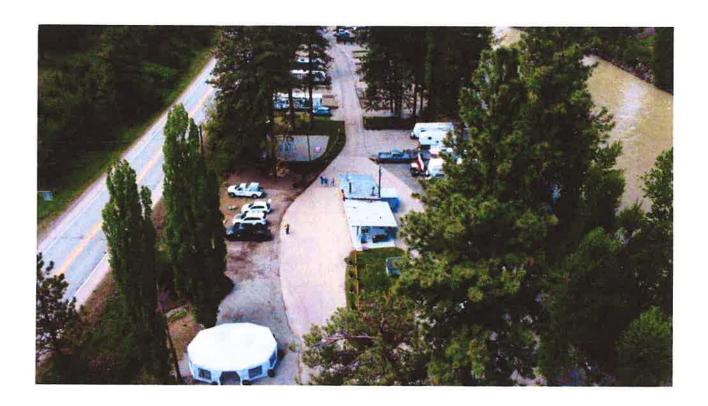
# Riparian Area Regulation (RAR) Assessment Report for the Property Located at 365 Highway 3, Princeton, BC



Prepared by:

VALLEY ENVIRONMENTAL

David Cassidy, BSc, R.P. Bio. 3265 Webber Road Westbank, BC V4T 1G3

Riparian Areas Regulation: Assessment Report
Please refer to submission instructions and assessment report guidelines when completing this report.

Date June 20, 2022

# I. Primary QEP Information

First Name	David	iddle Name William			
Last Name	Cassidy				
Designation	R.P.Bio.	Company Valley Environmental			
Registration #	1556		Email david.cassidy@shaw.ca		
Address	3265 Webber Road				
City	Westbank	Postal/Zip	V4T 1G3	Phone #	250-490-0161
Prov/state	BC	Country	Canada		

# II. Secondary QEP Information (use Form 2 for other QEPs)

First Name	Middle Name	
Last Name		
Designation	Compai	ny:
Registration #	Email:	
Address		
City	Postal/Zip	Phone #
Prov/state	Country	

# III. Developer Information

First Name	Gary	Middle N	lame	
Last Name	Schatz			
Company	Town of Princeton			
Phone #	250-295-3135		Email gschatz@	princeton.ca
Address	151 Vermilion Avenue			
City	Princeton	Postal/Zip	V0X 1W0	
Prov/state	BC	Country	Canada	

# IV. Development Information

Development Type	Construction: Ir	nstitutional / recreational – RV Park Washrooms	
Area of Development (ha)	0.016	Riparian Length (m) 120	Ī
Lot Area (ha)		Nature of Development Re-development	
Proposed Start Date July	15, 2022	Proposed End Date Dec 31, 2023	

# V. Location of Proposed Development

				lighway 97				
Local Government	Town o	of Princeto	n					
Stream Name	Similka	Similkameen River						
Legal Description	018-238-823				Region Okanagan (8)			
Stream/River Type	Stream			DFO Area BC Interior				
Watershed Code	310-36	7800			,,,			
Latitude	49	27	44	Longitude	120	28	38	

# Table of Contents for Assessment Report

- 1. Description of Fisheries Resources Values
- 2. Results of Riparian Assessment (SPEA width)
- 3. Site Plan
- 4. Measures to Protect and Maintain the SPEA (detailed methodology only)
- 5. Environmental Monitoring
- 6. Photos
- 7. Assessment Report Professional Opinion

# Section 1. Description of Fisheries Resources Values

The Similkameen river flows east through the southern portion of British Columbia starting near Manning Park and emptying into the Okanogan River just south of the Canada/US border near Oroville, Washington.

This stream is a primary tributary to the Okanagan River and to the Columbia River both of which support numerous salmonid and non-salmonid species. Coyote Falls, a natural barrier at the Enloe Dam, was used to construct the dam and has prevented salmon from migrating into the upper Canadian portions of the Similkameen River.

Fish species include: rainbow trout (Oncorhynchus mykiss), brook trout (Salvelinus fontinalis), dolly varden (Salvelinus malma), mountain whitefish (Prosopium williamsoni), black catfish (Ameiurus melas), bridgelip sucker (Catostomus columbianus), largescale sucker (Catostomus macrocheilus), longnose dace (Rhinichthys cataractae), mottled sculpin (Cottus bairdi), northern mountain sucker (Catostomus platyrhynchus), northern pikeminnow (Ptychocheilus oregonensis), redside shiner (Richardsonius balteatus), slimy sculpin (Cottus cognatus), torrent sculpin (Cottus rhotheus), Umatilla dace (Rhinichthys umatilla).

There are no endangered species in this system but Umatilla dace are considered a special concern species under Section 3 of the Species At Risk Act (SARA). Umatilla dace prefer the warmer lower elevation waters of the lower Similkameen. The proposed development is however in the colder water higher elevation upper portion of the river which is fed by streams from the East Cascade Mountains. The mottled sculpin in the Columbia River system is considered endangered or threatened under Section 1 of the SARA. However, current populations in the Similkameen River system are considered at natural historic levels.

Stream habitat immediately adjacent to the property consists of cascade-glide habitat with dominant cobble and large gravel substrate. Cover component consist of some larger boulders and large amounts of overhanging vegetation from Douglas fir and Ponderosa pines on the south bank of the river and cottonwood and ponderosa pine on the north bank. The river provides habitat for various life history stages for the above mentioned species that includes: spawning, incubation and rearing habitats.

Much of the area immediately surrounding the property is somewhat developed with mixed commercial & single family homes as well as roads. The subject property is municipal run campground. A disturbed 5 to 10 m riparian strip is found along the south bank of the river adjacent to the campground; the north bank also contains a similar 5 – 10 riparian strip. The native riparian buffer consists of black cottonwoods, Douglas fir and Ponderosa pine. A man-made berm or reinforced dyke was noted along the river adjacent to the subject property, other adjacent properties in the area as well as much of the within much of the municipal boundaries. The berm was created to minimize flooding in the area. Understory vegetation is minimal but consists of snowberry, roses, Oregon grape and Douglas maple.

The proposed development is the construction of a 140 m² washroom facility. All construction and excavation is located outside: 1) the 15 m streamside protection and enhancement area (SPEA) or RAPR setback as well; and 2) the 30 m riparian assessment area. The structure will be placed in an existing gravel parking/common area which has been historically disturbed.

2. Results of De	-		ent		
Refer to Chapter 3 of A				Date:	June 20, 2022
Description of Wat					
Stream Wetland	Similkam	een			
Lake					
Ditch					
Number of reaches	1	1			
Reach #					
and only provide	nd slope and widths if a d	litch)		if water body is a	a stream or a ditch,
starting po		Gradien		Cassidy, hereby certify tha	t
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•	61				e under the Fish Protection Act, art of the assessment of the
	65		develo	opment proposal made by	
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downstrea	64		and m	y assessment is set out it	this Assessment Report; and
	<del>55</del>	<u> </u>			of the development proposal, I methods set out in the Schedule
	62		to the	Riparian Areas Regulatio	n.
	65	.6			
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Total: minus high /lo		0.6	-		
me		C/P S/P	-		
Channel Ty		xx	-		
Site Potential Veg	getation Type Yes No	· · · · · · · · · · · · · · · · · · ·	ultiple polys	if No About Silings	and of ODVT data have
SEVI Folygons		I, David Cassidy, her			ne set of SPVT data boxes
		a) I am a qualified e Regulation made b) I am qualified to made by the devi c) I have carried out set out in this Ass	environmenta under the F carry out this eloper <u>Tow</u> t an assessr sessment Re	al professional, as defined Fish Protection Act, is part of the assessment of in of Princeton; ment of the development peport; and	of the development proposal proposal and my assessment is
					posal, I have followed the
Polygon No:	<del></del>			in the Schedule to the Rip ed if other than TR	parian Areas Regulation,
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SPVT Type [					
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SPVT Type					
Onlynna No.	1	r			
Polygon No: SPVT Type		Metho	d employe	ed if other than TR	
Zone of Sensitivit	y (ZOS) and	resultant SPEA			
Segment			ved, each	side is a separate s	egment. For all water
No:	bodi	es multiple segme	nts occur	where there are mul	tiple SPVT polygons
LWD, Bank and Stability	Channel 15 ZOS (m)				

Litter fall and insect drop ZOS (m)	15						
Shade ZOS (m) max	0 (30)	South bank	Yes		No	XXX	7
Ditch Justification desc				nanmade.		1	
no significant he							
Ditch Fish Yes	No	If no	n-fish t	earing inso	ert no fi	sh	
Bearing				ng status re	eport		
SPEA maximum 15	(For dito	ch use table3-7	7)				
No:		stream involve ıltiple segment					t. For all water PVT polygons
LWD, Bank and Channel Stability ZOS (m)							
Litter fall and insect drop ZOS (m)							
Shade ZOS (m) max		South bank	Yes	1	10		
SPEA maximum	(For ditch	use table3-7)					
No:		stream involve Iltiple segment					t. For all water PVT polygons
LWD, Bank and Channel							
Stability ZOS (m)							
Litter fall and insect drop	J						
ZOS (m)		0. 0. 0. 1	V T			T T	
Shade ZOS (m) max SPEA maximum	/Eor ditah	South bank	Yes	1 1	lo		
OF LA MAXIMUM	T (Lot diffu	use table3-7)					

### I, David Cassidy, hereby certify that:

- a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the Fish Protection Act;
- b) | am qualified to carry out this part of the assessment of the development proposal made by the developer Town of Princeton;
- I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
  In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to
  the Riparian Areas Regulation.

### **Comments**

- Channel Type Clarification: The assessment methods Figure 3-4 is limited to 30 m channel width, although the graph should read up to 25 m...according to the scale from 0 to 20 m. Due to the lack of direction in the methodology, VE extrapolated the channel type by extending the graph and trend lines up to a 50 m wide channel width. The resulting 0.6% slope and 46.7 m wide channel indicates a cascade-pool (see attached Figure with modified chart).
- VE also reviewed the Fish & Fish Habitat Inventory Site Card Field Guide (April 2008) and prepared by MOE Ecosystems Branch. Page 28 identifies a visual classification guide table for determining stream morphology. The stream bed material of the Similkameen consists primarily of cobble but also contains small and large boulders which were noted as round (alluvial) and not lag boulders. According to the table, riffle-pool systems do not contain boulders; only cascade-pool and step-pools contain boulders. Furthermore, the table also indicates that cascade-pool systems have either absent or minor presence of LWD. VE noted in the field that LWD was absent from the immediate stream banks in the survey area. LWD was noted washed up on large channel islands in the center of the stream. During non high peak flows, these log jams / debris flows would not provide cover for fish. A larger search of the river through the area reveals little to no LWD along the stream bank. As such this would further classify the channel type as cascade-pool.
- VE further reviewed the Forest Renewal BC: Watershed Restoration Technical Circular Document No. 7 (July, 1996). This document also provides several visual classification tables for channel type. In particular Table 3Aiv (page 28) Cascade-Pool (CPb) best describes the channel conditions near the site.

Conditions of RAPR Section 10(4) have been met as the development falls well outside the 15 m SPEA setback as well as the 30 m riparian assessment area. As such, the development is not limited by the 15 m setback.

Section 3: Site Plan



1 cm = 5.4 m

0		

## Section 4. Measures to Protect and Maintain the SPEA

### Danger Trees

### L. David Cassidy, hereby certify that:

- I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
- f) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Town of Princeton</u>:
- g) Thave carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal. I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

### 2. Windthrow

### 1. David Cassidy, hereby certify that:

- a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act:
- I am qualified to carry out this part of the assessment of the development proposal made by the developer Town of Princeton;
- c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal. I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

### Slope Stability

### I. David Cassidy, hereby certify that:

- 1 am π qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
- I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Town of Princeton</u>;
- c. Thave carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal. I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

### 4. Protection of Trees

### I. David Cassidy, hereby certify that:

- a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
- I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Town of Princeton</u>;
- c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal. I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

### Encroachment

### I. David Cassidy, hereby certify that:

- a. I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act.
- I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Town of</u> Princeton;
- c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal. I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

### 6 Sediment and Erosion Control

### l. David Cassidy, hereby certify that:

- I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Reparam Areas Protection Act;
- b. I am qualified to carry out this part of the assessment of the development proposal made by the Town of Princeton;
- 1 have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal. I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

### Stormwater Management

### I. David Cassidy, hereby certify that:

- I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Reparam Areas Protection Act;
- I am qualified to carry out this part of the assessment of the development proposal made by the developer Town of Princeton;
- c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal. I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

### Floodplain Concerns (highly mobile channel)

### I. David Cassidy, hereby certify that:

- I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
- b. I am qualified to carry out this part of the assessment of the development proposal made by the developer Town of Princeton:
- c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

- Danger Trees There are several large trees within the 15 m SPEA setback & 30 m assessment area. All trees appear healthy however, they should be inspected by the municipality annually for any hazards.
- 2) Windthrow Windthrow is not expected to be a problem as no forest habitats will be removed for the development.
- 3) Slope stability The area of the proposed development is relatively flat.
- 4) Tree Protection in the SPEA The development is outside the tree root protection zone of all trees within the 15 m SPEA setback as well as the 30 riparian assessment area. In addition, no tree are proposed for removal.
- 5) Encroachment in the SPEA There will be no encroachment into the 15 m SPEA for the development as the proposed structure is ~ 21 m from the SPEA setback.
- 6) Sediment & Erosion Control Sediment delivery is not anticipated to be a significant problem as the areas of development are relatively flat.
- 7) Stormwater Management Stormwater will be located on site and or will use existing drainage methods. If any new perimeter drainage systems are required for the new structure such as tiles or rock pits etc., they must be located outside the 15 m SPEA
- 8) Floodplain concerns The property is within the floodplain of the Similkameen River. Much of the stream bank throughout the town of Princeton has been diked to protect the existing home, business and infrastructure developments (see additional attached picture). Diking is noticeable throughout the project site.

If applicable, the structure will follow the guidelines within the Town of Princeton Flood Protection bylaw Section 6.12 of the Zoning Bylaw No. 880, 2013 (noted below) will ensure that future proposed structure(s) meets their floodplain requirements:

### Flood Protection

- 6.12 No person shall construct, alter, locate or use a building or structure:
- 1 within 7.6 m (25 ft) of the landside toe of the Tulameen and Similkameen River Dyke, within 15 m (49 ft) of the natural boundary of any other watercourses; and
- .2 with the underside of the floor system of any area used for habitation, business or storage of goods lower than 0.6 m (2 ft) above the 200 year flood level when it can be determined, or if not, less than 3 m (10 ft) above the natural boundary of any watercourse.

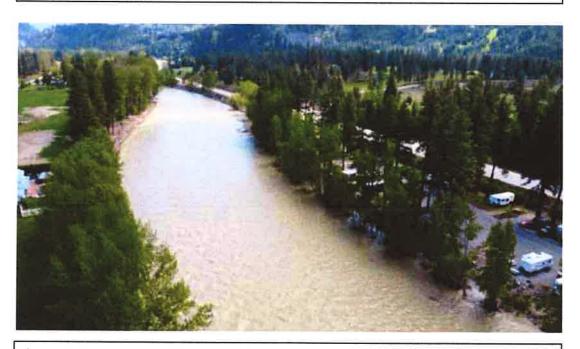
# Section 5. Environmental Monitoring

Full-time monitoring is not anticipated as the risk to the 15 m SPEA setback is very low and all work is located outside the 30 m assessment area. Furthermore, much of the 30 m assessment area has been previously development.

# Section 6. Photos



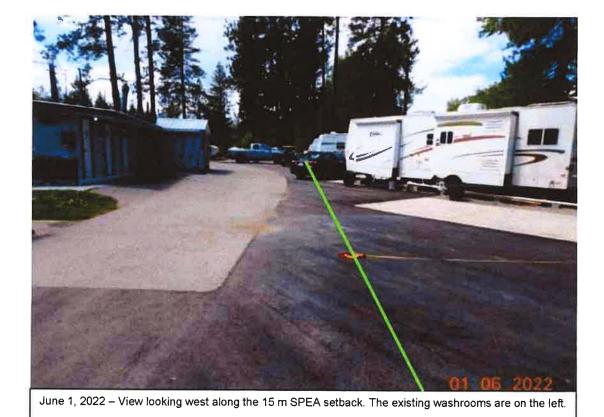
June 1, 2022 – Drone view looking west and upstream along the active floodplain/stream boundary of the Similkameen River adjacent to the property. The stream boundary is noted as the edge of large rooted vegetation.



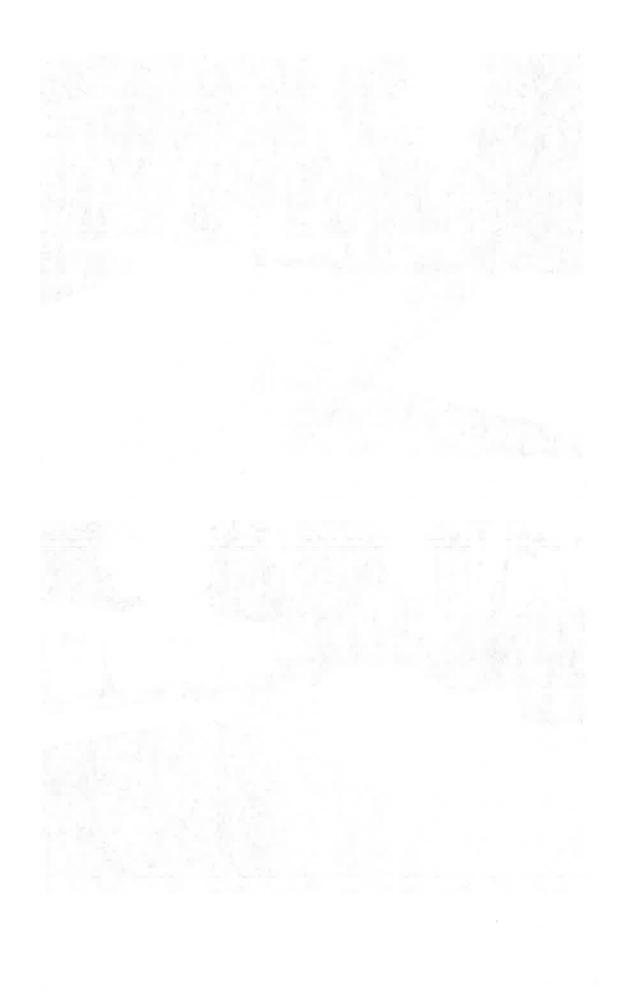
June 1, 2022 – Drone view looking east and downstream along the Similkameen River. Cottonwoods mark the stream boundary / active floodplain. This picture was also taken during the freshet and shows the location of the typical high water directly adjacent to large rooted vegetation.

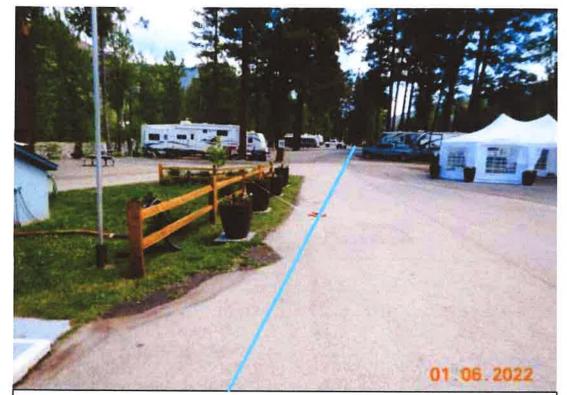


June 1, 2022 – View looking east along the 15 m SPEA setback (green line) approximately. Most of the 15 m riparian setback is campground with several large pines remaining.



Valley Environmental - 365 Highway 3 Riparian Assessment





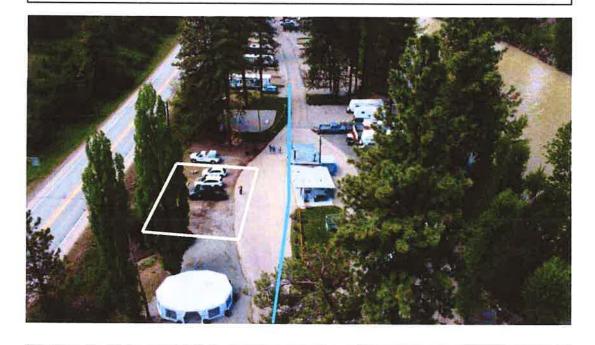
June 1, 2022 - View looking east along the 30 m riparian assessment area (blue).



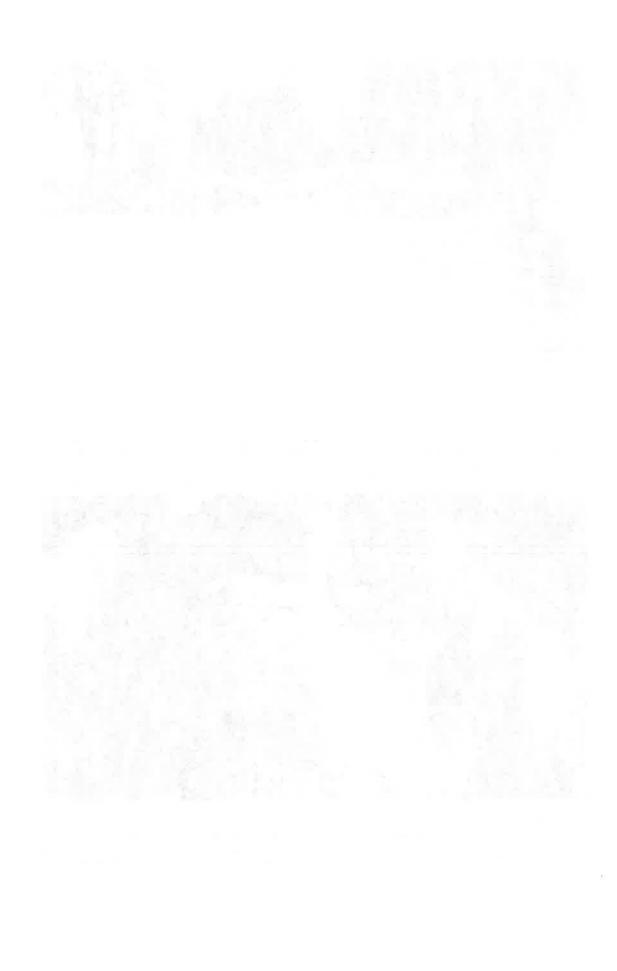
June 1, 2022 - View looking west along the 30 m riparian assessment area. The proposed washrooms are an additional 7 m outside (left) the assessment area.



June 1, 2022 – View looking westward towards the location of the proposed washrooms. The structure is located in an existing parking area / common space.



June 1, 2022 – Drone view looking westward toward the proposed washroom site (white) and 30 m riparian assessment area (blue). Highway 3 is on the left and the Similkameen River is on the right.



# Section 7. Professional Opinion

Qualified Environmental Professional	opinion on the development	proposal's riparian
assessment.		•

Date	June 20, 2022
1. I/W	/e <u>David Cassidy</u> , RPBio.

- hereby certify that:
  - a) I am/We are qualified environmental professional(s), as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
  - b) I am/We are qualified to carry out the assessment of the proposal made by the developer <u>Town of Princeton</u>, which proposal is described in section 3 of this Assessment Report (the "development proposal"),
  - I have/We have carried out an assessment of the development proposal and my/our assessment is set out in this Assessment Report; and
  - d) In carrying out my/our assessment of the development proposal, I have/We have followed the specifications of the Riparian Areas Protection Regulation and assessment methodology set out in the minister's manual; AND

2. As quali that:	fied env	rironmental professional(s), I/we hereby provide my/our professional opinion
	a)	the site of the proposed development is subject to undue hardship, (if applicable, indicate N/A otherwise) and
		(ii applicable, maleate IVA otherwise) and
	b)	the proposed development will meet the riparian protection
		standard if the development proceeds as proposed in the report and complies with the measures, if any, recommended in the report.