

To: Electoral Area Services Committee
From: Amy Hsieh, Planning Technician

Date: 2022-10-13
File No: 3360-21 2021-01

Subject: 1st reading of Zoning Amendment Bylaw No. 1648, 2022 for four privately owned properties adjacent to Coquihalla River Provincial Park, Area B

RECOMMENDATION

THAT the Fraser Valley Regional District Board give first reading to the bylaw cited as *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022* to rezone four privately owned properties from Park 2 (P-2) to Rural 5 (R-5) to correct an historical zoning error;

THAT the *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022* be forwarded to Public Hearing;

THAT the Fraser Valley Regional District Board delegate the holding of the Public Hearing with respect to the proposed *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022* to the Area Director for Electoral Area B or their alternate in their absence;

THAT the Area Director for Electoral Area B or their alternate in their absence, presides over and Chair the Public Hearing with respect to proposed *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022*;

THAT the Chair of the Public Hearing be authorized to establish procedural rules for the conduct of the Public Hearing with respect to proposed *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022* in accordance with the *Local Government Act*;

AND THAT in the absence of the Area Director for Electoral Area B, or their alternate in their absence at the time of the Public Hearing with respect to proposed *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022*, the Fraser Valley Regional District Board Chair has delegated the authority to designate who shall preside over and Chair the Public Hearing regarding this matter;

AND FURTHER THAT the Fraser Valley Regional District Board waive the requirement to post a sign for *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022*;

AND FINALLY THAT the Fraser Valley Regional District Board authorize its signatories to execute all documents relating to *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022*.

BACKGROUND

In September 2020, staff received a rezoning request from a property owner to consider initiating a zoning amendment process for five privately owned properties adjacent to Coquihalla River Provincial Park which had been inappropriately zoned to a Park zone when *Zoning Bylaw (No. 801) for Electoral Area B, 1989 of the Regional District of Fraser Cheam* (hereafter referred to as Zoning Bylaw No. 801) was adopted. Zoning Bylaw No. 801 is anticipated to be repealed and replaced with *Fraser Valley Regional District Zoning Bylaw No. 1638, 2021* (hereafter referred to as Zoning Bylaw No. 1638) in October 2022.

A previous attempt to correct the zoning error in 1996 failed due to inactivity from the affected owners. The matter of a new rezoning attempt was brought forward at the February, 2021 EASC and Board meetings where staff recommended that another effort be made to correct the historical zoning error. As a result, the Board directed staff to initiate a rezoning process at no cost to the property owners.

Since then, the FVRD commissioned an overview geotechnical hazard assessment for the five properties and had an early consultation meeting in April 2022 with the affected property owners. Following the outcome of the meeting and the recommendations of the geohazard report, staff and owners have agreed to proceed with rezoning four out of the five properties from Park 2 to Rural 5.

PROPERTY DETAILS

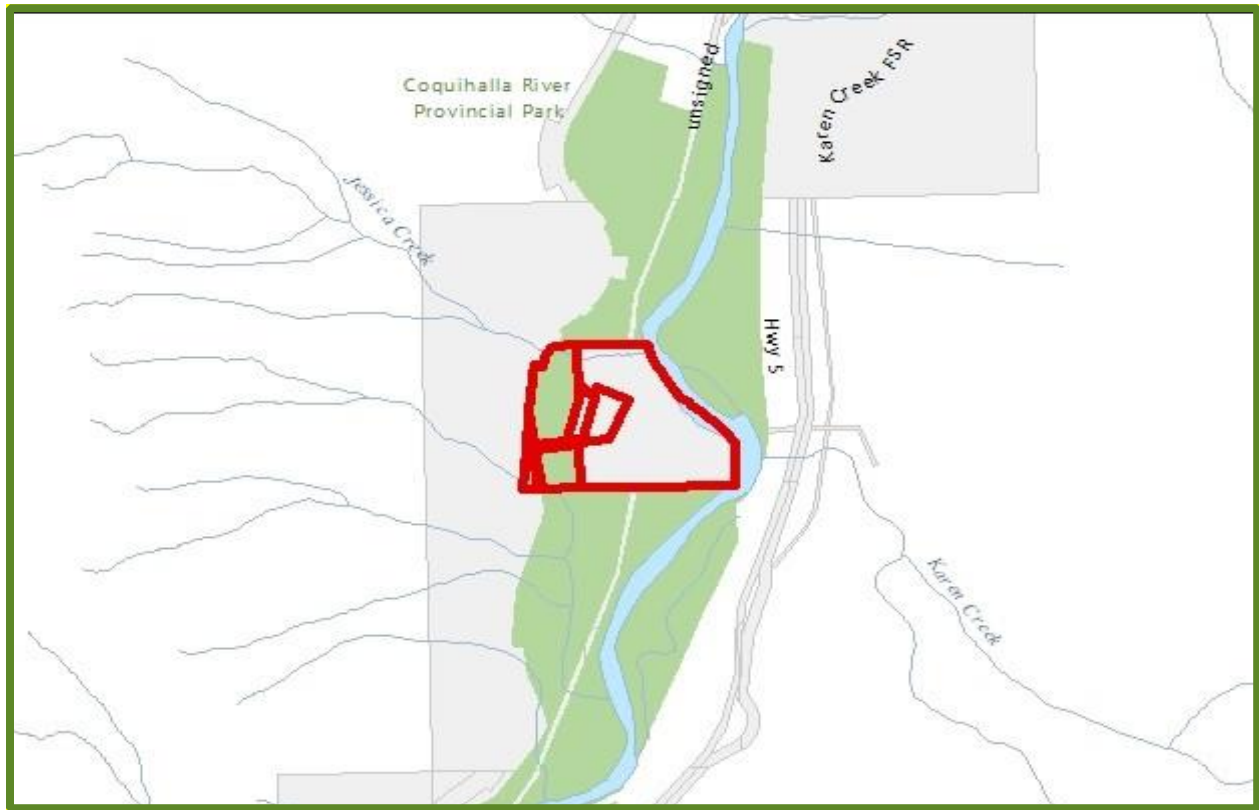
Electoral Area	B		
Address	n/a		
Current Zoning	Park (P-1)	Proposed Zoning	Rural Resource (R-4)
Current OCP	n/a – no OCP	Proposed OCP	n/a
Current Use	Single Family Residence	Proposed Use	No change
Development Permit Areas	n/a		
Agricultural Land Reserve	No		

PID	Folio	Lot Size Acres (ha)	Owner last name
014-560-879	732.05077.002	22.241 (9 ha)	Unwin/Ouellette
014-560-810	732.05078.002	12.5 (5.05 ha)	Unwin/Ouellette
007-850-425	732.05078.050	1.16 (0.47 ha)	Mason
014-560-453	732.05079.000	2.59 (1.05 ha)	Barden

ADJACENT ZONING & LAND USES

North	^	Park (P-1); Park
East	>	Park (P-1); Park, Coquihalla River, Hwy 5
West	<	Rural Resource (R-4); Single-family residence, crown land
South	v	Park (P-1); Park

NEIGHBOURHOOD MAP



PROPERTY MAP



DISCUSSION

The subject properties are located off the Carolin Mine Road exit of Highway 5. It is bounded by Coquihalla River Provincial Park to the north and south, the Coquihalla River to the east, and the former Kettle Valley Railway right-of-way to the west. It is currently only accessible via the Trans Mountain Pipeline right-of-way that runs through the largest of the four properties. These parcels were zoned to Park (P-1) in 1989 with the adoption of Zoning Bylaw No. 801. At the time, the FVRD believed the parcels to be within the lands designated by the Province as Coquihalla River Recreational Area (circa 1934), later Coquihalla River Provincial Park (1986). The FVRD was unaware that privately-owned parcels were included in the Park zone. Zoning Bylaw No. 801 is anticipated to be replaced by Zoning Bylaw No. 1638 as of October 27, 2022. The current zoning bylaw does not significantly alter the regulations applicable to any particular parcel of land or type of zone from the repealed zoning bylaws.

	Existing Zoning	Proposed Zoning
Zoning Bylaw No. 801 (repealed)	Park (P-1)	Rural Resource (R-4)
Zoning Bylaw No. 1638 (current)	Park 2 (P-2)	Rural 5 (R-5)

Current Zoning Amendment

Staff received a new request from one of the affected property owners to revisit potential rezoning in September 2020. This matter was brought to EASC in December 2020, where it was referred back to staff to discuss preliminary concerns with the Director for Electoral Area B. The potential rezoning was brought to EASC and Board again in February 2021, where the Board directed staff to initiate a rezoning process.

The current zoning, Park 2 (P-2), does not allow for a principal residence to be constructed on the lands. Staff are aware that there are existing cabins on the four properties. These cabins have non-conforming rights if they were constructed before zoning regulations were first adopted in 1989. However, there would be no right to replacement if they are damaged to an extent greater than 75%. New residential development would also not be permitted under the current zone.

Staff propose to rezone the subject properties to Rural 5 (R-5), which permits residential uses. Staff consider Rural (R-5) to be the most appropriate zoning for the properties as:

- Privately owned parcels should not be included in the Park 2 (P-2) zone, which is meant to accommodate public use.
- All areas in the vicinity have Rural 5 (R-5) zoning except for Coquihalla River Provincial Park.
- Rural 5 (R-5) zone secures existing property rights without creating additional subdivision potential. The minimum lot size in Rural 5 (R-5) is 8 ha.

Previous Rezoning Attempts

In 1996, one of the affected property owners brought the zoning error to the attention of the FVRD. In response, the FVRD initiated a zoning amendment process for five properties (subject properties plus

PID 014-561-026) from Park (P-1) to Rural Resource (R-4) under Zoning Bylaw No. 801 at no charge to the property owners. A condition of the rezoning was that the owners must register a covenant on the title prohibiting gravel extraction and quarry use. The draft zoning amendment bylaw was given third reading but never completed as the owners were not willing to sign this covenant. The rezoning was revisited in 2009 arising from an inquiry but no process was initiated.

Road Access/Building Permit Requirement

None of the subject properties currently have access to a public road. According to the FVRD Building Bylaw, the property owners are not required to but may obtain a building permit from the Regional District where the property is not accessible from a public road. It will be up to the individual owners to decide if they wish to obtain a building permit in the future. However, BC Building Code requirements, a provincial regulation, still apply. It will be the responsibility of individual owners to ensure that their structures meet Building Code requirements.

Resource Extraction Use

One of the permitted uses in the Rural (R-5) zone that is not permitted in the Park (P-2) zone is **resource extraction. Resource extraction is defined as “the removal of naturally-occurring materials such as timber or groundwater, from land and such preparation of materials as is required for practical shipment” in the Zoning Bylaw. A condition of the previous rezoning process in 1996 was that the** owners must register a restrictive covenant on title prohibiting any rock quarry and/or gravel pit uses. Gravel pits and quarry uses are classified as mining activities and require a provincial permit per Section 10 of the *Mines Act*. Aggregate removal, including gravel, is also further regulated by *FVRD Electoral Areas Commercial Gravel Operations Bylaw No. 1181, 2014*. As provincial approval must be in place before any work can occur and FVRD Zoning Bylaw does not apply to mining activities, staff believe that a covenant restricting these uses is no longer necessary.

Geotechnical Concerns

During the previous rezoning process in 1996, staff noted the occurrence of a past landslide though a geotechnical study was not conducted at the time. As part of the current rezoning process, the FVRD commissioned an overview geohazard assessment, dated September 10, 2021, prepared by Statlu Environmental Consulting Ltd (Statlu).

The Statlu report found that all properties assessed have moderate to high geotechnical hazards and would require future site-specific hazard assessments before development. The hazards identified include flooding, mountain stream erosion and avulsion, debris flow, debris flood, rockfall, and small landslides. According to Statlu, the smallest, eastern property, PID 014-561-026, appears to be entirely within the active floodplain of Coquihalla River and is probably unsafe for development.

Staff recommend registering the Statlu report and its recommendations as a geotechnical covenant as a condition of rezoning. Staff will support rezoning to Rural 5 (R-5) only if a covenant requiring site-specific geotechnical study prior to residential development is registered on the title for each parcel. This ensures that future construction will consider hazard mitigation measures.

Early consultation meeting

The previous rezoning process failed to complete as property owners were unwilling to enter into restrictive covenants. Covenant requirements will once again be recommended as part of the current rezoning process. To limit the potential of a situation where the bylaw does not get adopted due to unwillingness to register covenants, FVRD staff engaged the property owners in an early consultation meeting on April 20, 2022. The meeting went over preliminary staff recommendations and the recommendations of the Statlu geohazard assessment. At the meeting, property owners were made aware that staff will only support rezoning to Rural 5 (R-5) with the understanding that two covenants will likely be required. If the property owners reject the current rezoning process once it has started, staff would not support the FVRD initiating another process, and any potential future rezoning would be undertaken by individual property owners at their expense.

Comments from property owners

After the meeting, property owners were given time to send any written comments to staff and include an indication of whether or not they would like to proceed with rezoning. The property owner representing PID 014-561-026 directed staff to exclude this parcel from rezoning due to its size and it being entirely within the floodplain. Owners representing the remaining four properties indicated in writing that they would like to proceed with rezoning. This awareness upfront of covenant requirements will hopefully help the zoning amendment process to reach a satisfactory conclusion for all parties.

The owner representing PIDs 014-560-879 and 014-560-810, while in support of moving forward, have **indicated that they object to having to pay for the covenants on their properties. The owner's** rationale is that the cost would not need to be incurred if the FVRD had zoned the properties appropriately when the first Zoning Bylaw was adopted in 1989. While it is not standard practice for FVRD to bear legal expenses for zoning amendments, the Board could direct staff to cover the covenant registration costs.

The property owners of PID 007-850-425 indicated that they support the rezoning process with the understanding that obtaining a building permit for future construction will not be a requirement.

Sign requirement waiver

The FVRD Development Procedures Bylaw requires a sign to be posted when there is an application to amend a bylaw. Per Section 4.8.2 of the Bylaw, **"the Board may by resolution waive the requirement to post a sign where the Board determines that placing a sign would be ineffective due to the remoteness of the location or other factors."** The subject properties are located in a remote area surrounded almost entirely by Coquihalla River Provincial Park. The closest private properties within a 150-metre radius are four properties located approximately 40 metres to the east. None of these private properties are listed as primary residences.

Neighbourhood Notification and Input

The *Local Government Act* requires a public hearing to be held before a zoning bylaw can be adopted. If the bylaw receives first reading, all property owners within 150 metres of the property will be notified by the FVRD of the zoning amendment application, and the date and time of the public hearing as required by section 4.7 of the FVRD Development Procedures Bylaw. A notice will also be published in the newspaper as required by section 466 of the *Local Government Act*. Members of the public will be given the opportunity to provide written comments or attend the public hearing to state their comments.

Official Community Plan (OCP)

There is no official community plan in effect for the area subject to the zoning bylaw.

COST

As the rezoning is initiated by the FVRD, the direct cost of public hearings, advertisements, and technical assessments will come from the Electoral Area Planning budget. These direct expenditures – excluding staff and administration – are estimated to be \$4,000.

Staff recommend that the cost of covenant registration be borne by the property owners. The approximate cost for the covenant registration would be approximately \$3,000. The 2022 EA Planning Budget (603) does not account for these costs. Should the Board wish to bear the cost of legal expenses, a budget amendment will not be required.

CONCLUSION

In order to determine whether or not to proceed to the **first reading**, FVRD staff's consideration included the following:

- The subject properties should not remain in the Park 2 (P-2) zone as the zone is inappropriate for private properties
- Rural 5 (R-5) is the most appropriate zone as it is consistent with the surrounding area and limits further subdivision potential
- A geotechnical covenant is recommended which requires site-specific study prior to any future development

It is recommended that the Fraser Valley Regional District Board give first reading to the bylaw cited as *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022*.

Option 1 – Give 1st Reading (Staff Recommendation)

Option 2 – Defer

MOTION: THAT a decision with respect to proposed *Fraser Valley Regional District Electoral Area B Zoning Amendment Bylaw No. 1648, 2022* be deferred to the next regular meeting of the Electoral Area Services Committee [or other date];

Option 3 – Refuse

MOTION: THAT proposed *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022* not be given any readings and that the proposed rezoning be refused.

COMMENTS BY:

Hasib Nadvi, Manager of Planning: reviewed and supported

Graham Daneluz, Director of Planning & Development: reviewed and supported

Kelly Lownsbrough, Director of Corporate Services/CFO: Reviewed and supported.

Jennifer Kinneman, Chief Administrative Officer: Reviewed and supported.

FRASER VALLEY REGIONAL DISTRICT
Bylaw No. 1648, 2022

A Bylaw to Amend the Zoning for a portion of Electoral Area B

WHEREAS the Fraser Valley Regional District Board of Directors ("**the Board**") wishes to amend *Fraser Valley Regional District Zoning Bylaw No. 1638, 2021*;

THEREFORE the Board enacts as follows:

1) **CITATION**

This bylaw may be cited as *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022*.

2) **MAP AMENDMENT**

- a) That Schedule D of *Fraser Valley Regional District Zoning Bylaw No. 1638, 2021* is amended by rezoning the lands described as:

THAT PART OF LEGAL SUBDIVISION 9 SECTION 11 WHICH LIES TO THE WEST OF THE COQUIHALLA RIVER AS SHOWN ON PLAN OF SAID TOWNSHIP DATED AT OTTAWA 26TH OF OCTOBER, 1915, TOWNSHIP 6 RANGE 25 WEST OF THE 6TH MERIDIAN YALE DIVISION YALE DISTRICT EXCEPT: (1) PARCEL A ON PLAN B5846

(2) PLAN 20491

(P.I.D. 014-560-879),

comprising 22.241 acres, more or less; and

THAT PART LEGAL SUBDIVISION 10 SECTION 11 SHOWN ON PLAN OF SAID TOWNSHIP DATED THE 26TH DAY OF OCTOBER, 1915 WHICH LIES TO THE EAST OF THE KETTLE VALLEY RAILWAY RIGHT OF WAY AS SHOWN ON PLAN A239, TOWNSHIP 6 RANGE 25 WEST OF THE 6TH MERIDIAN YALE DIVISION YALE DISTRICT EXCEPT PLANS CG 277 AND 20491

(P.I.D. 014-560-810),

comprising 12.5 acres, more or less; and

LOT 1 SECTION 11 TOWNSHIP 6 RANGE 25 WEST OF THE 6TH MERIDIAN YALE DIVISION YALE DISTRICT PLAN 20491

(P.I.D. 007-850-425),

comprising 1.16 acres, more or less; and

PARCEL A ON PLAN B5846 OF THE NORTH EAST 1/4 SECTION 11 TOWNSHIP 6 RANGE 25 WEST OF THE 6TH MERIDIAN YALE DIVISION YALE DISTRICT

(P.I.D. 014-560-453),

comprising 2.59 acres, more or less,

and as outlined in heavy black and cross-hatched on Schedule 1648-A, attached to this bylaw, from the Park 2 (P-2) to the Rural 5 (R-5) zone, as shown on Schedule 1648-A.

- b) That the map appended hereto as Schedule 1648-A showing such amendments is an integral part of this bylaw.

3) SEVERABILITY

If a portion of this bylaw is found invalid by a court, it will be severed and the remainder of the bylaw will remain in effect.

4) READINGS AND ADOPTION

READ A FIRST TIME THIS _____ day of _____

PUBLIC HEARING WAS HELD THIS _____ day of _____

READ A SECOND TIME THIS _____ day of _____

READ A THIRD TIME THIS _____ day of _____

APPROVED BY THE MINISTRY
OF TRANSPORTATION AND
INFRASTRUCTURE THIS _____ day of _____

ADOPTED THIS _____ day of _____

Chair/Vice Chair

Corporate Officer/Deputy

5) CERTIFICATION

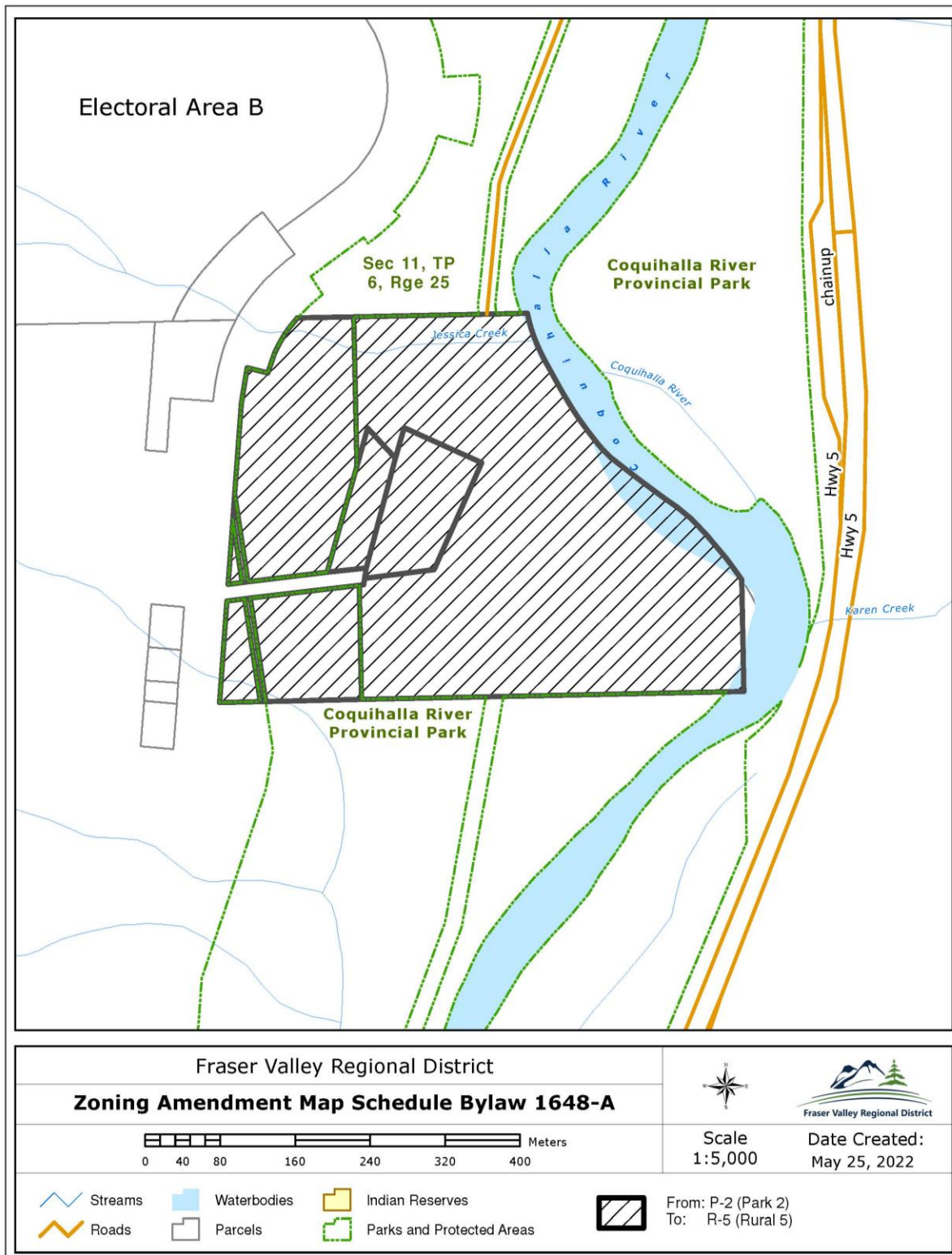
I hereby certify the foregoing to be a true and correct copy of *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022* as adopted by the Board of Directors of the Fraser Valley Regional District on _____

Dated at Chilliwack, B.C. on _____

Corporate Officer/ Deputy

DRAFT

FRASER VALLEY REGIONAL DISTRICT BYLAW NO. 1648, 2022
Map Schedule 1648-A



This is map 1 of 1 constituting Schedule 1648-A, attached to and forming part of *Fraser Valley Regional District Zoning Amendment Bylaw No. 1648, 2022*.



OVERVIEW GEOTECHNICAL HAZARD ASSESSMENT

Unwin Lands

Coquihalla River

Project Number: 21-153

September 10, 2021

Client:

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EARTH WATER LAND

EXECUTIVE SUMMARY

Fraser Valley Regional District requested that Statlu Environmental Consulting Ltd. conduct an overview geotechnical hazard assessment of the Unwin Lands, five private properties that border Coquihalla River Provincial Park on the west side of Coquihalla River 16 km northeast of Hope in FVRD's Electoral Area B.

The overview hazard assessment is intended to assist FVRD with rezoning and guiding future development, not to identify site-specific safe building sites or protective works for individual properties. All of the properties have moderate-to-high geotechnical hazard and would require future site-specific hazard assessments before development or redevelopment could occur.

Flooding, mountain stream erosion and avulsion, debris flow, debris flood, rockfall, and small landslides can all affect portions of the five properties making up the Unwin Lands. The smallest, easternmost property (PID 014-561-026) appears to be largely, if not entirely, within the active floodplain of Coquihalla River and is probably unsafe for development. The other four properties are all potentially subject to mountain stream erosion and avulsion, debris flow, debris flood, rockfall, and small landslides. Snow avalanches and large landslides might also occur but the hazards are less amenable to simple summary.

Snow avalanches initiate on the steep slopes to the west of the properties but have not run out onto the properties since the early 20th Century. At present, snow avalanche hazard is low but not negligible, and it is possible that large, rare snow avalanches might affect parts of the properties. Snow avalanche hazard is likely to decrease further over time due to climate change.

Large catastrophic landslides may have happened in the area in the past. A lobate landform opposite the properties on the other side of Coquihalla River has been identified as a large landslide deposit by some authors. The very steep mountain slopes on the side of Emancipation Mountain, upslope of the properties, could generate additional large catastrophic landslides in future. Additional site investigations and structural geology modelling are required to characterize this hazard in greater detail.

Silty till forming a large moraine near the northwestern corner of the properties might be subject to seismic-induced liquefaction. Other sediments in the area are well-drained and clast-supported and are not susceptible to seismic liquefaction.

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1.0 INTRODUCTION

The Fraser Valley Regional District (FVRD) retained Statlu Environmental Consulting Ltd. (Statlu) to conduct an overview geotechnical hazard assessment for five properties (PID 014-560-879, 014-560-453, 007-850-425, 014-560-810 and 014-561-026) near Coquihalla River Provincial Park (the Unwin Lands) in FVRD's Electoral Area B.

The Unwin Lands are privately owned land that was mistakenly zoned as park land through FVRD Zoning Bylaw 801, 1989 when Coquihalla River Provincial Park was created. FVRD and the property owners have worked to rezone the properties at various times between 1996 and 2020, and have reached agreement, subject to conditions, on such rezoning as of 2021. One of the conditions is this overview geotechnical hazard assessment, which is intended to identify hazards and guide any subsequent site-specific development of the properties. This assessment is not a site-specific hazard assessment of any of the individual properties, and it does not identify building sites, setbacks, or details of protective works which might be required in order to safely develop any of the individual properties.

This report was produced in accordance with the guidelines for geotechnical hazard assessments adopted by FVRD ¹ and with Engineers and Geoscientists BC's (EGBC) professional practice guidelines for landslide and flood assessments.

2.0 LOCATION AND SITE DESCRIPTION

The Unwin Lands consist of five properties located south of Jessica Creek on the west side of Coquihalla River and bordering Coquihalla River Provincial Park, approximately 16 km northeast of Hope in the Hozameen Ranges of the Cascade Mountains (Figure 1). Elevations across the properties are in the range of 350 m to 400 m a.s.l.

¹ [http://www.fvrd.ca/assets/Services/Documents/Planning~and~Development/Application~Forms~and~Resources/Hazard%20Acceptability%20\[NEW\]%20v.%202%20-%20updated.pdf](http://www.fvrd.ca/assets/Services/Documents/Planning~and~Development/Application~Forms~and~Resources/Hazard%20Acceptability%20[NEW]%20v.%202%20-%20updated.pdf)

The Unwin Lands are located on the west side of Coquihalla River and border Coquihalla Lakes Provincial Park in the valley bottom. Steep mountain slopes rising to about 1350 m a.s.l. along the south ridge of Emancipation Mountain lie to the west. Across Coquihalla River from the site, the Karen Creek drainage is located between the larger valleys of Sowaqua Creek, to the south, and Dewdney Creek, to the north.

Coquihalla River flows in the valley bottom and bounds the Unwin Lands to the east. Several tributary streams, including Fifteen Mile Creek and Jessica Creek, drain Emancipation Mountain and flow to Coquihalla River north of the Unwin Lands.

Highway 5 is located on the east side of Coquihalla River across from the Unwin Lands. It crosses to the west side of Coquihalla River with bridges that are respectively about 2 km north and south of the Unwin Lands.

The old Kettle Valley Railway (KVR) rail grade bounds the Unwin Lands on their western, upslope edge. A Spectra Energy natural gas pipeline that follows an otherwise unmaintained private road (Siwash Creek Road) runs near the eastern edge of the Unwin Lands and provides access to the properties from the north at Carolin Mines exit.

2.1 Geologic and Geomorphic Setting

Bedrock in the area consists of two geologic units, both Permian to Jurassic-aged ultramafic rocks and gabbro, underlie the valley bottom and lower slopes, while higher elevations to the south of and upslope of the proposed block have Hozameen complex clastic sedimentary rocks, primarily chert and pelite (iMapBC, 2021).

Surficial materials in the area are complex. Layered glaciolacustrine and glaciofluvial deposits in the valley bottom consist of bedded silt, and massive to bedded, sorted to unsorted sand, gravel, and boulders. These materials form low terraces near Coquihalla River. A second, higher, dissected terrace along the west side of the Unwin Lands is composed of silty-sandy till. Upslope of the second terrace deep deposits of till are overlain with a blanket to mantle of sandy rubbly colluvium derived from the upslope cliffs.

On the east side of Coquihalla River, across the river from the Unwin Lands, an enigmatic landform near Karen Creek has previously been interpreted as the deposit of a large prehistoric landslide (Savigny, 1992).

2.2 Climate and Weather

The nearest long-term climate station is at Hope Slide, 18 km south-southeast of the Unwin Lands at an elevation of 685 m above sea level. Climatic normals are available at this station for the period between 1981 and 2010 (Environment Canada, 2021). Mean annual precipitation was 1220 mm, with 288 cm (288 mm water equivalent) falling as snow. Extreme rainfall was 133 mm in 24 hours.

ClimateBC is a climate model that uses data from western North America to predict climate characteristics for locations distant from weather stations (Wang *et al.*, 2016). The model predicted wetter conditions and less snow at the Unwin Lands relative to Hope Slide, showing mean annual precipitation of 1715 mm with 211 cm of snow.

2.2.1 Climate Change

Human activity is changing the climate. ClimateBC (Wang *et al.*, 2016) also provides means to evaluate the effects of projected climate change. Specifically, for the Unwin Lands area, the SSP585 model scenario predicts that mean annual precipitation will increase by about 14% by 2085, while total snowfall will decrease by about 80% over the same period.

I used the IDF_CC 5.0 tool (Simonovic *et al.*, 2018) to estimate predicted changes in short-term precipitation intensities in order to supplement the predicted seasonal to annual changes to climate predicted using ClimateBC. For the Unwin Lands, at present, IDF_CC 5.0 predicts that 24-hour, 2-year precipitation intensity is about 73 mm, while 24-hour, 100-year precipitation (the one-day precipitation total that would be exceeded, on average, once in 100 years under the current climatic conditions) is about 199 mm. Under the same SSP585 scenario, for the period of 2055 to 2085, IDF_CC 4.5 predicts that the corresponding intensities will be 90 mm for the 2-year return period and 238 mm for the 100-year return period. That is, predicted

precipitation during rainstorms will be 20% to 24% more intense under future conditions than at present due to climate change.

3.0 METHODS

The geotechnical hazard assessment methods included reviewing historical aerial photography, local terrain hazard maps, research publications and technical reports, geotechnical hazard assessments conducted locations near the property, and other information. I made a site visit to the area on July 30, 2021, and also used observations I have made during previous work in the area.

I used historic Water Survey of Canada hydrometric data from gauges on Coquihalla River upstream and downstream of the Unwin Lands, and previously published hydrologic assessments, to evaluate flood frequencies and magnitudes in Coquihalla River. I scaled estimated Coquihalla River flood flow to the watershed area near the Unwin Lands using regional scaling relationships.

4.0 OBSERVATIONS

4.1 Air Photo Review

Historical aerial photographs and digital orthoimagery that cover the period from 1948 to 2021 provide a history of natural hazards and development for the area. The older photographs were stereo images viewed in hard copy; more recent images were viewed online (Table 1).

Table 1: List of historical aerial photos.

Photo Number(s)	Image Date
BC603: 27-28	1948
BC1746: 29-31	1953
BC4017: 80-82	1963
BC5168: 179-180	1965
BC5286: 165-166	1968
BC7469: 15-16	1973
BC78009: 206-209	1978

Photo Number(s)	Image Date
BC83007: 114-115	1983
BCC955:134-135	1989
BCB92112: 20-21	1992
BCC96078: 13-14	1996
BCC03047: 105-106	2003
Satellite Images on FVRD webmap	2009
Google Earth Images	2006-2021

The earliest photos show historic disturbances associated with railway construction and fires in the area. Photos from the 1980s show valley bottom disturbance associated with Coquihalla Highway construction. Snow avalanche tracks in the area have become more vegetated over time corresponding with historic climate change and decreases in annual snow accumulation and snowpack depth. In other areas, forest cover has become progressively more established following the extensive fires that occurred before 1948. (I expect that at least some of these fires were started by sparks from the railway line, which operated between 1915 and 1961.) No visible large landslides occurred on or near the Unwin Lands during the period of historic imagery.

4.2 Background Review

FVRD provided background geotechnical hazard reports from their library that cover the general area of the lower Coquihalla River valley.

Hardy Associates (1986) reviewed geological and snow avalanche hazards for Electoral Areas B and C for the Regional District of Fraser-Cheam but did not report on the Karen Creek area; their review ended at Peers Creek, 10 km to the south.

Northwest Hydraulic Consultants (1994, 2003) reviewed flood hazards for Coquihalla River for District of Hope and estimated 1-in-200 year (Q200) flood magnitude at Hope as 1220 m³/s.

LaCas Consultants Inc. (2017) provided revised Q200 magnitude estimates for various points along the lower Coquihalla River near Hope ranging from 1220 m³/s near the Kawkawa Lake Road bridge to 1238 m³/s at the mouth.

Septer (2006) compiled records of snow avalanches, flooding, landslides, debris flows, and other disturbances along Coquihalla River, although few, if any, of the recorded events can be located accurately with respect to the Unwin Lands.

BGC (2014, 2015) reviewed geohazards along the Trans Mountain Expansion Project corridor, including where it passes near the Unwin Lands.

4.3 Field Observations

Drew Brayshaw Ph.D. P.Geo. from Statlu made a field visit to the site on July 30, 2021. I spent approximately two hours on site. Weather conditions were sunny and warm, and visibility was unrestricted. In addition, I had previously made a field visit to the area upslope (west) of the Unwin Lands with BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD) staff as part of a preliminary forestry terrain hazard assessment for future cutblock development in November 2020. Weather conditions during that assessment were overcast with rain. I used observations made during the previous assessment to inform and guide the July field visit.

4.3.1 Coquihalla River

In its reaches near the Unwin Lands, Coquihalla River has a bankfull width ranging from 30 m to 50 m and a channel gradient of from 1% to 4%. The gradient steepens as it nears the Unwin Lands and bends around them, then decreases again downstream. The bend in the river is a long-established feature of the river's morphology here, with a point bar on the west (Unwin Lands) side, and coarse rip rap placed along the outside of the bend on the opposite (east, highway) side of the river to protect the highway from erosion.

Gravel bars along Coquihalla River, including the point bar at the property and other bars both upstream and downstream have become progressively vegetated since the early 2000s. A large flood occurred in 2006, but the changes in Coquihalla River began before the flood and probably relate to upstream sediment supply dynamics, including sedimentation from highway

construction in the 1980s and forestry-related terrain instability before 1995, as well as the length of time since the last major flood.

The natural gas pipeline along the west side of Coquihalla River follows Siwash Creek Road. North of Jessica Creek, the pipeline is between the road and the river. At Jessica Creek, both the pipeline and the road move away from the river as they climb to the terrace (discussed in Section 4.3.2). Coarse angular rock riprap protects the western riverbank (and pipeline) from erosion north of Jessica Creek, but no riprap protects the bank south of the mouth of Jessica Creek.

The sediment in Coquihalla River ranges from gravel to boulder sized. The coarser sediment is lag sediment which has winnowed out of the glaciofluvial valley fill, supplemented by pieces of colluvial debris that have reached the valley bottom since deglaciation. This coarser fraction is largely immobile. As the decrease in sediment supply since the 2000s has taken place, the texture of Coquihalla River's bed appears to have become coarser and more armoured as finer sediment is transported downstream and not replaced.

4.3.2 Terrace

Much of the Unwin Lands, between Siwash Creek Road and the Kettle Valley rail grade, consists of a glaciofluvial terrace which is 20 m to 40 m in elevation above Coquihalla River's floodplain. This terrace has a level or gently sloping top (slope gradients less than 20%), steep slopes below the top extend down to Coquihalla River along its eastern edge (slope gradients in excess of 70%), and moderately steep slopes lie to the north and south (slope gradients of 20% to 40%).

The terrace is underlain by well-drained bedded glaciofluvial materials ranging from sand to boulders. Past bank erosion by Coquihalla River of the edge of the terrace south of the mouth of Jessica Creek has left a scarp which exposes these sediments.

Several small streams flow from the west and cross the KVR grade. Where these small streams flow out onto the terrace top, they mostly dewater and drain into the underlying glaciofluvial sediment. During wet conditions, such as my November field visit, some streamflow ponds along the west side of Siwash Creek Road, near the southern edge of the Unwin Lands, where the existing pipeline and road corridors interrupt streamflow because there are only a few widely spaced small culverts. As a result of this culvert sizing and spacing, during high flow, water that reaches the road and pipeline corridor ponds against the road fill.

4.3.3 Colluvial Slopes

The long south ridge of Emancipation Mountain forms the divide between Coquihalla River and Deneau Creek, and the steep eastern flank of this ridge rises steeply to 1350 m elevation, approximately 1000 m above the valley bottom. Near-vertical bedrock slopes are above about 750 m in elevation and a colluvial apron is below 750 m in elevation. This apron extends down to near the KVR rail grade and has variable thickness. The toe is composed of a thin layer that has encroached onto the terrace top downslope of the KVR grade. The apron then thickens upslope and then thins again at its upslope edge. Streams flowing off the steep rock above have dissected the colluvial apron, creating a series of parallel active and inactive gullies that range from around 20 m to 30 m deep and that expose the underlying till, but not bedrock, in their channels. The slope gradients on this colluvial apron range from 20% to 25% at the toe on the terrace, to 55% in the middle, and up to about 75% at its upper edge. Gully sideslopes have gradients of 55% to 80%. Debris flows have occurred in the past in the gullies, and I observed the deposits of one recent event just south of the south end of the Unwin Lands, near an old quarry along the KVR grade. Up to a 1 m depth of rubbly sediment had deposited through the forest upslope of the railway.

4.3.4 Moraine

A large moraine ridge is present near the KVR along the northern side of and north of the Unwin Lands. It is made of silty-sandy till. The southernmost edge of this moraine is about 500 m south of Jessica Creek, and it becomes higher to the north of Jessica Creek. South of Jessica Creek, where it is upslope of the northern part of the Unwin Lands, the colluvial deposits from upslope have run up against and deposited over top of the moraine, so that there is no distinct transition from moraine to colluvial slopes. To the north of Jessica Creek, the moraine is higher and a distinct valley or linear depression marks its western edge, where colluvial debris has run out against it but not accumulated sufficiently to cover it.

Construction of the KVR rail grade significantly modified the moraine, cutting through it and redistributing the sediments that composed it to fill in depressions. The cutslope along the KVR grade through the Unwin Lands increases in height from about 1 m at its southern end to about 20 m at its highest, just south of Jessica Creek. There are higher cutslopes outside the assessed area, north of Jessica Creek.

The silty-textured till and the steep gradients of the old KVR cutslopes mean that there have been several slumps and sloughs of material from the cutslope onto the KVR grade near the northern end of the Unwin Lands.

4.3.5 Jessica Creek

Jessica Creek flows near the northern end of the Unwin Lands. It flows in a gully west of the Unwin Lands, upslope of the KVR grade. Below the KVR grade, it is incised below the level of the terrace and has a high southern bank up to 20 m high and a much lower northern bank that is up to about 8 m high. A bedrock waterfall about 5 m high is exposed in the creek channel just upstream of the KVR grade. It crosses the KVR in two large, circa 1500 mm diameter, metal pipe culverts. A third, damaged culvert of similar dimensions is in the stream channel about 120 m downstream of the KVR grade, to where it was probably transported by a past flood and washout.

Jessica Creek has constructed a small alluvial fan where it reaches the edge of the Coquihalla River floodplain near Siwash Creek Road. Debris floods, debris flows, and floods have deposited sediment on this fan. The creek crosses Siwash Creek Road in three small (circa 1000 mm) metal pipe culverts. Two are close together and the third is offset to the south of the others by about 10 m. Sediment deposition in Jessica Creek has partly blocked two of the three culverts.

4.3.6 Landform Across Coquihalla River from Unwin Lands

An unusual lobate landform is across Coquihalla River from the Unwin Lands, on the east side of the valley. Karen Creek bounds this feature to the north and an unnamed creek flows along its southern edge. The feature is about 700 m wide and up to 30 m high. Its toe is just upslope of Coquihalla Highway. Both Karen Creek FSR and the Trans Mountain pipeline cross it. The ridges that demarcate the upslope end of this lobe extend upslope to an elevation of 720 m before the slope gradient decreases near the ridge crest along the divide with Dewdney Creek. A west-facing cirque lies above this feature, north of Serpentine Lakes, with a maximum elevation of about 1480 m.

Savigny (1992), in unpublished work pursuant to his doctoral thesis, identified this lobate feature (from aerial photograph interpretation only) as the deposit of a large landslide. It has been included as such in unofficial geoscience field guides to the Coquihalla Highway (Brideau, 2021, p.comm.). BGC (2014, 2017) describe it as a large landslide deposit or stabilized earthflow, one of five to seven large landslide deposits along Coquihalla River between Hope and Coquihalla Summit. There does not seem to be any visible source area or scar upslope of the feature from which a landslide might have originated. Notably, this feature is directly across Coquihalla River from the southern end of the moraine (Section 4.3.4) and so it could also be interpreted as the eastern continuation of that moraine, which Coquihalla River has breached. It is also possible that it is a moraine which fluidized and flowed downslope after being deposited, which could explain the lack of obvious upslope source area. Ultimately, more research is required to unequivocally determine the origin of this feature.

4.3.7 Existing Structures

At least three houses or cabins are on the Unwin Lands and another three cabins are just outside the assessed area, on small private lots on the west (uphill) side of the KVR grade across from the southern end of the Unwin Lands. All of these structures are visible on the historic imagery that is of sufficient resolution to distinguish them, and most have been in place since at least the early 1960s. I understand that some of them may have been constructed contemporaneously with the KVR. I was not asked to, and did not, assess any of these structures.

5.0 RESULTS

I evaluated the expected 1-in-200 year (0.5% annual exceedance probability) for Coquihalla River near the Unwin Lands by taking the previously evaluated 1-in-200 year flood magnitude for Coquihalla River at Hope (NHC, 1994, 2003; LaCas, 2017) and scaling it proportionally for the smaller drainage area of Coquihalla River at the Unwin Lands.

Coquihalla River near Hope (Water Survey of Canada gauge 08MF003) has a drainage area of 741 km² and an estimated Q200 peak flow of 1220 m³/s. Coquihalla River near Needle Creek (WSC gauge 08MF062) has a drainage area of 85.5 km² and an estimated Q200 peak flow of 94.7 m³/s (Hassan et al, 2014) (Table 2). The drainage area of Coquihalla River near the Unwin Lands is approximately 350 km², so linear interpolation between the two gauges suggests that the Q200 peak flow near the Unwin Lands should be about 502 m³/s. If a larger selection of watersheds over a range of drainage areas in southwestern BC from Hassan et al (2014) and the BC MoE estimate of Q200 peak flow in Chilliwack River are included in the analysis, the estimate is slightly higher, on the order of 642 m³/s. These values are based only on historic streamflow data. After accounting for the effects of climate change (Burn et al. 2016), the expected Q200 peak flow in Coquihalla River near the Unwin Lands might be larger than that derived from historical data, in the range of 650 m³/s to 700 m³/s. At the expected range of water levels resulting from this peak flow, the Siwash Creek Road and Coquihalla Highway

might be inundated, and bank erosion along the edge of the terrace of the Unwin Lands could be expected, but the top of the terrace would not be flooded.

Table 2: Watershed Areas and Observed and Modelled Discharges

Watershed	Area (km ²)	Q200 Peak Discharge (m ³ /s)
Coquihalla River at Needle Creek	85.5	94.7
Coquihalla River at Hope	741	1220
Coquihalla River near Unwin Lands	350	502 to 642 (interpolation from historical data)
		650 to 700 (after accounting for climate change)

6.0 HAZARD ANALYSIS

The Cave report (1993) and Guide to Geohazard (2020) of the Fraser Valley Regional District lists the following categories of geotechnical hazards for consideration:

- Debris flows
- Debris floods
- Channel avulsion and erosion
- Inundation by flood waters
- Snow avalanche
- Rock fall
- Localized and large-scale landslides
- Earthquake-induced soil liquefaction

As described in Section 5, the expected 1-in-200 year Coquihalla River flood flow (including climate change expectations) is in the range of 650 m³/s to 700 m³/s. At this discharge, I expect that the easternmost of the five properties making up the Unwin Lands (PID 014-561-026), which is below the level of the terrace and which seems to consist entirely of gravel bars within the active floodplain of Coquihalla River would be entirely inundated by several meters of water. This property likely experiences seasonal floods almost every year. Bank erosion from a large flood could cause localized erosion and retreat of, and/or landsliding along, the steep terrace sideslopes above Coquihalla River.

Debris flows, debris floods, and mountain stream erosion/avulsion can occur in Jessica Creek and affect the northern edge of the Unwin Lands. Debris flows, debris floods, and floods caused by erosion or avulsion in gullies upslope of the KVR grade can also occur and would result in sediment and water running out across the KVR grade and encroaching on the terrace top.

Localized landslides and rockfall from the steep ground upslope could also run out across the KVR grade onto the terrace top. The likelihood of such events reaching and crossing the KVR grade and thus running out onto the Unwin Lands is greatest at the southern edge and decreases from south to north, as a result of the gradient, proximity, and orientation of the steep mountain slopes to the west.

Snow avalanches initiate on the steep mountain slopes to the west but run out near the base of those slopes, at the top of the colluvial apron. The likelihood of large, destructive snow avalanches that could reach the KVR grade near the Unwin Lands has decreased over time, both as a result of vegetative changes caused by forest regrowth after fires, and climate change which has decreased the winter snowpack depth and seasonality. In the 1948 air photos, it appeared that some snow avalanches at the time or in the 1930s might have reached the KVR grade near the southern end of the Unwin Lands. No snow avalanches have reached the KVR grade since at least the 1950s. Climate change will further decrease the likelihood of large snow avalanches in future. Although no snow avalanches have reached the KVR grade in at least sixty years this does not mean that there is no snow avalanche hazard to the Unwin Lands or that such events cannot occur in future. Rather, it indicates that such destructive events are rare and have a low average annual likelihood of occurrence. The expected likelihood of snow avalanche will decrease in future due to climate change and consequent reductions in total snowfall and depth of snowpack.

Large landslides are the most difficult class of hazards to evaluate. The lobate landform across Coquihalla River from the Unwin Lands may be the deposit of one such event. BGC (2014, 2017) estimated that five to seven large catastrophic landslides have occurred since deglaciation along the Coquihalla River between Hope and Coquihalla Summit. Existing scars of past landslides and rockfalls on the steep sides of Emancipation Mountain suggest that several past

events with volumes of 50,000 m³ to 200,000 m³ have initiated on these steep slopes, and it is likely that their deposits compose a significant fraction of the colluvial apron at the base of these steep slopes. Construction of the KVR undoubtedly modified these deposits and may have removed some evidence of past large landslides. It is also likely that no large landslides have run out onto the eastern half of the terrace top since deglaciation, since there is no evidence of colluvial debris here, only glaciofluvial sediment, and it is largely unmodified by past construction. The absence of past events does not, in and of itself, indicate no likelihood of future events. More detailed inspection of the ridgeline along the divide between Coquihalla River and Deneau Creek, together with three-dimensional structural geology modelling, could be used to constrain probable maximum event magnitudes and model runout distances for future events as well as evaluate the average annual likelihood of such events.

The silty till making up the moraine along the northern boundary of the Unwin Lands may be subject to seismic liquefaction. The other surficial materials, including the rubble forming the colluvial apron and the sandy to boulder glaciofluvial sediments, are clast-supported dry deposits and are not subject to liquefaction.

7.0 HAZARD CLASSES FOR DEVELOPMENT APPROVAL

At the request of FVRD, I did not evaluate specific probabilities of occurrence for the various hazards, which vary across the Unwin Lands, nor did I attempt to evaluate specific hazard frequencies or magnitudes to existing structures or identify safe building sites for construction. I understand that future site-specific hazard assessments will be required if property owners wish to develop or redevelop their properties.

Of the five Unwin Lands properties, the smallest, eastern property (PID 014-561-026) appears to be entirely within the active floodplain of Coquihalla River and is probably unsafe for development. The other four properties making up the Unwin Lands have varying degrees of exposure to small and large landslides, rockfall, mountain stream erosion and avulsion, debris flows, debris floods, and snow avalanches. All of these properties have moderate-to-high geotechnical hazard and will require more detailed assessment to better characterize these

hazards and evaluate site-specific safe building sites, setbacks, protective works, or other mitigating measures before any development or redevelopment can occur.

8.0 CONCLUSION

Fraser Valley Regional District requested that Statlu Environmental Consulting Ltd. conduct an overview geotechnical hazard assessment of the Unwin Lands, five private properties that border Coquihalla River Provincial Park on the west side of Coquihalla River 16 km northeast of Hope in FVRD's Electoral Area B.

The overview hazard assessment is intended to assist FVRD with rezoning and guiding future development, not to identify site-specific safe building sites or protective works for individual properties. All of the properties have moderate-to-high geotechnical hazard and would require future site-specific hazard assessments before development or redevelopment could occur.

Flooding, mountain stream erosion and avulsion, debris flow, debris flood, rockfall, and small landslides can all affect portions of the five properties making up the Unwin Lands. The smallest, easternmost property (PID 014-561-026) appears to be largely, if not entirely, within the active floodplain of Coquihalla River and is probably unsafe for development. The other four properties are all potentially subject to mountain stream erosion and avulsion, debris flow, debris flood, rockfall, and small landslides. Snow avalanches and large landslides might also occur but the hazards are less amenable to simple summary.

Snow avalanches initiate on the steep slopes to the west of the properties but have not run out onto the properties since the early 20th Century. At present, snow avalanche hazard is low but not negligible, and it is possible that large, rare snow avalanches might affect parts of the properties. Snow avalanche hazard is likely to decrease further over time due to climate change.

Large catastrophic landslides may have happened in the area in the past. A lobate landform opposite the properties on the other side of Coquihalla River has been identified as a large landslide deposit by some authors. The very steep mountain slopes on the side of Emancipation Mountain, upslope of the properties, could generate additional large catastrophic landslides in future. Additional site investigations and structural geology modelling are required to characterize this hazard in greater detail.

Silty till forming a large moraine near the northwestern corner of the properties might be subject to seismic-induced liquefaction. Other sediments in the area are well-drained and clast-supported and are not susceptible to seismic liquefaction.

9.0 LIMITATIONS

A geomorphic site investigation can reduce, but not wholly eliminate uncertainty regarding the natural hazards at a site, given reasonable limits of time and cost. Statlu Environmental Consulting Ltd. (Statlu) conducted this investigation and prepared this report in a manner consistent with the level of care normally exercised by environmental professionals currently practicing in the area under similar conditions and budgetary constraints. No other warranties, either expressed or implied, are made. If unexpected environmental and/or geomorphic conditions are encountered on the site, Statlu must be notified in order that we may determine if modifications to our findings are necessary.

The findings of this investigation and report are based in part on Statlu's visual observations of site conditions. Our opinion cannot be extended to portions of the site that were unavailable for direct observations. We made reasonable efforts to collect information and site observations that are representative of conditions in the relevant portions of the site; however, conditions may vary from place to place and geological conditions may change with the passage of time. Site information pertains specifically to the points and dates of observation.

Statlu has prepared this report for the exclusive use of its client. This report is intended to assist the client in a rezoning process. This report was prepared considering circumstances applying specifically to the client and applies only to the specific properties identified in the report. It is intended only for internal use by the client for the purposes for which it was commissioned and for use by government agencies regulating the specific activities to which it pertains. It is not reasonable for other parties to rely on the observations or conclusions contained herein. The liability of the site, if any, is not transferred to Statlu, and Statlu makes no recommendation regarding the purchase, sale, or investment in the property.

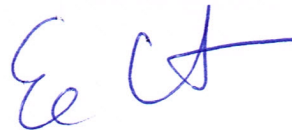
The Fraser Valley Regional District may use this report for approval purposes. The report must be considered in its entirety, including appendices, drawings, and figures to understand the recommendations and opinions contained herein.

10.0 CLOSURE

Please contact me should you have any questions or if you require further clarification.

Yours truly

Statlu Environmental Consulting Ltd.



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DB/EC/jb

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Permit to Practice Number: 1000170

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APPENDIX 1: FIGURES

014-560-810

007-850-425

014-560-453

014-560-879

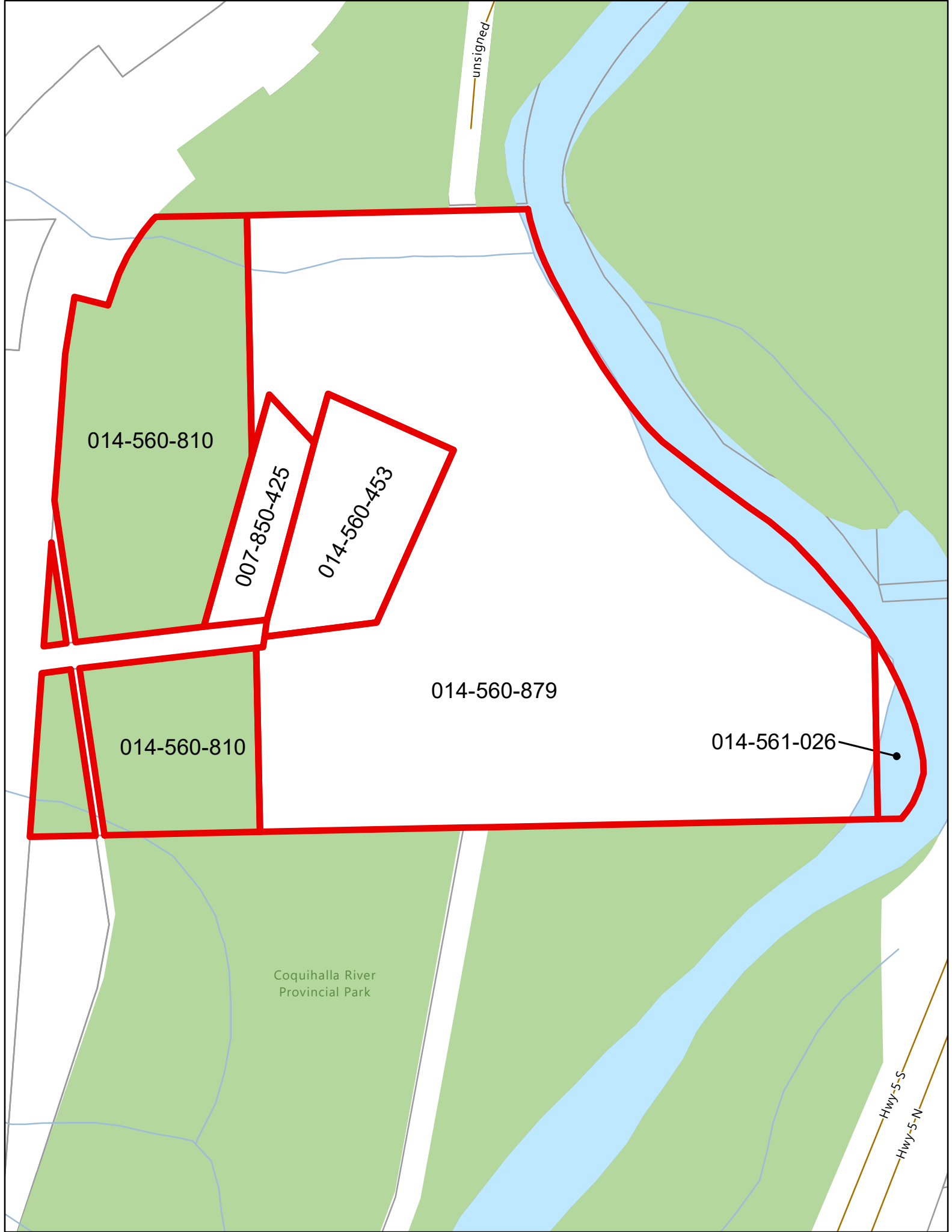
014-560-810

014-561-026

Coquihalla River
Provincial Park

unsigned

Hwy-5-S
Hwy-5-N



To: Electoral Area Services Committee
From: Julie Mundy, Planner 1

2021-02-11
Date: ~~2020-12-08~~
File No: 732.05077.002,
732.05077.004, 732.05078.002,
732.05078.050, 732.05079.000

Subject: Request for FVRD to initiate a zoning amendment for five privately owned properties adjacent to Coquihalla River Provincial Park, Electoral Area B

RECOMMENDATION

THAT the Fraser Valley Regional District Board direct staff to initiate a zoning amendment for five privately owned properties adjacent to the Coquihalla River Provincial Park, Electoral Area B

STRATEGIC AREA(S) OF FOCUS

Support Healthy & Sustainable Community
Provide Responsive & Effective Public Services

ISSUE

Five privately owned properties adjacent to Coquihalla River Provincial Park were inappropriately zoned to Park (P-1) in 1989. One of the impacted property owners has requested FVRD undertake a zoning amendment to correct the error.

Rezoning efforts were undertaken in 1996 to correct the zoning. The property owners of the time were not amenable to the Regional District requirement that gravel extraction be prohibited by legal covenant. Consequently, the rezoning was not completed.

BACKGROUND

This matter was brought to EASC in December 2020, where it was referred back to staff. Since then, staff have been in contact with the Director for Electoral Area B to discuss preliminary concerns.

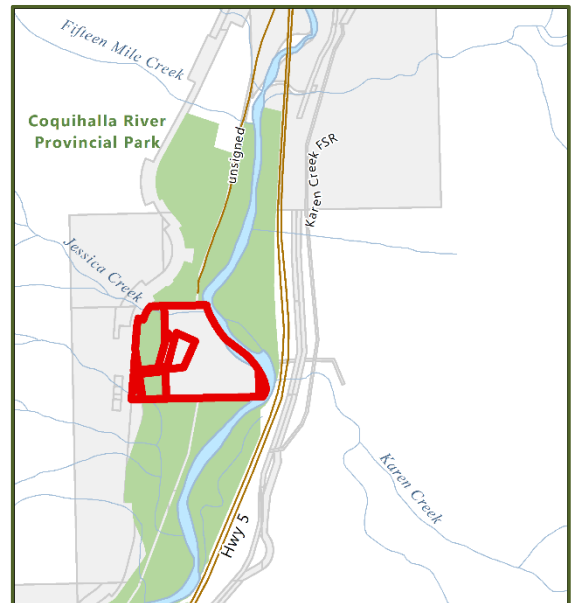
There are five parcels located off the Caroline Mines Road Exit on Highway 5 which were zoned to Park (P-1) in 1989. At the time, FVRD understood the parcels to be part of the lands designated as the Coquihalla River Recreational Area (circa 1934). The recreation area was later designated as Coquihalla

Provincial Park (1986) through Order in Council #1183, and zoned as Park (P-1) when Zoning Bylaw 801, 1989 was adopted. FVRD was unaware that privately owned parcels were included in the P-1 zone.

BC Parks has confirmed that all privately owned properties are excluded from the Coquihalla River Provincial Park boundaries.

Impacted Properties

PID	Property size Acres (ha)	Owner last name
014-560-879	22.24 (9 ha)	Unwin/ Ouellette
014-561-026	0.528 (0.21 ha)	Unwin
014-560-810	12.5 (5.05 ha)	Unwin
007-850-425	1.16 (0.47 ha)	Mason
014-560-453	2.59 (1.05 ha)	Bradner



Rezoning process 1996

In 1996, one of the property owners brought the zoning error to the attention of FVRD. In response, FVRD initiated a zoning amendment with no charge to the property owners to correct the issue.

The zoning amendment had three readings and a public hearing. A condition of the rezoning was that the applicant register a covenant to the property title prohibiting rock quarry and gravel pit uses. This step was not completed by the property owners and, consequently, the rezoning was not completed.

Rezoning request 2009

The topic of rezoning the properties was again raised by a property owner in 2009. At that time staff advised:

- The property owners would be responsible for paying for the zoning amendment, as the Regional District has already funded a full process once (three readings and a public hearing);
- Geotechnical issues need to be addressed with an overview geohazard assessment prior to a rezoning application;
- Any recommendations from the geotechnical report would need to be registered to each property title as a Section 219 covenant.

DISCUSSION

On September 20, 2020 staff received another request from Mr. Doug Unwin for FVRD to initiate a rezoning of his family's properties. The request is to rezone the properties to R-1 rather than the previously considered R-4 zone. A key difference between the R-1 and R-4 zones is the minimum parcel size that could be created by subdivision. Mr. Unwin states the R-1 zone is desirable as it may allow for future subdivision.

- R-1 – Minimum parcel size of 2 ha
- R-4 – Minimum parcel size of 4 ha

Staff would like to draw attention to the following issues:

1. **Inappropriate Zoning.** The subject properties are zoned Park (P-1) which is a zone meant to accommodate public use. The Park zone does not allow for principal residences to be constructed on the lands. The subject properties are privately owned and, therefore, should not have this zoning.
2. **Development Potential.** Staff are of the opinion the R-4 is the most appropriate zone for the properties. All areas in the vicinity of this part of Hwy 5, the Coquihalla River, and the Coquihalla River Provincial Park are zoned R-4, with the exception of the park. In 2010, three of the five subject properties had a dwelling on them. The R-4 zone would allow the existing residential uses to continue, and would not facilitate additional development potential in terms of subdivision.

The requested R-1 zone could potentially allow for subdivision on two of the properties based on the minimum parcel size. Staff are supportive of correcting the zoning in order to secure existing property rights for the land owners. However, in instances where a rezoning increases the subdivision potential, the costs are typically borne by the parties that would benefit.

If the rezoning were to facilitate subdivision, the rezoning process would need to consider all potential lots. This would increase the costs and potential liability to FVRD. Staff would not recommend FVRD initiate a rezoning which facilitates subdivision.

3. **Building Permit Requirements/ Public Road Access.** None of the properties have access from a public road. According to the Fraser Valley Regional District Building Bylaw, the property owners are not required, but may obtain a building permit from the Regional District where the property is not accessible from a public road. It is up to the property owner to decide if they wish to obtain a building permit.
4. **Geotechnical Concerns.** During the 1996 rezoning process, staff noted that a landslide occurred in the area in the early 1990s. A geotechnical study was not conducted at the time. A geotechnical feasibility study, or a covenant requiring geotechnical assessment prior to construction of habitable space will likely be recommended as part of the rezoning process.

5. **Restrictive Covenant.** The previous rezoning process included the requirement for the property owners to register a restrictive covenant which prohibited rock quarry and gravel pit uses on the properties. A similar covenant will likely be recommended should the rezoning move forward. Mr. Unwin has indicated a general acceptance of the covenant in his request to FVRD.

An FVRD initiated rezoning process could be started in 2021, with an estimated completion date by 2022. The project would be placed in queue alongside other priority planning projects.

COST

If the property owners were to initiate this proposal, the cost to rezone five lots with three separate owners would be \$8,400.

If FVRD is to initiate the rezoning, the direct cost of public hearings, advertisements, and any technical assessment would come from the Electoral Area Planning budget. These direct expenditures - excluding staff and administration - are estimated to be \$4,000.

The costs of covenant registration would be borne by the property owners.

CONCLUSION

Staff are of the opinion that another effort should be made to correct the historical zoning error. It is recommended that the FVRD Board direct staff to initiate a rezoning process in order to restore property rights to the landowners. The key purpose of the rezoning would be to bring the existing residential uses on the properties into conformity without creating additional subdivision potential.

Staff note that there is an awareness from at least one property owner that a covenant limiting some land uses, or requiring future geotechnical study may be required. This awareness may help a zoning amendment process to reach a satisfactory conclusion for all parties. If the property owners reject a potential rezoning once it has started, staff would be unlikely to support initiating another process in the future.

OPTIONS

Option 1 – Initiate Rezoning (Recommended)

With this option, FVRD accepts the cost of the rezoning in order to correct a historical error. The property owner may be responsible for bearing costs related registration of required covenants.

THAT the Fraser Valley Regional District Board direct staff to initiate a zoning amendment for five privately owned properties adjacent to Coquihalla River Provincial Park.

Option 2 – Refuse to Initiate Rezoning

With this option, the property owners are responsible for initiating and funding a rezoning application.

THAT the Fraser Valley Regional District Board refuse the request for staff to initiate a zoning amendment for five privately owned properties adjacent to Coquihalla River Provincial Park.

Option 3 – Refer to the Request Back to Staff

THAT the Fraser Valley Regional District Board refer the request for staff to initiate a zoning amendment for five privately owned properties adjacent to Coquihalla River Provincial Park back to staff.

COMMENTS BY:

Graham Daneluz, Director of Planning & Development: Reviewed and supported

Kelly Lownsbrough, Chief Financial Officer/ Director of Finance: Reviewed and supported.

Jennifer Kinneman, Chief Administrative Officer: Reviewed and supported.