2D) model was built using over

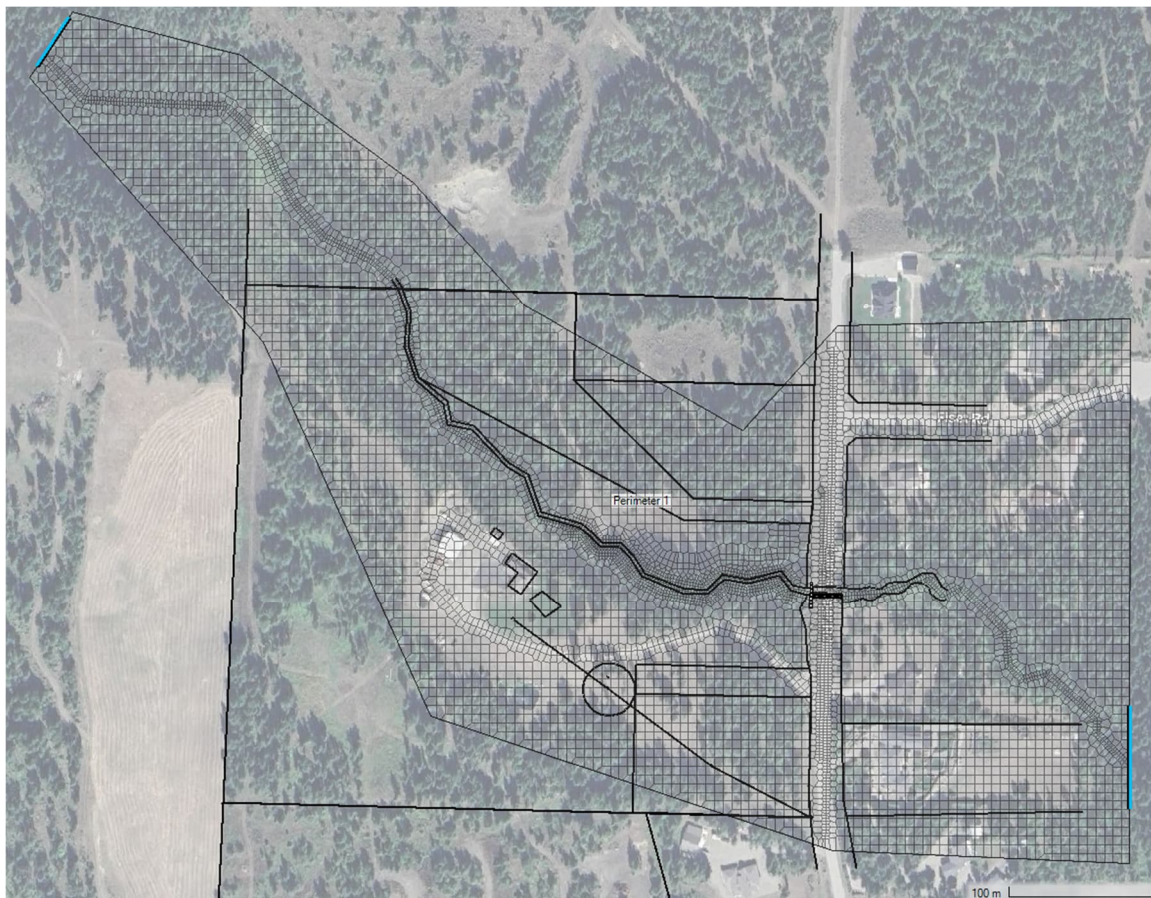
⁵ The Gallon Creek watershed is marginally larger (13.6 km²) than the range typically recommended for the SCS Method (up to 10 km²).

8,000 cells (**Figure 4-3**). The primary cell size was 6 m by 6 m, and breaklines were inserted at topographical grade changes and along Gallon Creek. The breaklines reduced nearby cell sizes 4 m or 2 m.

The model surface roughness was represented by Manning's n areas:

- Creek channel: $n = 0.05$
- Overland areas: $n = 0.10$
- Roadways: $n = 0.02$
- Culvert: $n = 0.024$

Figure 4-3 Overview of 2D Model Area Showing Cells



Model calibration was not possible due to the absence of site-specific hydrometric data. Sensitivity review of the Manning's n values was completed to evaluate surface roughness. As expected, reducing the creek channel roughness to a lower value resulted in a higher water velocity, and increasing the creek channel roughness to a higher value resulted in lower water velocity. The value of 0.05 was selected for the creek channel based on comparison of Gallon Creek site observations with literature and past professional experience. The channel is considered steep and has cascade-pool morphology.

In total approximately 1 km of the Gallon Creek channel was included in the model, and it extended upstream and downstream of the subject property. Boundary conditions for the model were the design flow (upstream) and normal depth (downstream). The average channel gradient was about 6% in the LiDAR and this is consistent with the Russell Shortt survey drawing. The 1,600 mm diameter culvert at Ladyslipper was included in the hydraulic model.

4.5.2 Model Results

Key model simulation results of maximum water depth and maximum water velocity simulated for the design flow are shown in **Figure 4-4** and **Figure 4-5**, respectively. The design flow is contained within the main channel of Gallon Creek through most of the subject property. As flow approaches the lower reach near Ladyslipper Road there is overland flow observed. However, there is no flooding observed on any of the three proposed new Lots, and this is an important result of the FHA. The overland flooding is only observed on the Remainder Lot in the model results. A design flow water surface profile is shown in **Figure 4-6** for the subject property extents.

Water surcharges on the upstream side Ladyslipper Road due to inadequate capacity of the existing culvert and a change in channel gradient. The existing culvert is not large enough to safely convey the design flow, and the road crossing is not the responsibility of the Owners. The culvert is presumably owned by the RDNO or the Ministry of Transportation and Transit (MoTT).

Using a typical culvert nomograph for CSP, the capacity of a 1,600 mm culvert without surcharging is approximately 4 m³/s. The culvert size would have to increase to approximately 2,200 mm diameter CSP to safely convey the design flow of 6.93 m³/s. The surcharging overtops Ladyslipper Road by 0.2 m on the upstream side and this could result in flood damage to the road structure. A road cross section of this result is shown in **Figure 4-7**.

Model simulation results show a few areas of fast water velocity in Gallon Creek (flowing supercritical). These are in locations where the channel is steep, narrow, or both steep and narrow compared to average channel geometry from the DEM data. It is not surprising to observe short localized areas of high velocity and supercritical in a steep channel. While localized erosion may occur, the subject property is not at risk of flooding due to the surrounding land elevation and horizontal separation that exists. In particular, the existing dwelling and accessory building on the Remainder Lot are approximately 10 m to 11 m higher than the channel and at least 30 m setback from the channel. These are shown in **Figure 4-8** and **Figure 4-9**.

Figure 4-4 Maximum Depth During Design Event at Subject Property

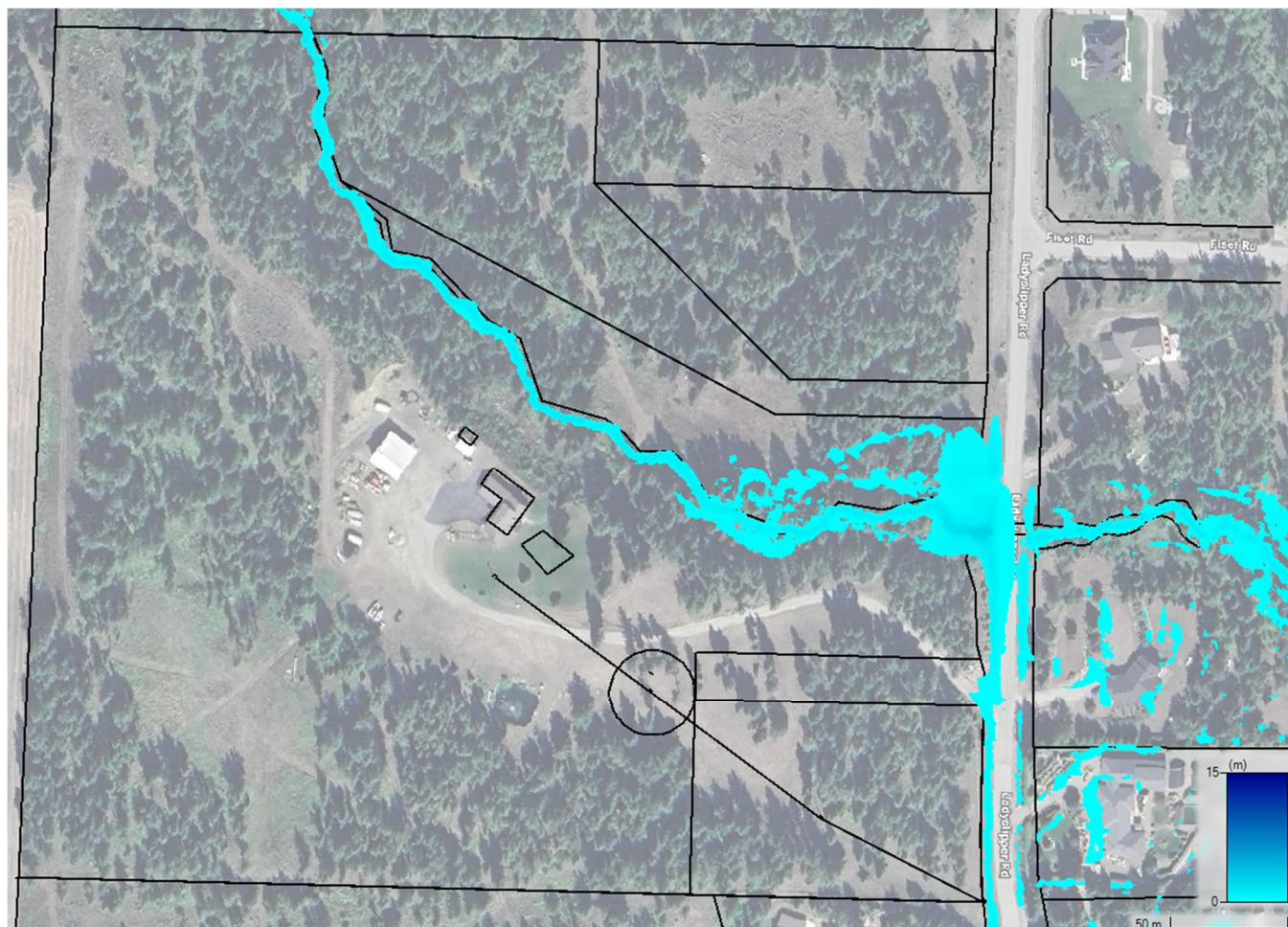


Figure 4-5 Maximum Velocity During Design Event at Subject Property

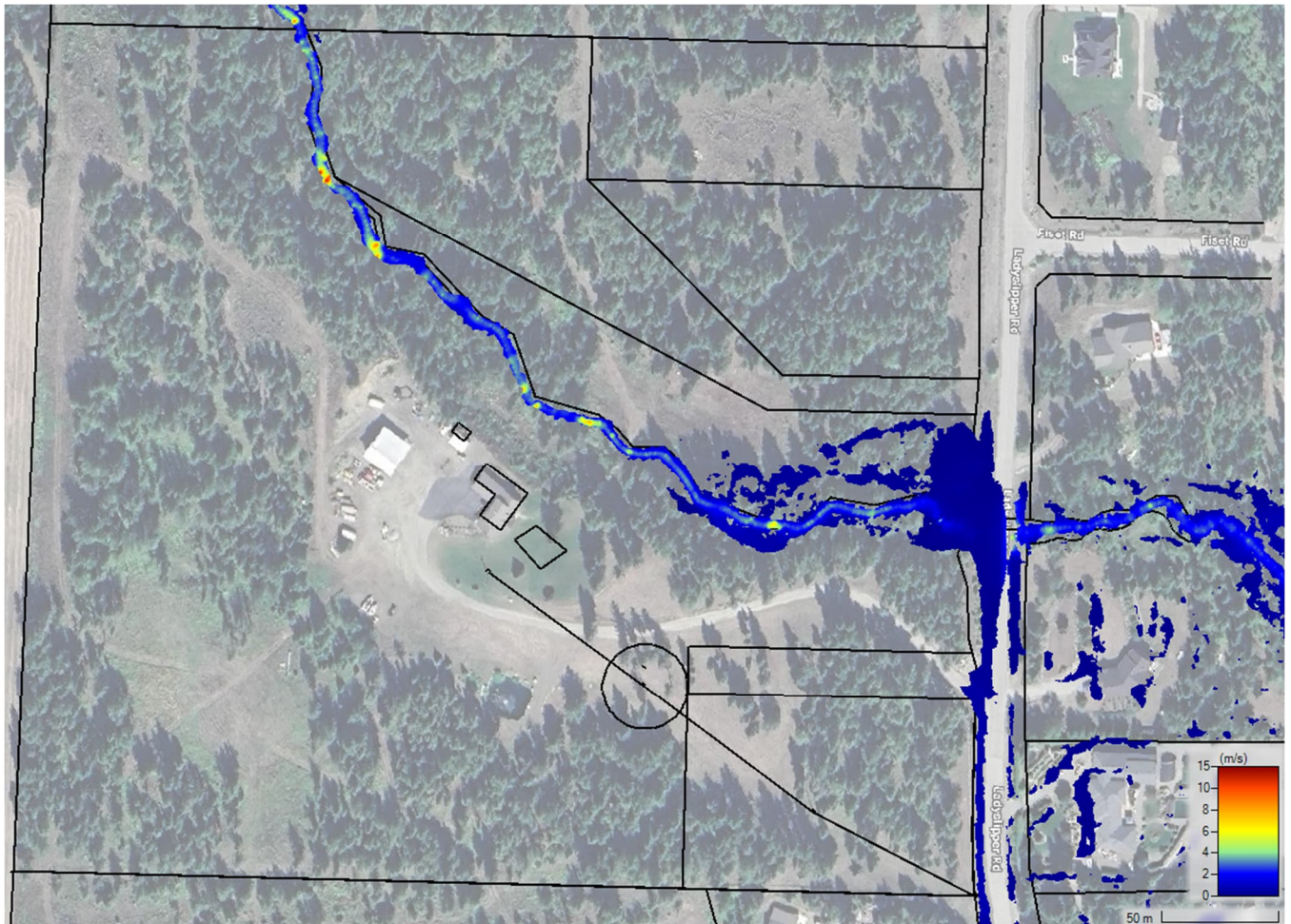


Figure 4-6 Design Flow Profile within the Subject Property

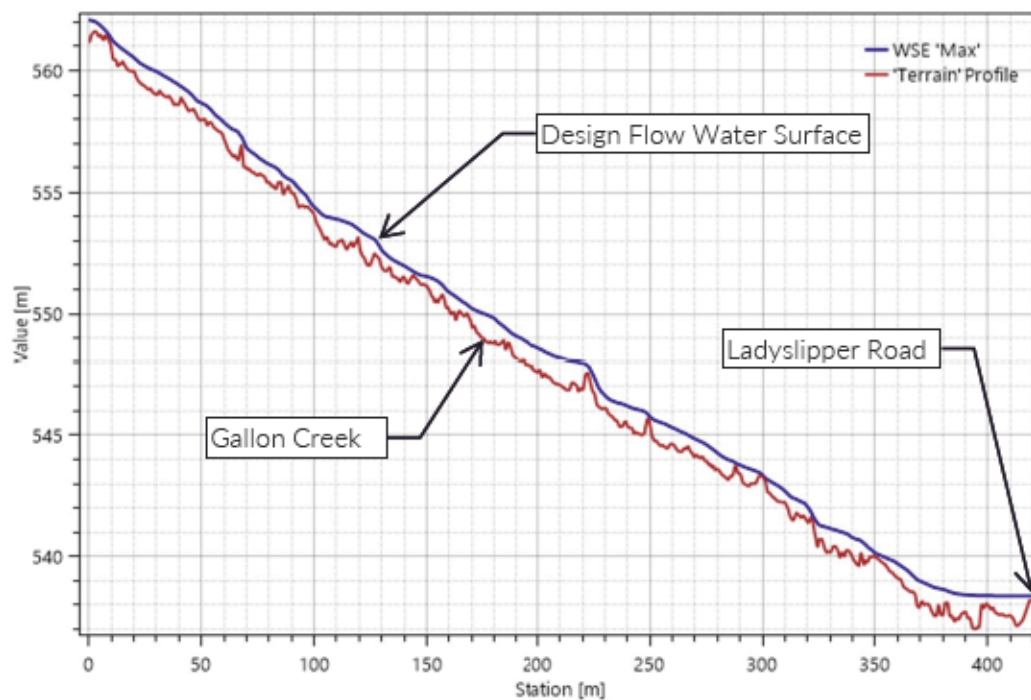


Figure 4-7 Model Cross Section of Ladyslipper Road Overtopping

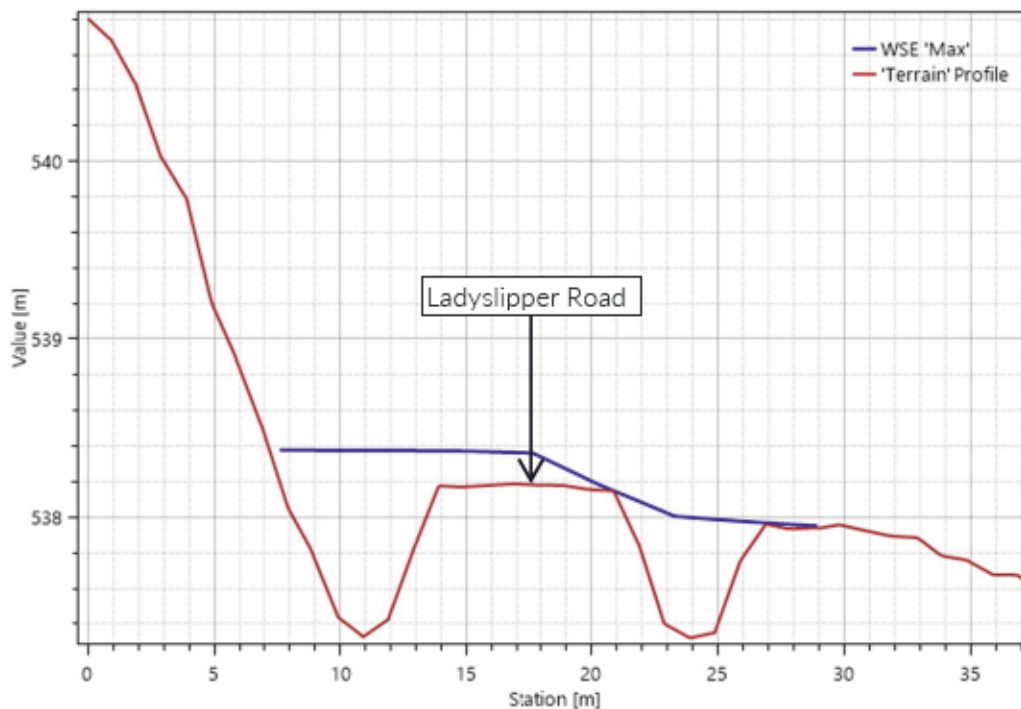


Figure 4-8 Model Cross Section at Existing Dwelling

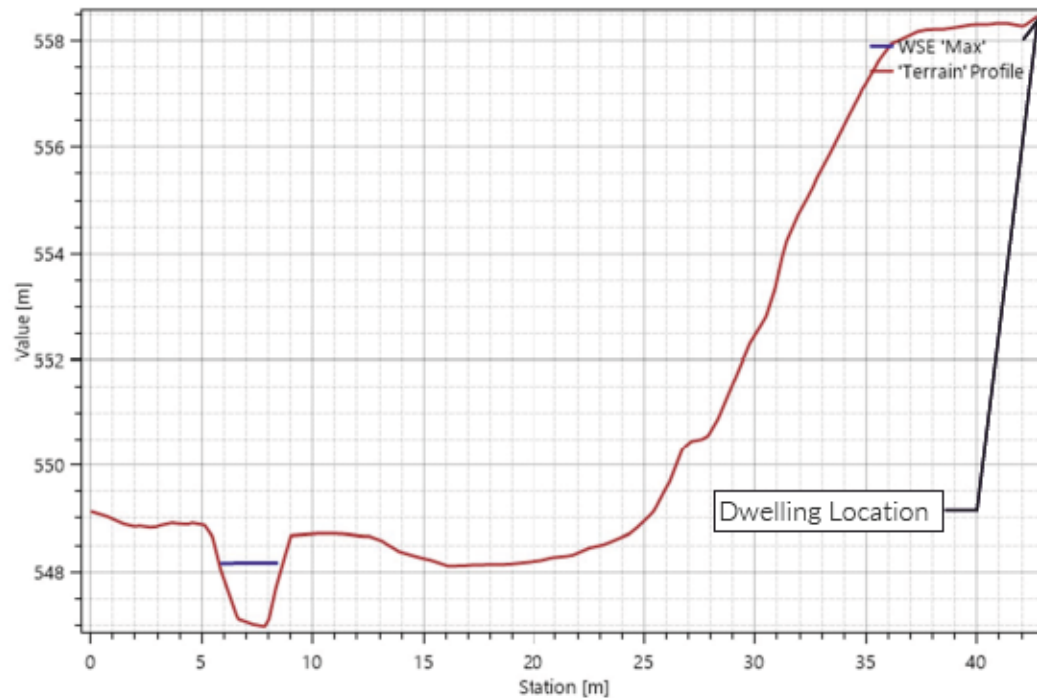
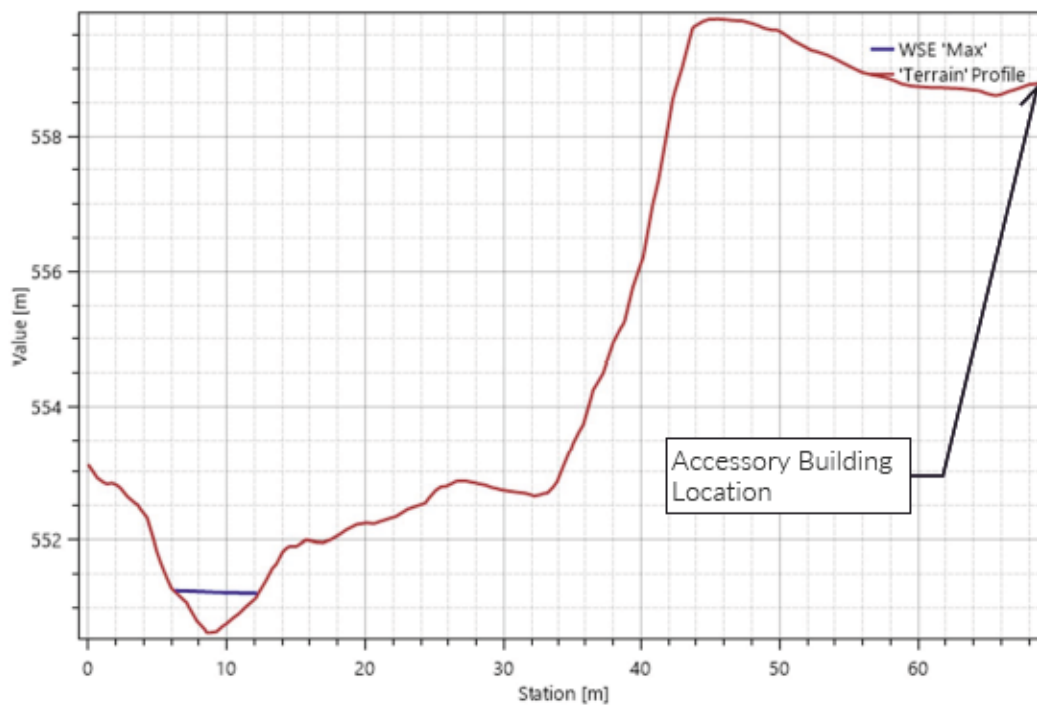


Figure 4-9 Model Cross Section at Accessory Building (Garage)



5 CONCLUSION AND RECOMMENDATION

Associated completed a site-specific Class 1 FHA for the subject property. The FHA included:

- Background and field reviews, including relevant land information for the subject property;
- Confirmation and review of subject property boundary, proposed subdivision plans, and topographic survey;
- Review of digital elevation model (DEM);
- Hydrologic analysis and design flow estimation;
- Hydraulic modelling; and
- Assessment of flood hazards.

Associated (2020) previously assessed the channel, alluvial fan, and potential for an avulsion. The mainstem channel is confined to a bedrock gorge and then a deep gully incised into the alluvial fan. The channel confinement prevents water from escaping the channel. The alluvial fan itself has low sensitivity due to deep incision, the presence of only one active channel, limited stored sediment, and moderate amounts of woody debris that do not influence channel stability significantly. When combined, these factors yield a low to very low avulsion hazard.

Gallon Creek flows through and bisects the subject property. Based on the hydraulic model results there were two flood hazard areas identified in the FHA:

1. Areas immediately within or adjacent to Gallon Creek. During a flood event it could be hazardous to be near Gallon Creek. It is noted that the proposed subdivision has both horizontal and vertical separation from the creek, which mitigates the hazard.
2. The area upstream of the Ladyslipper Road culvert that shows overland flooding. The culvert is the responsibility of others, and the culvert has inadequate capacity to safely convey the design flow. The Owners of the subject property do not have authority to replace this culvert.

The model simulation results show that the design flow is contained within the main channel of Gallon Creek through most of the subject property, which is consistent with the Associated (2020) assessment. Overland flooding is not observed until the lower reach where the channel is less steep, and flow approaches the Ladyslipper Road culvert.

Based on the proposed subdivision arrangement of the subject property and considering there is limited overland flooding, it is Associated's professional opinion that the subject property is safe for the use intended. The *Flood Assurance Statement* is included in **Appendix B**. Comprehensive flood mitigation measures are unnecessary and RDNO's Zoning Bylaw (RDNO 2023) can safely govern the building requirements on the floodplain:

- The FCL should be at least 1.5 m above the natural boundary of Gallon Creek.
- The floodplain setback should be at least 15 m from the natural boundary of Gallon Creek.

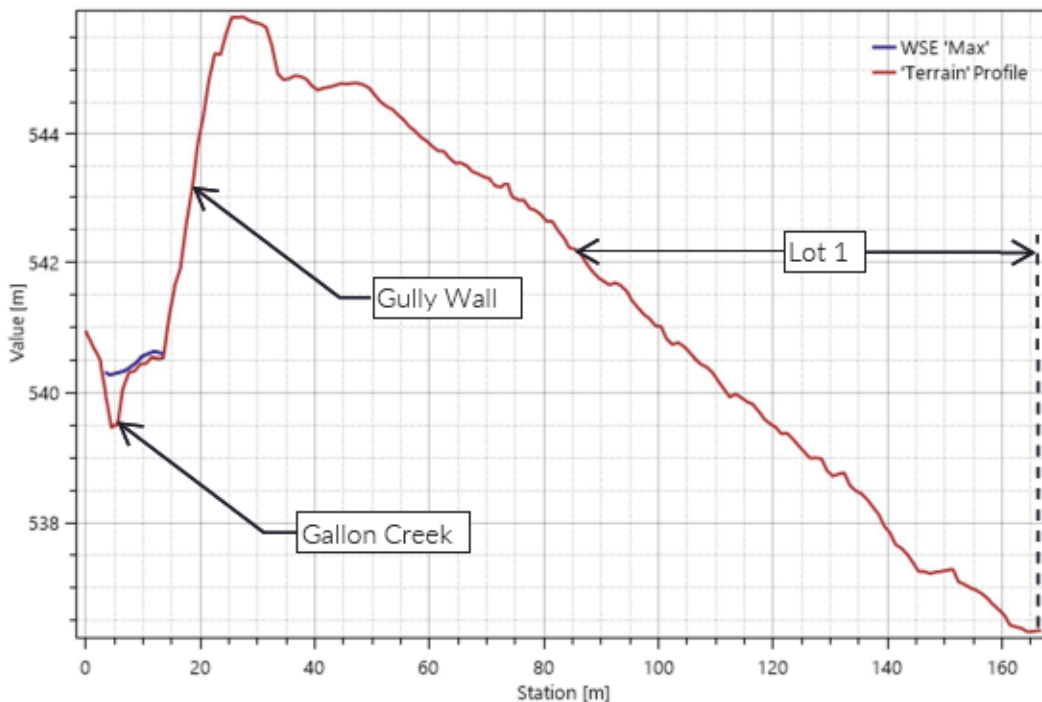
The natural boundary was surveyed by Russell Shortt Land Surveyors (**Appendix A**). The two requirements above are typically measured perpendicular to the direction of flow. Proposed Lots 2 and 3 are naturally higher than Gallon Creek and selecting building locations to meet these two requirements on the lots will be easily achievable.

Lot 1 is more than 60 m setback from Gallon Creek and this more than satisfies the horizontal separation building requirement. However, the FCL requirement for Lot 1 warrants further discussion. There is a gully wall separating the channel and Lot 1. Refer to **Figure 5-1**. The gully wall is continuous, more than 5 m high, and provides a natural barrier

between Gallon Creek and the proposed lot. Therefore, Gallon Creek cannot overtop the gully wall or flow towards Lot 1. When measured perpendicular to the channel most of Lot 1 is lower than a normal FCL. Therefore, Associated recommends the following:

- The right bank gully wall cannot be altered or removed. The earthwork required to remove the gully wall would be very large and is highly unlikely to ever be proposed. However, it must be stated that the gully wall provides a natural flood barrier for Lot 1 and it must remain intact.
- The FCL requirement for Lot 1 can be ignored because of the gully wall elevation.

Figure 5-1 Example Cross Section Between Gallon Creek and Proposed Lot 1



A summary of the FHA recommendations is provided in [Table 5-1](#).

Table 5-1 FHA Recommendations

Floodplain Recommendation	Remainder Lot	Lot 3	Lot 2	Lot 1
Horizontal Requirement	15 m from natural boundary (minimum)			
Vertical Requirement	1.5 m above natural boundary (minimum)			Not applicable
Safe for the use intended with recommendation?	Yes	Yes	Yes	Yes

David & Sheri Hornell
44 Ladyslipper Road, Lumby, BC

Attachment A
24-0807-D-OR

CLOSURE

This report was prepared for David & Sheri Hornell to complete a flood hazard assessment for their subject property at 44 Ladyslipper Road in the RDNO Electoral Area D.

The services provided by Associated Engineering (B.C.) Ltd. in the preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practising under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted,

Associated Engineering (B.C.) Ltd.
Engineers & Geoscientists BC Permit Number: 1000163

Geoffrey Cahill, P.Eng.
Manager, Water Resources
Professional of Record

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APPENDIX A – SURVEY PLAN AND PROPERTY REPORT

Plan showing proposed subdivision of part of Lot 2, DL 3736, ODYD, Plan KAP72265 except Plan KAP88361, EPP78287

Client: Hornell
Civic address: 44 Ladyslipper Road

SCALE 1:1250

25m 0m 25m 50m 75m

The intended plot size of this plan is 560mm in width by 432mm in height (ANSI C) when plotted at a scale of 1:1250

Contour interval = 1m

LEGEND

● denotes power pole

This plan was prepared for design purposes and is for the exclusive use of Hornell.

Distances are shown in metres and decimals thereof.

Parcel dimensions are derived from Plan KAP72265/ field survey.

This plan shows horizontal ground level distances except where otherwise noted.

Bearings and distances are derived from field survey observations and are referred to the central meridian of UTM zone 11N, NAD83 CSRS

The Certificate of Title PID 025-580-451 was searched on March 12, 2024.

January 7, 2025 - revised zoning
January 2, 2025 - proposed sub revised
November 4, 2024 - added grades
October 25, 2024 - added 1m contours
September 13, 2024

Jason R. Shortt accepts no responsibility for and hereby disclaim all obligations and liabilities for damages including, but not limited to, direct, indirect, special, and consequential damages arising out of or in connection with and direct or indirect use or reliance upon the Plan beyond its intended use.

russell shortt

land SURVEYORS

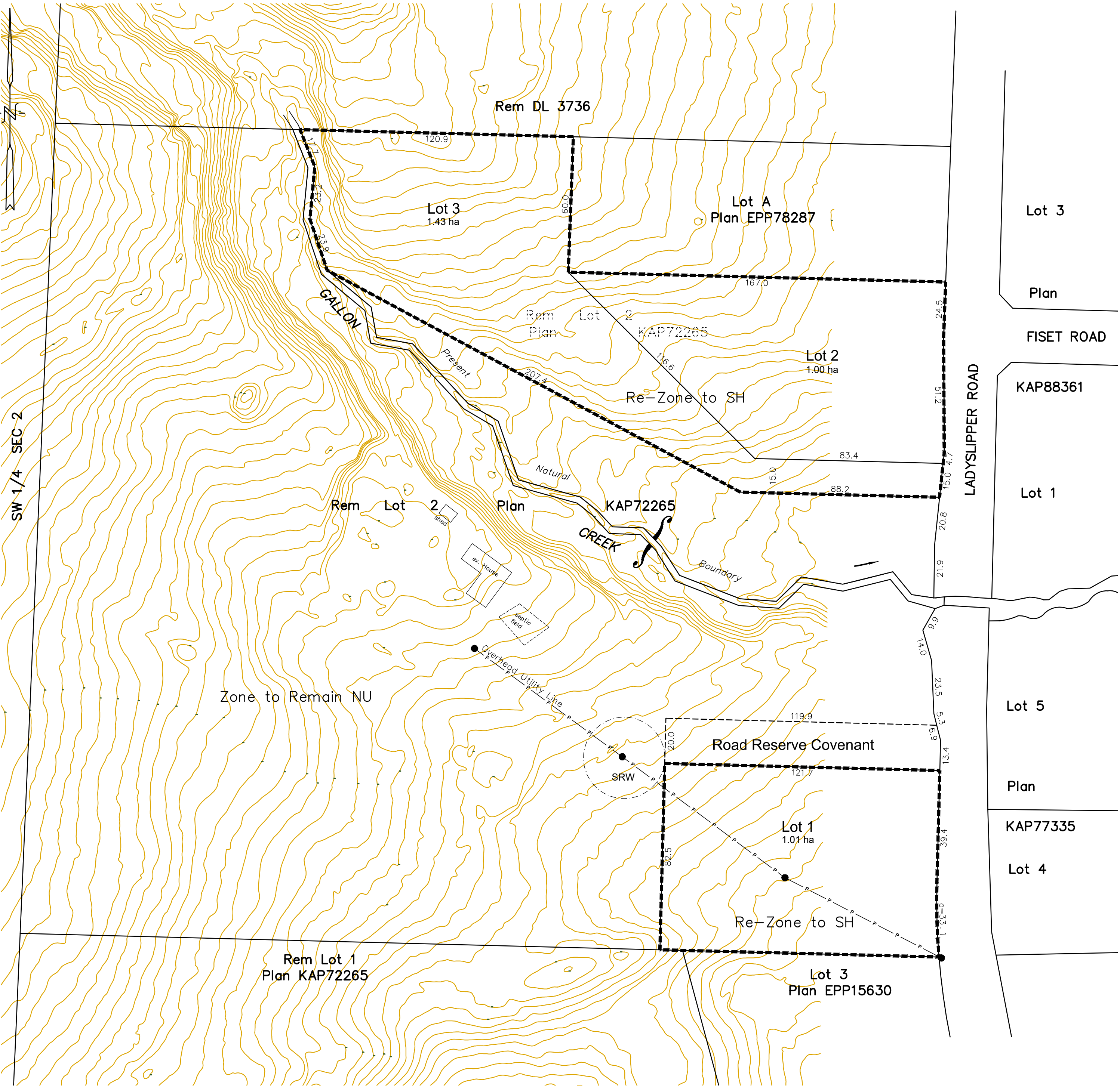
2801-32nd Street, Vernon, B.C. V1T 5L8

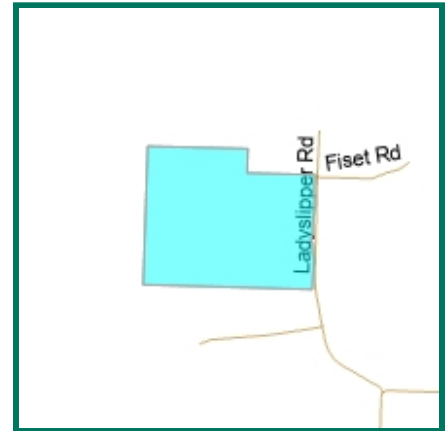
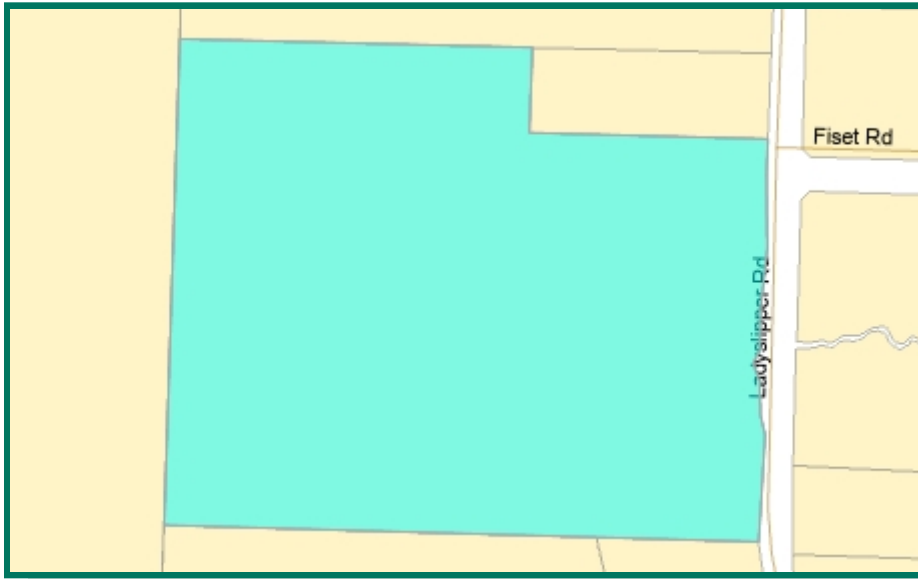
Phone: (250)545-0511

Email: jasons@jrshortt.ca

FILE: 30759

F.B. 1301 Pg. 36





Property highlighted in blue



Legal Information:

Jurisdiction: Vernon Rural

Legal Type: LAND

Site Address: 44 LADYSLIPPER RD

Roll Number: 722.14856.035

Legal Description:

LOT 2, DISTRICT LOT 3736, OSOYOOS DIV OF YALE, PLAN KAP72265, EXCEPT PLAN KAP88361 & EPP78287,

Property ID:

025-580-451

Land Use:

<u>Description</u>	<u>Type</u>	<u>Size (ha)</u>
ZONING DESIGNATION 1 (HA.)	NU	13.3
O.C.P. DESIGNATION 1 (HA.)	NU	13.3

This data is for general information only and is provided on a user beware basis. The Regional District North Okanagan makes no warranty or representation, expressed or implied, with the regard to the correctness, accuracy and/or reliability of the data supplied.

APPENDIX B – FLOOD ASSURANCE STATEMENT

Note: This statement is to be read and completed in conjunction with the current Engineers and Geoscientists BC *Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC* ("the guidelines") and is to be provided for flood assessments for the purposes of the *Land Title Act*, *Community Charter*, or the *Local Government Act*. Defined terms are capitalized; see the Defined Terms section of the guidelines for definitions.

To: The Approving Authority
Regional District of North Okanagan
9848 Aberdeen Road, Coldstream, BC, V1B 2K9
Jurisdiction and address

Date: June 24, 2026

With reference to (CHECK ONE):

- ☐ *Land Title Act* (Section 86) – Subdivision Approval
- ☒ *Local Government Act* (Part 14, Division 7) – Development Permit
- ☐ *Community Charter* (Section 56) – Building Permit
- ☐ *Local Government Act* (Section 524) – Flood Plain Bylaw Variance
- ☐ *Local Government Act* (Section 524) – Flood Plain Bylaw Exemption

For the following property ("the Property"):

Lot 2, DL 3736, Osoyoos Div of Yale, Plan KAP72265, Except Plan KAP88361 & EPP78287

Legal description and civic address of the Property

The undersigned hereby gives assurance that he/she is a Qualified Professional and is a Professional Engineer or Professional Geoscientist who fulfils the education, training, and experience requirements as outlined in the guidelines.

I have signed, sealed, and dated, and thereby certified, the attached Flood Assessment Report on the Property in accordance with the guidelines. That report and this statement must be read in conjunction with each other. In preparing that Flood Assessment Report I have:

[CHECK TO THE LEFT OF APPLICABLE ITEMS]

- ___ 1. Consulted with representatives of the following government organizations:
- X 2. Collected and reviewed appropriate background information
- X 3. Reviewed the Proposed Development on the Property
- X 4. Investigated the presence of Covenants on the Property, and reported any relevant information
- X 5. Conducted field work on and, if required, beyond the Property
- X 6. Reported on the results of the field work on and, if required, beyond the Property
- X 7. Considered any changed conditions on and, if required, beyond the Property
8. For a Flood Hazard analysis I have:
 - X 8.1 Reviewed and characterized, if appropriate, Flood Hazard that may affect the Property
 - X 8.2 Estimated the Flood Hazard on the Property
 - X 8.3 Considered (if appropriate) the effects of climate change and land use change
 - X 8.4 Relied on a previous Flood Hazard Assessment (FHA) by others
 - X 8.5 Identified any potential hazards that are not addressed by the Flood Assessment Report
9. For a Flood Risk analysis I have:
 - ___ 9.1 Estimated the Flood Risk on the Property
 - ___ 9.2 Identified existing and anticipated future Elements at Risk on and, if required, beyond the Property
 - ___ 9.3 Estimated the Consequences to those Elements at Risk

10. In order to mitigate the estimated Flood Hazard for the Property, the following approach is taken:

- ☒ 10.1 A standard-based approach
☐ 10.2 A Risk-based approach
☐ 10.3 The approach outlined in the guidelines, Appendix F: Flood Assessment Considerations for Development Approvals
☒ 10.4 No mitigation is required because the completed flood assessment determined that the site is not subject to a Flood Hazard

11. Where the Approving Authority has adopted a specific level of Flood Hazard or Flood Risk tolerance, I have:

- ☒ 11.1 Made a finding on the level of Flood Hazard or Flood Risk on the Property
☒ 11.2 Compared the level of Flood Hazard or Flood Risk tolerance adopted by the Approving Authority with my findings
☒ 11.3 Made recommendations to reduce the Flood Hazard or Flood Risk on the Property

12. Where the Approving Authority has not adopted a level of Flood Hazard or Flood Risk tolerance, I have:

- ☐ 12.1 Described the method of Flood Hazard analysis or Flood Risk analysis used
☐ 12.2 Referred to an appropriate and identified provincial or national guideline for level of Flood Hazard or Flood Risk
☐ 12.3 Made a finding on the level of Flood Hazard or Flood Risk tolerance on the Property
☐ 12.4 Compared the guidelines with the findings of my flood assessment
☐ 12.5 Made recommendations to reduce the Flood Hazard or Flood Risk

☒ 13. Considered the potential for transfer of Flood Risk and the potential impacts to adjacent properties

☒ 14. Reported on the requirements for implementation of the mitigation recommendations, including the need for subsequent professional certifications and future inspections.

Based on my comparison between:

[CHECK ONE]

- ☒ The findings from the flood assessment and the adopted level of Flood Hazard or Flood Risk tolerance (item 11.2 above)
☐ The findings from the flood assessment and the appropriate and identified provincial or national guideline for level of Flood Hazard or Flood Risk tolerance (item 12.4 above)

I hereby give my assurance that, based on the conditions contained in the attached Flood Assessment Report:

[CHECK ONE]

- ☐ For subdivision approval, as required by the *Land Title Act* (Section 86), "that the land may be used safely for the use intended":

[CHECK ONE]

- ☐ With one or more recommended registered Covenants.
☐ Without any registered Covenant.
☒ For a development permit, as required by the *Local Government Act* (Part 14, Division 7), my Flood Assessment Report will "assist the local government in determining what conditions or requirements it will impose under subsection (2) of this section [Section 491 (4)]".
☐ For a building permit, as required by the *Community Charter* (Section 56), "the land may be used safely for the use intended":

[CHECK ONE]

- ☐ With one or more recommended registered Covenants.
☐ Without any registered Covenant.
☐ For flood plain bylaw variance, as required by the *Flood Hazard Area Land Use Management Guidelines* and the *Amendment Section 3.5 and 3.6* associated with the *Local Government Act* (Section 524), "the development may occur safely".
☐ For flood plain bylaw exemption, as required by the *Local Government Act* (Section 524), "the land may be used safely for the use intended".

I certify that I am a Qualified Professional as defined below.

June 24, 2026

Date

Associated Engineering (B.C.) Ltd.

Prepared by

Geoffrey Cahill, P.Eng.

Name (print)



Signature

820 - 1631 Dickson Ave

Address

Kelowna, BC V1Y 0B5

250-763-3638

Telephone

cahillg@ae.ca

Email

Associated Engineering (B.C.) Ltd.

Reviewed by

Evan Andjelic, P.Eng.

Name (print)

Signature

(Affix PROFESSIONAL SEAL here)

If the Qualified Professional is a member of a firm, complete the following:

I am a member of the firm Associated Engineering (B.C.) Ltd.

and I sign this letter on behalf of the firm.

(Name of firm)

APPENDIX C – GALLON CREEK PHOTOS

Photo 1 Gallon Creek Channel, Looking Upstream



Photo 2

Gallon Creek Channel near Measurement 1, Looking Downstream



Photo 3 Gallon Creek Channel near Measurement 2, Looking Upstream



Photo 4 Gallon Creek Channel, Looking Downstream



Photo 5 **Gallon Creek Channel near Measurement 3, Looking North**



Photo 6 North Section of Gallon Creek near Measurement 4, Looking Downstream



Photo 7 **1600 mm Culvert at Ladyslipper Road**



Photo 8 **Upstream Inlet of the 1600 mm Culvert at Ladyslipper Road**



Photo 9 Upstream Inlet of the 900 mm Culvert



APPENDIX D - AERIAL PHOTOGRAPHS

Figure D-1 1967



Figure D-2 1971



Figure D-3 1976



Figure D-4 1981



Figure D-5 1985



Figure D-6 1987



Figure D-7 1989



30 BCC 957 No. 172

Figure D-8 1990



Figure D-9 1994



Figure D-10 1997





PLANNING DEPARTMENT INFORMATION REPORT

OCP / ZONING AMENDMENT APPLICATION

DATE: February 25, 2025

FILE NO.: 24-0807-D-OR

OWNER/APPLICANT: David & Sheri Hornell c/o Jason Shortt

LEGAL DESCRIPTION: Lot 2, DL 3736, ODYD, Plan KAP72265, Except Plans KAP88361 & EPP78287

P.I.D.#: 025-580-451

CIVIC ADDRESS: 44 Ladyslipper Road

PROPERTY SIZE: 14.4 ha

SERVICING: On-site septic sewage disposal and groundwater wells

PRESENT ZONING: Non-Urban (N.U)

PROPOSED ZONING: Small Holding (S.H) (3.43 ha) and Non-Urban (N.U) (10.96 ha)

PRESENT O.C.P. DESIGNATION: Non-Urban

PROPOSED O.C.P. DESIGNATION: Small Holding (3.43 ha) and Non-Urban (10.96 ha)

PROPOSAL: Three lot plus remainder subdivision

PLANNING DEPARTMENT RECOMMENDATION:

That the application to amend the Electoral Areas "D" and "E" Official Community Plan Bylaw No. 2485, 2011 by changing the land use designation of a 3.43 ha portion of the property legally described as Lot 2, DL 3736, ODYD, Plan KAP72265, Except Plans KAP88361 & EPP78287 and located at 44 Ladyslipper Road, Electoral Area "D" from Non-Urban to Small Holding be supported in principle and staff be directed to prepare an Official Community Plan Amendment Bylaw for First Reading only; and further,

That the application to amend the Regional District of North Okanagan Zoning Bylaw No. 3000, 2023 by changing the zoning of a 3.43 ha portion of the property legally described as the Lot 2, DL 3736, ODYD, Plan KAP72265, Except Plans KAP88361 & EPP78287 and located at 44 Ladyslipper Road, Electoral Area "D" from the Non-Urban (N.U) zone to the Small Holding (S.H) zone be supported in principle and staff be directed to prepare a Zoning Amendment Bylaw for First Reading only; and further,

That the referral process outlined in the Planning Department report dated February 25, 2025 be considered appropriate consultation for the purpose of Sections 475 and 476 of the *Local Government Act*; and further,

That in accordance with Section 477 of the *Local Government Act*, the Official Community Plan Amendment Bylaw be considered in conjunction with the Regional District of North Okanagan's Financial Plan and the Regional Solid Waste Management Plan; and further,

That Second Reading of the proposed Official Community Plan and Zoning Amendment Bylaws be withheld until:

1. the applicant has held a Public Information Meeting in accordance with the Public Information Meeting Guide and submitted a follow-up report in accordance with the Regional District of North Okanagan Public Information Meeting Guide;
2. the applicant has provided a report prepared by a professional engineer who has:
 - a. reviewed the proposed development, the physical characteristics of the subject property, and location relative to Gallon Creek;
 - b. provided recommendations, if any, regarding the protection of the proposed development from hazards associated with flooding and debris flow from Gallon Creek; and
 - c. has confirmed that the proposed new lots would be safe for the use intended;
3. the applicant has submitted a report prepared by a Professional Engineer to evaluate the subject property and provide recommendations for potential on-site septic sewage disposal;
4. the applicant has submitted a report provided by a professional engineer verifying that water of sufficient quantity is available year round to service the permitted uses associated with the proposed lots and that the extraction of water from the water supplies would not have a negative impact on the supply of neighbouring wells.

SUMMARY:

This report relates to an application to amend the Official Community Plan (OCP) land use designation and zoning of a 3.43 ha portion of a 14.4 ha property located at 44 Ladyslipper Road in Electoral Area "D" from Non-Urban to Small Holding. If approved, the applicant is proposing to subdivide the property to create three new lots.

The Planning Department recommends that the proposal be given favourable consideration as it represents a land use that is generally consistent with the Electoral Areas "D" and "E" Official Community Plan Rural Residential Policies. Staff also recommend that Second Reading be withheld until the applicant submits information related to geotechnical concerns related to the Gallon Creek alluvial fan, water supply, and a Public Information Meeting is held.

BACKGROUND:

Covenants

In 2020, the following covenants were registered on the title of the subject property as a condition of subdivision to create one new lot pursuant to Section 514 of the *Local Government Act* (residence for a relative):

- Covenant No. CA8291308 requires that the property be subdivided and developed in accordance with the covenant and an attached geotechnical report related to the Gallon Creek Alluvial Fan. The geotechnical report relates only to the proposed building site for the proposed new lot.

- Covenant No. CA8291314 restricts development within 30 m of Gallon Creek in accordance with the Provincial Riparian Areas Regulations.
- Covenant No. CA8291316 prohibits the property from being further subdivided pursuant to Section 514 of the *Local Government Act* (residence for a relative).

Site Context and Proposal

The subject property is located on the west side of Ladyslipper Road. The property contains a single family dwelling and accessory buildings in the middle of the property. A driveway connects the dwellings to Ladyslipper Road. The dwelling is serviced with a well and onsite septic. The property slopes down towards the southeast side of the property. Gallon Creek runs through the north half of the property in a northwest to southeast direction.

The applicant had originally proposed to amend the OCP land use designation and zoning the entire 14.4 ha property from Non-Urban to Small Holding. Following additional conversations with staff, the applicant has amended the application to amend the OCP land use designation and zoning of a 3.44 ha portion of the property to Small Holding. The following provides a description of each of the proposed lots:

- Proposed Lot 1 would be 1.01 ha in size and would be located in the southeast corner of the property adjacent to Ladyslipper Road. The proposed lot would contain the existing overhead utility line but would otherwise be vacant.
- Proposed Lot 2 would be 1.0 ha in size and would be located in the northwest corner of the property adjacent to Ladyslipper Road. The proposed lot would be vacant.
- Proposed Lot 3 would be 1.43 ha in size and would be located in the southeast corner of the property adjacent to Ladyslipper Road. The proposed lot would contain the existing overhead utility line but would otherwise be vacant.
- The remainder of the property would continue to be zoned Non-Urban. The Remainder Lot would contain the existing driveway, buildings and services. The Remainder Lot would be 10.96 ha in size.

The applicant proposes that water would be provided by individual drilled wells on each proposed lot. No additional information regarding the potential to use groundwater to service the proposed development has been provided at this time. The applicant is also proposing individual on-site sewage disposal systems for each lot. The applicant has provided information which indicates the proposed lots would have the potential to meet the Zoning Bylaw driveway grade and building site requirements.

The subject property is designated Non-Urban in the Electoral Areas “D” and “E” Official Community Plan and is zoned Non-Urban (N.U). The property is not in the ALR. The attached maps show the OCP land use designation and zoning of the subject and surrounding properties. The attached orthophoto of the subject and surrounding properties was taken in 2022.

One of the accessory buildings on the property was constructed without a Building Permit between 2016 and 2022. The Building Bylaw requires that a Building Permit be issued for the building as it exceeds 185 m² in size and may not be exempt under Section 105.2.d of RDNO Building Bylaw No. 2670, 2015. The Planning Department has advised the Building Department of this matter. In this regard, the owner has submitted a Building Permit application.

Current OCP/Zoning Amendment Applications

As directed by the Board of Directors, applications for OCP amendments are to be considered in batches so that the cumulative effect they will have on the area can be better analyzed. The subject application is the only application received during the second half of 2024.

One application was received for Electoral Area “B” in the first half of 2024. The applicant proposes to amend the OCP land use designation of a property from Mixed Commercial / Light Industrial to Comprehensive Development and to change the zoning of the property from Recreation Commercial (C.5) to a new Comprehensive Development Zone to use the existing hotel on the property for residential use purposes in addition to temporary accommodation use purposes.

Previous OCP/Zoning Amendment Applications

The subject application is the first OCP amendment application received for a property in Electoral Area “D” since 2022. An overview of OCP amendment applications received in Electoral Areas “D” and “E” over the past 10 years is provided below.

In September 2022, an application proposed to change the OCP land use designation of a portion of the property located at 5280 Highway 6 from Agricultural to Industrial and to rezone the same portion of the property from Non-Urban (N.U) to General Industrial (I.2). The applicant proposed to construct a service and repair facility on the property to be used for the applicant as part of their gravel operation. The associated Bylaws were adopted on September 18, 2024.

In October 2020, an application was received to change the OCP designation and zoning of a property on Specht Road in Electoral Area “E” from Non-Urban to Country Residential to permit a one lot subdivision. The Bylaws associated with this application were adopted by the Board of Directors on June 15, 2022. The subdivision was completed in October 2024.

In April 2020, an OCP/zoning amendment application was received for a 2.5 ha property on Albers Road in Electoral Area “D”, for which the applicant proposed to change the OCP and zoning designations from Non-Urban to Small Holding to facilitate a proposed subdivision, which would create one additional lot. The Bylaws associated with this application were adopted by the Board of Directors on January 20, 2021. The subdivision was completed in May 2024.

In January 2020, the Regional District received an OCP/zoning amendment application for a 0.5 ha property on Highway 6 in Electoral Area “E” for which the applicant proposed to change the OCP and Zoning designations from Non-Urban (N.U) to Light Industrial (I.1) to facilitate the continued use of the property for light industrial purposes. The Bylaws associated with this application were given Third Reading by the Board of Directors on January 20, 2021. The file was closed in 2023 due to inactivity.

In September 2019, the Regional District received an application to change the OCP land use designation and zoning of portions of two properties located at Highway 6 and Dure Meadow Road in Electoral Area “D” from Commercial to Agricultural and to rezone the same areas from Recreation Commercial (C.5) to Non-Urban (N.U) to facilitate a boundary adjustment subdivision involving the Coldstream Golf Course. The Bylaws were adopted in March 2020 and a boundary adjustment subdivision application is in progress.

In June 2019, the Regional District received an application which proposed to change the OCP land use designation and zoning of a property located on Emmett Road in Electoral Area “D” from Non-Urban to Country Residential. The Bylaws associated with this application were adopted by the Board of Directors on October 21, 2020 and a subdivision application which proposes to create five lots is in progress.

PLANNING ANALYSIS:

The Planning Department recommends that the proposal be given favourable consideration as it represents a land use that is generally consistent with the Rural Residential Policies of the Electoral Areas “D” and “E” Official Community Plan in that the proposed lots would:

- a. be outside the Agricultural Land Reserve and not in an area with excessive slopes;
- b. not be in an area that has high capacity for uses such as gravel extraction, mining, or forestry;
- c. have the potential to accommodate suitable building sites and private driveways;
- d. not detrimentally affect neighbouring properties and the community as a whole;
- e. not destroy or alienate important habitat for fish and wildlife;
- f. have access to existing electrical power, roads and school bussing;
- g. be located in close proximity to areas with similar residential densities and services; and
- h. not detract from the rural character of the built and natural environment.

Additional information is required to determine if the proposal complies with the following Bylaws and Rural Residential Policies.

Public Information Meeting

The Regional District Development Application Procedures and Administrative Fees Bylaw No. 2677 states that when an application has been approved in principle by the Board of Directors, the applicant must hold a Public Information Meeting in accordance with the applicable Board policy. In this regard, staff recommend that a Public Information Meeting be held prior to Second Reading of the proposed OCP and Zoning Amendment Bylaws.

Geotechnical Conditions

Staff recommend that, as a condition of Second Reading of the associated Bylaws that the applicant provide a report prepared by a professional engineer who has:

1. reviewed the proposed development; the physical characteristics of the subject property; and location relative to Gallon Creek; and
2. provided recommendations, if any, regarding the protection of the proposed development from hazards associated with potential flooding and debris flow from Gallon Creek.

The report must also confirm that the proposed new lots would be safe for the use intended. Provision of this report would address the OCP policy for rural residential lands which states that the land should not be subject to flooding or a high water table.

Staff note while there is an existing covenant on title related Gallon Creek, the associated geotechnical report relates only to the building site for the new lot which was created in 2020 and does not provide an analysis of the lots proposed in this application.

Water Supply

To address the water supply policies related to the Rural Residential policies of the OCP, it is recommended that the applicant demonstrate that the maximum build-out potential (three new lots) of the subject property, resulting from the proposed rezoning to Small Holding (S.H), could be serviced with domestic water supplies meeting standards of the Subdivision Servicing Bylaw.

On-Site Sewage Disposal

Staff recommend that a study be prepared by a Professional Engineer to evaluate the subject property and provide recommendations for potential on-site septic sewage disposal for the proposed subdivision as the OCP states that the proposed lots should contain sewage disposal areas. Staff note the Subdivision Servicing Bylaw requires written confirmation from the authority having jurisdiction that their requirements related to onsite sewage disposal have been satisfied for lots which are less than 2 ha in size. As the proposed lots are 1 ha in size, this requirement will need to be met at the time of subdivision.

REGIONAL GROWTH STRATEGY:

The Regional Growth Strategy designates the subject property as being within a Rural Protection Area. The following definition has been provided for Rural Protection Areas:

“RURAL PROTECTION AREAS: are areas that will not have access to water and sewer infrastructure, consist of large lot sizes and are associated with rural uses. Rural Protection Areas are intended to provide for a variety of rural land uses, including low density rural residential development, natural resources, and agricultural and existing small scale neighbourhood commercial uses. Rural Protection Areas help protect rural landscapes and agricultural lands, prevent unsuitable urban development and densities, limit water and sewer infrastructure extensions beyond the Rural Protection Boundary and maintain rural lifestyle options. Natural lands, open spaces, agricultural lands and environmentally sensitive lands that are unsuitable for residential development are included within the Rural Protection Areas, including: the Agricultural Land Reserve, watersheds, conservation areas, natural habitats, grasslands, forests, wetlands, major parks and recreation areas. Rural developments around drinking water sources and reservoirs should be restricted to protect water quality and quantity.”

The Regional Growth Strategy (RGS) outlines the regional policies that are to be considered by the Board of Directors when reviewing an OCP/Rezoning Amendment application. The following RGS policies apply with respect to this application:

Urban Containment and Rural Protection

- UC-2.1: Designate Rural Protection Boundaries, consistent with the Regional Growth Strategy, within Official Community Plans for the purpose of protecting lands within the Rural Protection Area. Lands designated as Rural Protection Areas are intended to accommodate low density development on larger (1 hectare and greater) parcels of land that are not serviced with both community water and sewer systems.
- UC-2.5: Designate lands as Rural Protection Areas: This designation will protect, and at the same time enhance, the rural landscape by encouraging development that is compatible with the rural character of the North Okanagan.

UC-2.8: Protect the character of rural areas: Rural Protection Areas contain a variety of lands with natural resource value including agriculture and forestry. These lands have historically played a significant role in shaping North Okanagan character and identity, offering rural lifestyle choice, as well as providing important economic benefits. Their long term viability and productivity is increasingly threatened by urban encroachment and the spread of incompatible land uses.

Water Stewardship

WS-1.1: Develop policies that will evaluate proposed developments based upon local hydrological conditions, access to long term water supply, an adherence to the precautionary principle and impact on supply to existing users.

OFFICIAL COMMUNITY PLAN:

The Official Community Plan designates the land use of the subject property as Non-Urban. The following OCP Policies are applicable to the application:

Rural Residential Policies

- Rural Residential lands are intended to provide an alternate to urban living with lots 1.0 ha or larger. These lots emphasize an attachment to the lands and utilization for rural and agricultural uses, but with lesser services and greater distances to community facilities and shopping. Lands that may be suitable for rezoning to accommodate Rural Residential land use (subject to policies of this section) are shown as Country Residential (CR) and Small Holdings (SH). The minimum parcel size for CR is 2 ha and for SH is 1 ha.
- Rural residential lands should conform to the following requirements:
 - o outside the Agricultural Land Reserve;
 - o not in an area with excessive slopes;
 - o not in an area that has high capacity for uses such as gravel extraction, mining, or forestry;
 - o not subject to flooding or in an area with a high water table; and
 - o not subject to excessive expenditures for services such as roads, electric power and school bussing;
 - o contains suitable building sites;
 - o contains sewage disposal areas;
 - o contains adequate water supplies as specified in the Subdivision Servicing Bylaw;
 - o does not destroy or alienate important habitat for fish and wildlife; and,
 - o does not detrimentally affect neighbouring properties and the community as a whole.
- Applications to amend the Zoning Bylaw for the Small Holdings (SH) Zone should conform to the following requirements:
 - o be located in close proximity to local areas with similar residential densities and services;
 - o the form and character of development should not detract from the rural character of the built and natural environment.
- Upon receipt of a rezoning application for Rural Residential developments, the Regional Board will give consideration to the fire protection issues in the local area.
- Rural Residential land development that proposes to create more than 2 new lots shall not be considered for rezoning until a comprehensive plan consistent with the rural residential policies is provided, and until the roads and services adequate for the development are either in place or financial guarantees regarding their installation are provided.

- Due to the importance of an adequate water supply in Rural Residential areas, and the uncertainty about water supply in some areas, assurances about the water supply as specified in the Subdivision Servicing Bylaw shall be provided prior to the zoning of land for Rural Residential use.

Rural Land Use Policies

- Low density Rural lands are those used for, or having a potential for resource extraction and that are not suitable for intensive development because of limitations. These limitations include but are not limited to, elevation, slope, water, accessibility, distance to community services, disruption of existing resource or agricultural uses, or interference with watershed conservation and are designated in the locations shown as Large Holdings and Non-Urban.

Water Policies

- Development of land (where more than 1 additional lot is created) that is dependent upon subsurface groundwater supplies in areas that are known to have supply issues should be subject to certification by a professional engineer, or a groundwater geologist, or by a hydrogeologist as to the quality and quantity of water available prior to rezoning or subdivision approval as the case may be. The Regional Board may request information that demonstrates the impact to neighboring wells of such a development. Proven wells with registered well logs may be exempt from the above certification.

Sewage Collection and Disposal Policies

- A study of subsurface soil conditions shall be undertaken to determine the best method of sewage treatment and disposal for new development (where more than 1 additional lot is created). The study shall be carried out prior to rezoning or subdivision approval.

Hazardous Conditions Policies

- A rezoning application may require an overall assessment of the site for development suitability (from conditions both on and off the site) prepared by a professional engineer and geoscientist licensed in BC specializing in geotechnical issues. Further detailed information may be required as a result of the assessment.

Wildfire Policies

- It is recognized that all areas within the OCP plan area are generally susceptible to wildfire risks and development should be consistent with provincial Best Practices for reducing risk of loss from wildfires.
- Prior to undertaking any subdivision or land use development that will create four or more parcels or dwelling units within a high wildfire hazard area, the landowner will provide the Regional District with a Wildfire Hazard Assessment Report for the proposed development, prepared by a Registered Professional Forester registered in BC or an equivalent quality professional. The Wildfire Hazard Assessment Report shall: assess the current wildfire hazard, assess conditions on the site and neighbouring lands, evaluate the proposed development for wildfire susceptibility, and provide Fire Smart wildfire hazard mitigation recommendations to reduce the hazard of wildfire for the land and buildings to moderate or lower. The recommendations of the Report shall be implemented during development and

written into a restrictive covenant to be registered on a property title advising the property owner of the ongoing responsibility to manage their land and buildings in accordance with the recommendations of the Wildfire Hazard Assessment Report.

Development Permit Areas

All Riparian Assessment Areas within Electoral Areas “D” and “E” are designated as Riparian Development Permit (DP) Areas. Unless an exemption applies, development on land within a Riparian DP Area will require a DP prior to issuance of a Building Permit, subdivision, or land alteration.

Lands subject to hazardous conditions and designated as the Hazardous Lands Development Permit Area include: the alluvial fans of four area creeks (Sowsap, Ireland, Bigg and Gallon Creeks and the NE ¼ of Section 33 Township 43, near the south end of Mabel Lake) and all Provincially designated floodplains that exist along the Shuswap River, its lake system, Bessette Creek and Duteau Creek as shown on Schedule D.

ZONING BYLAW:

The subject property is zoned Non-Urban (N.U). The minimum parcel size in the N.U zone is 7.2 ha. The uses permitted in the N.U zone include agricultural uses, assembly, civic and public service uses, intensive resource use, manufactured homes, single family dwellings, two family dwellings, bed and breakfast uses, boarding house uses, home occupation uses, secondary dwellings and secondary suites.

The applicant proposes to rezone the subject property to the Small Holding (S.H) zone. The minimum parcel size for a lot created by subdivision in the S.H zone is 1 ha. The uses permitted in the S.H zone include agricultural uses, assembly, civic and public service uses, manufactured homes, single family dwellings, two family dwellings, bed and breakfast uses, boarding house uses, home occupation uses, secondary dwellings and secondary suites.

Under the S.H zone, lots larger than 1.0 ha would be permitted to have: one single family dwelling and either one secondary dwelling or one secondary suite; OR one manufactured home and one secondary dwelling; or one two family dwelling.

Lots created by subdivision within either the S.H or the N.U zone must have a lot frontage of not less than 20 m.

Building Sites and Lot Frontage

Section 5.6 of the Zoning Bylaw requires that all lots created within the S.H zone contain a contiguous area of land 2,000 m² or larger in size to serve as a suitable building site. A building site must be less than 30% natural slope and must be accessible from a public highway via a private access driveway meeting the width and slope standards of Section 5.6. Lots are also required to have road frontage of not less 20 m.

PARK DEVELOPMENT COST CHARGES and PARK LAND DEDICATION:

Under White Valley Parks and Recreation District Development Cost Charge Bylaw No. 1390, 1996, payment of Development Cost Charges for providing and improving park land would be required at the time of subdivision in the amount of \$500 per new lot created.

Section 510 of the *Local Government Act* states that an owner of land being subdivided must provide, without compensation, park land in an amount and a location acceptable to the local government or pay to the local government an amount that equals the market value of the land that may be required for park land purposes. The amount of land that may be required or used for establishing the amount that may be paid must not exceed 5% of the land being proposed for subdivision. The proposed three lot subdivision would be required to adhere to this requirement. 5% of the lands being subdivided would amount to 0.72 ha of land.

The White Valley Parks Department has indicated that they will opt to take cash in lieu as this instance.

REFERRAL COMMENTS:

Section 475 of the *Local Government Act* states that during the amendment of an OCP, the proposing local government must provide one or more opportunities it considers appropriate for consultation with persons, organizations and authorities it considers will be affected, and must consider whether the opportunities for consultation should be early and ongoing. Section 476 states that the local government must consult with the local school district. Section 477 of the *LGA* requires that, after First Reading, a local government consider an OCP amendment in conjunction with its Financial Plan and any applicable Solid Waste Management Plan.

In the event an Official Community Plan Amendment Bylaw associated with this application is given First Reading, to address the requirements of sections 475 and 476, the subject application has been referred to the following for their review and comment:

1. **RDNO Community Services**
2. **RDNO Protective Services**
3. **RDNO Rural Services**
4. **RDNO Environmental Services**
5. **RDNO Chief Financial Officer**
6. **RDNO Building Inspection Department**
7. **Lumby and District Fire Department**
8. **Ministry of Forests, Lands, Natural Resource Operations, and Rural Development**
9. **Ministry of Environment**
10. **Ministry of Transportation and Infrastructure**
11. **School District Nos. 22**
12. **RDNO Parks Department**

WVPRC doesn't have any interests in the area, so we will opt to take cash in lieu on this one.

13. Interior Health Authority

This referral has been reviewed from Healthy Community Development and Environmental Public Health perspectives. We have no objection to this proposal.

At the subdivision phase, Interior Health will likely have further involvement. The applicant should be aware they will need to submit information to Interior Health that meets the Subdivision Report Criteria for Authorized Persons.

14. Okanagan Indian Band

Okanagan Indian Band (OKIB) is in receipt of the above referral. This proposed activity is within OKIB's Area of Interest within the Syilx (Okanagan Nation) Territory, and the lands and resources are subject to our unextinguished Aboriginal Title and Rights. For more information on our Title and Rights, please see the attached overview in Schedule A.

The Crown has an obligation to support our capacity to meaningfully participate in consultation(1). The failure to provide capacity funding where necessary to support an Aboriginal people's participation can significantly impair the quality of consultation and lead to a finding that consultation was inadequate(2). While supporting OKIB's capacity is ultimately the Crown's obligation, it may be delegated to proponents. Whether delegated or not, proponent contributions ensure we have sufficient capacity to participate in consultation on their activity so approvals are not delayed or denied due to a failure of the Crown to engage with us meaningfully.

To ensure OKIB has sufficient capacity to conduct a Preliminary Office Review of your referral for its potential adverse impact on the OKIB's Syilx Aboriginal Title and Rights we require payment of a Referral Processing Fee. This invoice must be paid within 30 days.

The processing fee is broken down as follows: Referral Processing Fee: \$300.00; 5% GST: \$15.00; Total: \$315.00. This Fee is based on review not exceeding 5 hours. This initial fee may not be sufficient for OKIB to engage in meaningful consultation, but it will provide necessary funding for OKIB's Preliminary Office Review to determine if your referral is of potential concern and whether further consultation is necessary. If the proposed activity requires a more in-depth review, OKIB will notify the proponent after the Preliminary Office Review and will seek to negotiate an agreement to provide capacity for necessary consultation activities.

If payment is not received within 30 days of receipt of this invoice a warning letter will be issued outlining that we are unable to meaningfully respond, engage in consultation on the proposed activity or consent to the proposed activity. Proper consultation cannot occur without the appropriate resources, therefore it is only with payment that proper consultation can begin and the proposed project can be reviewed. Failure of the Crown, or the proponent as delegate of the Crown, to meaningfully consult with OKIB will put any permits or authorizations for the activity at risk of being delayed, suspended or revoked.

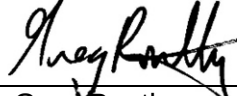
15. Splotsin

There are environmentally sensitive areas within the area being proposed for rezoning (and anticipated development). It is important to ensure that the riparian areas are protected from development in order to maintain healthy function, and we would request that these areas are not considered for rezoning and further protected by covenants or some other measure that would exclude them from future development.

Submitted by:


Jennifer Miles, RPP, MCIP
Planner II

Reviewed by:

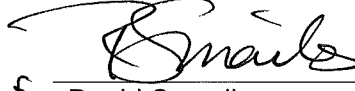

Greg Routley
Deputy Planning Manager

Endorsed by:



Rob Smailes, RPP, MCIP
General Manager, Planning and Building

Approved for Inclusion:



for David Sewell
Chief Administrative Officer