



STAFF REPORT

DATE: January 3, 2023

FILE: 0540-04 EASC

TO: Chair and Directors
Electoral Areas Services Committee

FROM: Dave Leitch
Chief Administrative Officer

RE: **ESA DEVELOPMENT PERMIT** **Foreshore** **Watercourse** **Eagle** **Heron**

PLANNING FILE NO.: 3060-20 / DP 6D 22

FOLIO NO.: 772 01349.630 **PID No.:** 017-539-421

APPLICANT: Toan Nguyen

LEGAL DESCRIPTIONS: Lot 3, District Lot 90, Comox District, Plan VIP53282

CIVIC ADDRESSES: 3782 Island Hwy. S., Campbell River BC V9H 1M3

OCP BYLAW: Bylaw No. 1857 "Oyster Bay – Buttle Lake OCP Bylaw 1996"

OCP DESIGNATION: Residential

ZONING BYLAW: Bylaw No. 1404 "Campbell River Area Zoning Bylaw, 1991"

ZONE: Country Residential Three (CR-3)

PURPOSE

To consider a development permit application to allow the placing of fill within 30.0 metres from the top of bank of a watercourse connected to fish habitat, as identified by a Qualified Environmental Professional (QEP).

POLICY ANALYSIS

Sections 488 - 491 of the *Local Government Act* (LGA) authorize a local government to manage different types of development that occur in specific areas. The LGA allows a local government to designate development permit areas and establish guidelines within official community plans for protection of the natural environment. Pursuant to Part 404.1 of Bylaw No. 1857, "Oyster Bay – Buttle Lake OCP Bylaw, 1996", development within 30.0 metres from top of bank of a stream connected to fish habitat as identified in the Regional District's Sensitive Habitat Atlas, or as defined by Riparian Areas Regulation (RAR), requires an Environmentally Sensitive Areas Development Permit (ESA DP) prior to the commencement of development activities.

EXECUTIVE SUMMARY

An application has been received to allow the placing of clean fill on an undeveloped lot situated at 3782 Island Hwy. S. As the proposed fill placement is located within 30 metres of the top of bank of a watercourse connected to fish habitat and therefore within an environmentally sensitive development permit area (DPA), an environmentally sensitive area development permit (ESA DP) is required.

The subject property is designated as Residential in the Oyster Bay–Buttle Lake Official Community Plan and is zoned Country Residential Three (CR-3). The parcel is approximately 1.04 hectares in area and is bounded by the Island Highway to the east and country residential lots on the remaining three sides, only the lot to the north being developed.

It is proposed that the placing of clean fill on the property to improve drainage on the property will be located clear of the 18-metre Streamside Protection and Enhancement Area (SPEA) as shown on the diagram below. A Riparian Areas Regulation assessment report for this property has been prepared by Cindy Hannah RPBio, who has made recommendations for the protection of fish habitat. These recommendations, including fencing of the SPEA, sedimentation control and post-development environmental monitoring, will be incorporated into the ESA DP document. The RAR report and the recommendations contained within provide support for the issuance of the ESA DP, which is attached for the Committee's consideration.

RECOMMENDATIONS:

1. THAT the report from the Chief Administrative Officer be received.
2. THAT the Committee recommend that the environmentally sensitive area development permit DP 6D 22 (Nguyen), as attached in staff report dated January 3, 2023 be approved, and THAT the Corporate Officer be authorized to execute the permit.

Respectfully:



Dave Leitch
Chief Administrative Officer

BACKGROUND

The subject property is located within the Oyster Bay – Buttle Lake Electoral Area (Area D) in the Shelter Point neighbourhood and is zoned Country Residential Three (CR-3). The parcel is approximately 1.04 hectares in area and is bounded by the Island Highway to the east and country residential lots on the remaining three sides, only the lot to the north being developed.

The placement of clean fill on the property to improve drainage patterns prior to development triggers the requirement for an environmentally sensitive areas development permit. As part of this application, a Riparian Areas Regulation assessment report prepared by Cindy Hannah, RPBio, has established an 18-metre SPEA along the north and west boundaries of the parcel, where channelized drainage from Caddisfly Creek flows towards the ocean. The fill placement proposal meets all applicable zoning requirements.

PLANNING ANALYSIS***Environmentally Sensitive Areas Development Permit***

An RAR assessment report dated March 7, 2019 was completed by Cindy Hannah RPBio. This assessment report confirms that fish access to Caddisfly Creek is highly constrained due to the MoTI culverts that connect the drainage to the ocean at two locations. A Coho salmon smolt was detected while electrofishing in the southwest part of the channel where better stream flows and bed conditions were observed, however the potential for spawning at this location is limited. At other locations within the channel, low flows with evidence of standing water likely results in oxygen depletion during the summer months.

In the report, the QEP has indicated that snow fencing be installed during development (fill placement) activities to protect the SPEA from encroachment and subsequently a permanent fence or hedge will be required to prevent future such encroachment. In addition, general measures to prevent sedimentation should be undertaken, such as moving soil during dry periods, operating machinery on stable ground only and covering exposed soil during periods of wet weather. Under RAR, a post development report is required to provide feedback on the measures taken, that the measures were implemented appropriately and the adequacy of the measures in protecting the SPEA. In light of the assessment report and recommendations pertaining to the proposed development, staff offer support for issuance of the development permit.

The attached permits outline terms and conditions related to the development, including those contained in the Riparian Area Assessment Reports. The conditions outlined within the development permits address issues related to the protection of the aquatic habitat. The development permits and the recommendations set out do not constitute an approval under the federal Fisheries Act for the harmful alteration, disruption, or destruction (HADD) of fish habitat. Actions that result in HADD may result in a violation under the *Fisheries Act*.

FINANCIAL IMPLICATIONS

Applicable fees have been collected for this application under the Planning Procedures and Fees Bylaw No. 5.

LEGAL IMPLICATIONS

The report and development permits as presented are in compliance with the *Local Government Act* (LGA) and regional district bylaws. Development permits are permitted only in certain circumstances under Sections 488 - 491 of the LGA. The authority under this subsection must be exercised only in accordance with the applicable guidelines specified under this section in an official community plan

INTERGOVERNMENTAL/REGIONAL IMPLICATIONS

There are no intergovernmental/regional implications associated with this ESA DP as all works are proposed within the property boundaries.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS

Citizen/public relations implications associated with this ESA DP should be minimal as all site development and construction works are contained within the boundaries of the property.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS

Interdepartmental involvement associated with this development permit is limited; however, the processing of the ESA DP will require both planning and legislative staff resources.

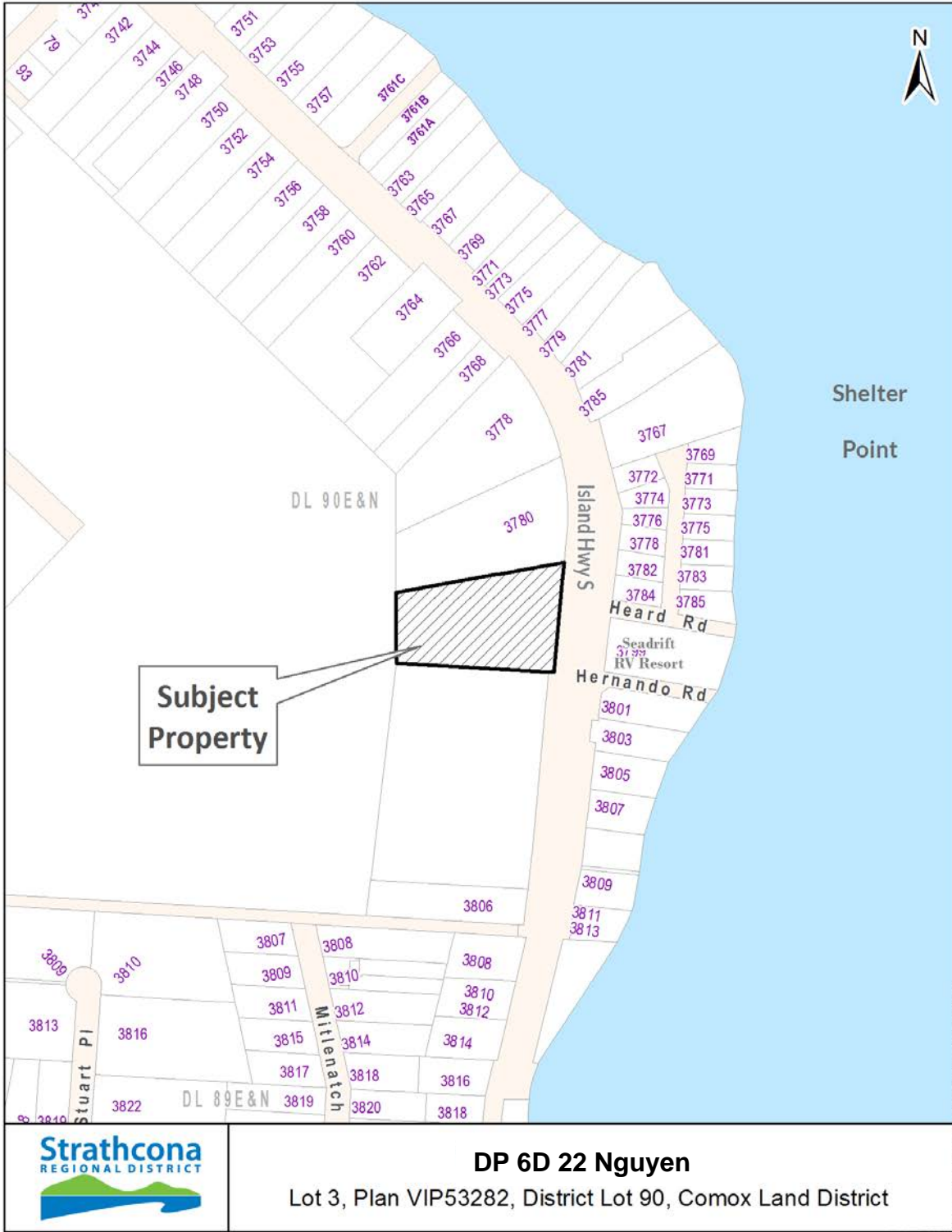
Submitted by:

A handwritten signature in black ink that reads "A. Nelson". The signature is written in a cursive style with a long, sweeping tail on the letter "n".

Aniko Nelson
Senior Manager, Community Services

Prepared by: *J. Neill, Planner*

Attachment: ESA Development Permit DP 6D 22



Location Plan



Rear area of fill



Fill area looking east



SPEA along North boundary



Environmentally Sensitive Areas Development Permit

FILE: 3060-20/ DP 6D 22

TO: Toan Nguyen (the “Applicant”)

1. This development permit (DP 6D 22) is issued subject to compliance with all of the bylaws of the regional district applicable thereto, except as specifically varied or supplemented by this permit for ***the placing of clean fill within 30.0 metres of the top of bank of a stream connected to fish habitat.***

2. This development permit applies to only those lands within the regional district on the property described below:

Legal Description: Lot 3, District Lot 90, Comox District, Plan VIP53282

Parcel Identifier (PID): 017-539-421 **Folio:** 772 01349.630

Civic Address: 3782 Island Hwy. S. Campbell River, BC

3. The land described herein shall be developed strictly in accordance with the following terms and conditions and provisions of this permit, including Schedule A and Schedule B:

a) All future development activities shall take place in accordance with the site plan shown as Schedule A and the recommendations contained within Schedule B - Riparian Area Assessment Report, prepared by Cynthia Hannah, RPBio. dated March 7, 2019. These recommendations include, but are not limited to:

- i) Prior to the commencement of development, the 18-metre Streamside Protection and Enhancement Area (SPEA) must be clearly flagged or staked to protect the vegetated area of the SPEA from encroachment.
- ii) The project biologist is to be notified three days prior to beginning construction so that site documentation of development can occur.
- iii) No construction, land altering activities including gardening is to take place within the vegetated area of the 18-metre SPEA. A suitable fence (such as split-rail) is to be constructed on the SPEA boundary to prevent future encroachment.
- iv) During construction, exposed soils outside of the work area are to be covered with straw and/or mulch to prevent sedimentation of the watercourse.
- v) A post-construction site inspection will be required to ensure that the SPEA has been protected.

b) As per Section 5 ‘Environmental Monitoring’ of the Assessment Report, a follow-up report prepared by a Qualified Environmental Professional (QEP) shall be submitted verifying that the requirements stated within the Assessment Report have been met during the development project.

c) All development activities shall occur during periods of dry weather.

d) No sediment, manure or siltation runoff is permitted within the riparian setback area. Any spoil piles must be located south of the building footprint and away from the SPEA so that they do not pose a sedimentation risk. Cover spoil piles with poly sheeting or tarps during rain events.

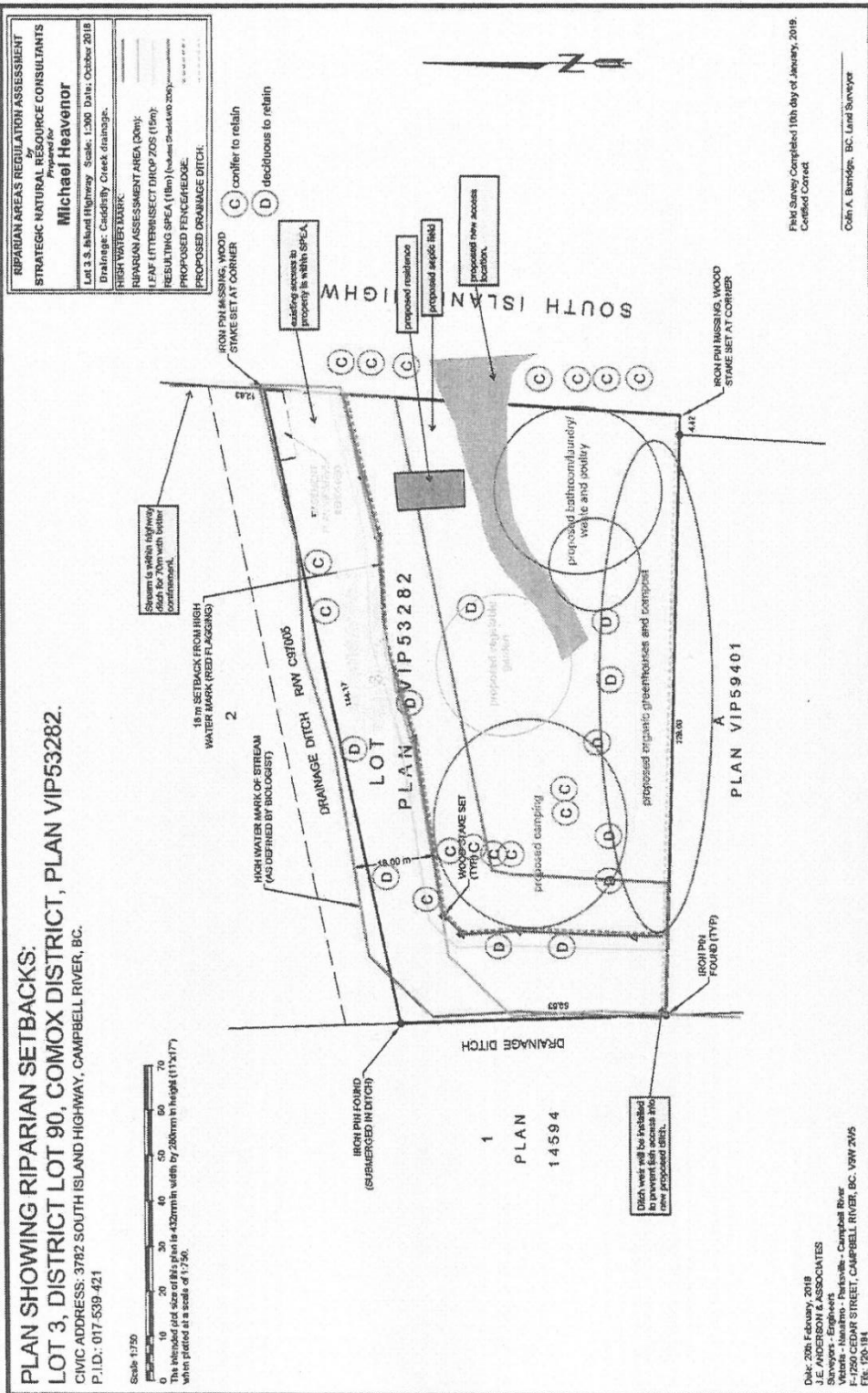
- e) Permanent exposed soil areas and erosion-prone slopes that may potentially erode into the watercourse are to be seeded immediately or covered with geotextile.
 - f) Driveway surfacing shall be gravel to permit the infiltration of stormwater. Ensure that roof leaders and perimeter drains infiltrate the ground to avoid runoff.
 - g) An emergency spill kit must be kept on site at all times.
 - h) No materials to be stored which may be deleterious to the water quality of the riparian environment, such as pesticides, herbicides or fertilizers, within the riparian setback.
 - i) Careful maintenance of any liquid waste management system is required.
 - j) The property owner has completed a site declaration in accordance with the *Environmental Management Act* indicating that the owner is not aware of Schedule 2 activities having taken place on the site.
4. This development permit (DP 6D 22) shall lapse if development is not substantially commenced within **two (2)** years of the issue date of this permit (see below). Lapsed permits cannot be renewed; therefore, application for a new development permit must be made, and permit granted by the Strathcona Regional District board, in order to complete the remainder of the work.
5. This permit is **NOT** a building permit.

DEVELOPMENT PERMIT DP 6D 22 approved the ___th day of _____, 2022.

Corporate Officer

Date: _____

Schedule A



Schedule B

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Riparian Areas Regulation: Assessment Report

Please refer to submission instructions and assessment report guidelines when completing this report.

Date V.2 2019-04-26

I. Primary QEP Information

First Name	Cynthia	Middle Name		
Last Name	Hannah			
Designation	RPBio	Company	Strategic Natural Resource Consultants	
Registration #	1275	Email	channah@snrc.ca	
Address	321-1180 Ironwood Street			
City	Campbell River	Postal/Zip	V9W 5P7	Phone # 250-287-2246
Prov/state	BC	Country	Canada	

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

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

III. Developer Information

First Name	Michael	Middle Name		
Last Name	Heavenor			
Company	N/A			
Phone #	250-287-1878	Email	mwheavenor@hotmail.com	
Address	Box 302			
City	Campbell River	Postal/Zip	V9W 5B1	
Prov/state	BC	Country	Canada	

IV. Development Information

Development Type	Other: Rezoning			
Area of Development (ha)	1.04	Riparian Length (m)	220	
Lot Area (ha)	1.04	Nature of Development	New	
Proposed Start Date	2019-02-25	Proposed End Date	2020-12-31	

V. Location of Proposed Development

Street Address (or nearest town)	3782 South Island Highway					
Local Government	Strathcona Regional District					
Stream Name	Unnamed (Caddisfly Creek)					
Legal Description (PID)	017-539-421			Region	1	
Stream/River Type	Stream, Ditch			DFO Area	South Coast	
Watershed Code	Uncoded 10, 343061, 5534330					
Latitude	49	56	25	Longitude	125	11 17

Completion of Database Information includes the Form 2 for the Additional QEPs, if needed. Insert that form immediately after this page.

FORM 1
Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Table of Contents for Assessment Report

	Page Number
1. Description of Fisheries Resources Values	3
2. Results of Riparian Assessment (SPEA width)	6
3. Site Plan	10
4. Measures to Protect and Maintain the SPEA (detailed methodology only).	
1. Danger Trees.....	11
2. Windthrow.....	11
3. Slope Stability.....	11
4. Protection of Trees.....	11
5. Encroachment	12
6. Sediment and Erosion Control.....	12
7. Stormwater Management.....	13
8. Floodplain	13
5. Environmental Monitoring	14
6. Photos	15
7. Assessment Report Professional Opinion	18

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Section 1. Description of Fisheries Resources Values and a Description of the Development proposal

(Provide as a minimum: Species present, type of fish habitat present, description of current riparian vegetation condition, connectivity to downstream habitats, nature of development, specific activities proposed, timelines)

Stream Description and Fish Habitat

The property is located within an unnamed drainage (locally known as Caddisfly Creek). The drainage appears to be entirely contained within man-made ditches that source from an upland forested area. There is little existing information on the drainage. It drains stormwater from the Mittlenatch subdivision to the south and west of the subject property and from the Finch Road area to the north along Jubilee Parkway.

The subject property is bound by channelized sections of Caddisfly Creek on the west and north property boundaries.

An initial assessment of the subject property was conducted on November 6, 2018 by Cindy Hannah, RPBio and Mario Cottone, BIT of Strategic Natural Resource Consultants Inc (SNRC). At that time fish access into the seasonal waterway (Caddisfly Creek) appeared to be highly constrained due to culverts that drain from Highway 19A and empty directly into the ocean at two locations (i.e. the stream has been channelized and connects to the ocean via two channels/culverts). Subsequently fish sampling was undertaken to determine if the stream was fish bearing and the RAR applicable.

The main stream channel flows within a 900mm corrugated metal pipe (CMP) culvert for 130m from Highway 19A connecting directly to the ocean. During high flows Caddisfly Creek flows within a divergence channel to a secondary channel along the north property boundary of the subject property and crosses the highway and the downslope residential area through a 150m long 1200mm CMP. Upstream of the highway, the streams are entirely within ditches/channelized (Figure 1), linear in nature with poor habitat complexity in the vicinity of the property. In general, much of the watershed appears to be in a similar condition, all streams appear to have been ditched/channelized.

The required sampling permits were acquired and sampling was conducted on December 13, 2018. Water flows were medium and the instream water temperature was 6.5C. An unnamed tributary of Caddisfly Creek that drains along the vacant property between the end of Mittlenatch Road and Stuart Place was sampled using a Smith-Root backpack electrofisher and Gee type minnow traps using dry cat food as bait. A stickleback (Photo 1 - this species is not recognized as fish under the RAR) was located readily (11 electrofishing seconds). Sampling continued and numerous stickleback were sampled. A coho salmon smolt was sampled after 620 electrofishing seconds. Sampling was conducted within this channel as it provided the best quality potential salmonid habitat (te stream is 2-3m wide, better stream flows with predominantly gravel substrate with some fines/cobble) (Photo 2). Sampling ceased once the coho was located. There is limited spawning habitat for coho salmon within the channel to the south of the property where the coho smolt was located (Photo 3).

It is likely that the stream has very low fish numbers given the seasonal nature of the stream and difficult fish access from the ocean due to the long culvert length.

Where the channel flows north towards the subject property and adjacent to the property itself, the substrate is 100% fines/mud with a 0-1% gradient and is completely glide habitat. It has been confined within a wide shallow swale between 6 and 8m wide with poorly defined stream banks. This

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

would provide rearing/refuge habitat for fish (Photos 4-6) but is not suitable for spawning. Due to the low flow with evidence of standing water, oxygen depletion likely occurs during periods with low precipitation and warmer temperatures.



Figure 1, Location of subject property and Caddisfly Creek with direction of flow shown.

There is a low lying ditch/swale along the south side of the property. The ditch is shallow with a fines substrate that holds water during the winter due to the high water table in the area. The ditch varies between being a wide swale with sedges at the top near the highway (Photo 7) to a narrow confined ditch <1m wide (Photo 8). It does not appear to ever have much flow. There is no access for fish from the west ditch into the south ditch due to poor connectivity between the two ditches (Photo 9). The south ditch has no slope and consists of standing water at the level of the water table on the property. The ditch does dry completely during periods of low precipitation. Fish sampling within the ditch was conducted April 17, 2019 to confirm the ditch as non-fish bearing. Sampling for 290 electrofishing seconds in the south ditch did not locate any fish. Stickleback were located in the north ditch, but no fish were located in the west ditch in the vicinity of the confluence of the south ditch or south of that point for approximately 100m (215 additional electrofishing seconds).

Two trenches for services were excavated in 2018 that infilled with water when the water table rose (Photos 10 and 11). The intention will be to fill both trenches once site conditions allow as they are not functioning as ditches and are not intended to be ditches. The original south ditch will be retained as it is.

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Riparian Vegetation Condition

At the time that the property was acquired it was in a disturbed state. There was rubble/fill deposited south of the easement (driveway for the neighbouring property to the north). The site had been mostly cleared in 2005 (Photo 12) and has since infilled in dense blackberry. The riparian area immediately adjacent to the channel is vegetated predominantly in red alder and Himalayan blackberry with sedges growing within the channel. There are scattered mature second growth trees throughout the property and riparian area including western red cedar, red alder and big leaf maple (Photos 13-14).

Some clearing has occurred to clean up the site for access and use (a recreational trailer is parked on site). Most of the clearing has been done outside of the 30m assessment area, although the dense blackberry was removed from the easement beyond an existing gravel driveway to allow access to back of the property.

Proposed Development Description

The proposed development includes the rezoning of the property from Country Residential 3 (CR-3) to Commercial 2 (C-2) under Bylaw No. 1404 Campbell River Area Zoning Bylaw, 1991, through the Strathcona Regional District. Subsequent to the rezoning, the proposed development includes the construction of the owner's dwelling with the intention of running a small commercial garden sales business with year round greenhouses. The vision also includes having 20 campsites to rent during July and August, establishing 4 long term RV sites and 2 bed and breakfast units or rental cabins. As this assessment was completed for the rezoning of the property, detailed development plans for the site have not been created.

Currently the property is accessed off of the easement for 3780 South Island Highway (Easement plan VIP58792 #EH054093), but visibility is poor at the highway in this location and it is therefore proposed to move the driveway further south where the current bus stop is. The bus stop would then be moved south as well to accommodate both safer access to the property and maintain the bus route stop. It is proposed to construct the new access in the summer of 2019 which can be completed under the current CR-3 zoning.

Infrastructure that will be installed includes a 2 tank septic system and dispersal field (proposed location is to the east of the main residence, west of the highway, constructed in the summer of 2019, the tanks will be upgraded during future phases as required/approved) and well (proposed location at the east side of the property), a utility corridor for access to campsites and cabins. The vision at the time of this report is for the main residence to be constructed to the north and east of the property with driveway and farm gate sales point south of the house. The development of camping and cabins would be on the east side of the property with proposed future sites south of the driveway. Several greenhouses, and gardens will be established with the intention of growing organic produce for sale.

FORM 1
Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Section 2. Results of Riparian Assessment (SPEA width)

Attach or insert the Form 3 or Form 4 assessment form(s). Use enough duplicates of the form to produce a complete riparian area assessment for the proposed development

The detailed assessment of Caddisfly Creek adjacent to the subject property determined that the SPEA is 18m. The stream is entirely confined within a man made ditch. It was noted during the assessment that the area along the west side of the property in the vicinity of the confluence with another ditch from the north is overwidened compared to other sections of the channelized stream. As such it was decided to measure the channel where it is confined to a more stream like channel upstream of the Highway 19 culvert inlet north of the property.

The south ditch is a low lying area with very little flow which has water in it based on the surrounding water table. There is no access for fish into it and it does not provide suitable habitat for fish and is considered non-fish bearing with a SPEA of 2m.

2. Results of Detailed Riparian Assessment Caddisfly Creek

Refer to Chapter 3 of Assessment Methodology

Date: 2018-12-13

Description of Water bodies involved (number, type)

1 stream, 1 ditch

Stream	X
Wetland	
Lake	
Ditch	
Number of reaches	1
Reach #	1

Channel width and slope and Channel Type (use only if water body is a stream or a ditch, and only provide widths if a ditch)

	Channel Width(m)		Gradient (%)	
starting point	5.5			I, <u>Cynthia Hannah, RPBio</u> , hereby certify that: a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ; b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavenor</u> ; c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and d) 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.
upstream	6.8	high	1%	
	6.5			
	6.7			
	6.2			
	6.7			
downstream	4.8	low	1%	
	5.5			
	5.8			
	6.1			
	5.2			
Total: minus high /low	54.2			
mean	6.0			
	R/P	C/P	S/P	
Channel Type	X			

Site Potential Vegetation Type (SPVT)

Yes No

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

SPVT Polygons	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tick yes only if multiple polygons, if No then fill in one set of SPVT data boxes		
	I, <u>Cynthia Hannah, RPBio</u> , hereby certify that: a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ; b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavener</u> ; c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and d) 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.				
Polygon No:	<input type="text" value="1"/>	Method employed if other than TR			
SPVT Type	<input type="text" value="LC"/>	<input type="text" value="SH"/>	<input type="text" value="TR"/>	<input checked="" type="checkbox"/>	
Polygon No:	<input type="text"/>	Method employed if other than TR			
SPVT Type	<input type="text" value="LC"/>	<input type="text" value="SH"/>	<input type="text" value="TR"/>		
Polygon No:	<input type="text"/>	Method employed if other than TR			
SPVT Type	<input type="text"/>	<input type="text"/>	<input type="text"/>		

Zone of Sensitivity (ZOS) and resultant SPEA

Segment No:	<input type="text" value="1"/>	If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons				
LWD, Bank and Channel Stability ZOS (m)	<input type="text" value="18"/>					
Litter fall and insect drop ZOS (m)	<input type="text" value="15"/>					
Shade ZOS (m) max	<input type="text" value="18"/>	South bank	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Ditch	Justification description for classifying as a ditch (manmade, no significant headwaters or springs, seasonal flow)					
Ditch Fish Bearing	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	If non-fish bearing insert no fish bearing status report	
SPEA maximum	<input type="text" value="18m"/>	(For ditch use table3-7)				

I, Cynthia Hannah, RPBio, hereby certify that:
 a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
 b) I am qualified to carry out this part of the assessment of the development proposal made by the developer Michael Heavener ;
 c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
 d) 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

The resulting SPEA of the stream is 18.0m

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

2. Results of Detailed Riparian Assessment South Ditch

Refer to Chapter 3 of Assessment Methodology

Date: 2018-12-13

Description of Water bodies involved (number, type)

1 stream, 1 ditch

Stream	
Wetland	
Lake	
Ditch	X
Number of reaches	1
Reach #	1

Channel width and slope and Channel Type (use only if water body is a stream or a ditch, and only provide widths if a ditch)

Channel Width(m)		Gradient (%)
starting point	1.3	I, <u>Cynthia Hannah, RPBio</u> , hereby certify that: e) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ; f) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavenor</u> ; g) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and h) 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.
upstream	1.1	
	1.1	
	1.2	
	1.1	
	1.2	
downstream	1.3	
	1.4	
	1.2	
	1.3	
	1.8	
Total: minus high /low	11.1	
mean	1.2	
Channel Type	R/P C/P S/P	

Site Potential Vegetation Type (SPVT)

SPVT Polygons	Yes	No	
		X	Tick yes only if multiple polygons, if No then fill in one set of SPVT data boxes
			I, <u>Cynthia Hannah, RPBio</u> , hereby certify that: e) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ; f) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavenor</u> ; g) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and h) 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.
Polygon No:	1		Method employed if other than TR
SPVT Type	LC SH TR		
		X	
Polygon No:			Method employed if other than TR
SPVT Type	LC SH TR		

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Polygon No:	<input type="text"/>	Method employed if other than TR
SPVT Type	<input type="text"/>	<input type="text"/>

Zone of Sensitivity (ZOS) and resultant SPEA

Segment No:	1	If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons					
LWD, Bank and Channel Stability ZOS (m)	2						
Litter fall and insect drop ZOS (m)	2						
Shade ZOS (m) max	2	South bank	Yes	<input type="text"/>	No	X	<input type="text"/>
Ditch	Justification description for classifying as a ditch (manmade, no significant headwaters or springs, seasonal flow)				Manmade with no significant headwaters. Holds water due to water table rather than surface runoff.		
Ditch Fish Bearing	Yes	<input type="text"/>	No	X	If non-fish bearing insert no fish bearing status report	See description in Section 1.	
SPEA maximum	2m	(For ditch use table3-7)					

I, Cynthia Hannah, RPBio, hereby certify that:

e) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;

f) I am qualified to carry out this part of the assessment of the development proposal made by the developer Michael Heavenor ;

g) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and

h) 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

The resulting SPEA of the south ditch is 2.0m

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Section 3. Site Plan

Insert jpg file below

Site Plan

A site plan follows this page. Included is a 1:300 scale site plan showing the ditch location and scaled sketch of the proposed development.

PLAN SHOWING RIPARIAN SETBACKS: LOT 3, DISTRICT LOT 90, COMOX DISTRICT, PLAN VIP53282.

CIVIC ADDRESS: 3782 SOUTH ISLAND HIGHWAY, CAMPBELL RIVER, BC.

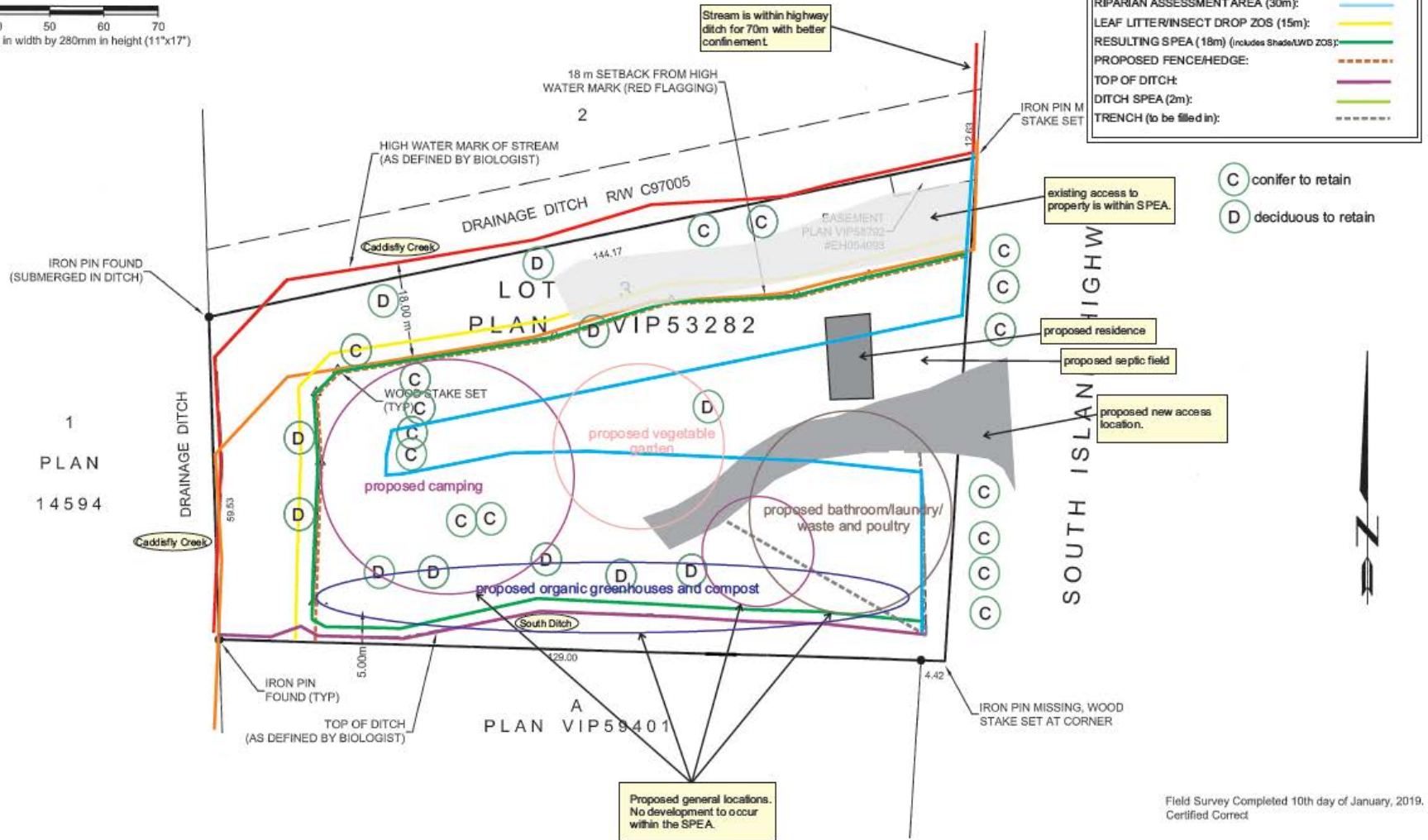
P.I.D.: 017-539-421

Scale 1:750



The intended plot size of this plan is 432mm in width by 280mm in height (11"x17") when plotted at a scale of 1:750.

RIPARIAN AREAS REGULATION ASSESSMENT by STRATEGIC NATURAL RESOURCE CONSULTANTS Prepared for Michael Heavenor	
Lot 3 S. Island Highway Scale: 1:300 Date: October 2018	
Drainage: Caddisfly Creek drainage.	
HIGH WATER MARK:	—
RIPARIAN ASSESSMENT AREA (30m):	—
LEAF LITTER/INSECT DROP ZOS (15m):	—
RESULTING SPEA (18m) (includes Shade/LWD ZOS):	—
PROPOSED FENCE/HEDGE:	—
TOP OF DITCH:	—
DITCH SPEA (2m):	—
TRENCH (to be filled in):	—



Date: 18th January, 2019
J.E. ANDERSON & ASSOCIATES
Surveyors - Engineers
Victoria - Nanaimo - Parksville - Campbell River
F-1250 CEDAR STREET, CAMPBELL RIVER, BC. V9W 2W5
File: 120-194

FORM 1
Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Section 4. Measures to Protect and Maintain the SPEA

This section is required for detailed assessments. Attach text or document files, as need, for each element discussed in chapter 1.1.3 of Assessment Methodology. It is suggested that documents be converted to PDF *before* inserting into the assessment report. Use your "return" button on your keyboard after each line. You must address and sign off each measure. If a specific measure is not being recommended a justification must be provided.

<ul style="list-style-type: none"> • Danger Trees 	<p>The property had been cleared at some point with younger vegetation present with scattered mature second growth trees. Trees will be retained outside of the SPEA where possible for aesthetic values. As this report is for the rezoning of the property, a danger tree assessment was not conducted. No trees were observed that appeared to be hazards, but once a more detailed plan is in place an assessment by a certified arborist may be required.</p>
<p>I, <u>Cynthia Hannah, RPBio</u>, hereby certify that:</p> <ul style="list-style-type: none"> i) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; j) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavenor</u>; k) 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 	
<ul style="list-style-type: none"> • Windthrow 	<p>As the clearing of the property will include mostly the understory vegetation, there are no new windthrow concerns at this point. Once a more detailed development plan is in place an assessment by a certified arborist may be required.</p>
<p>I, <u>Cynthia Hannah, RPBio</u>, hereby certify that:</p> <ul style="list-style-type: none"> a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavenor</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 Schedule to the Riparian Areas Regulation 	
<ul style="list-style-type: none"> • Slope Stability 	<p>The subject property has gentle slopes and there are no indications of slope stability issues related to the project as outlined in Table 3-8 of the Riparian Areas Regulation Assessment Methods.</p>
<p>I, <u>Cynthia Hannah, RPBio</u>, hereby certify that:</p> <ul style="list-style-type: none"> a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavenor</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 Schedule to the Riparian Areas Regulation 	
<ul style="list-style-type: none"> • Protection of Trees 	<p>Tree protection measures will be required for the larger trees within the SPEA. Temporary snow fencing (or something similar) should be installed along the drip line of the trees to protect the rooting area during any excavation works or changes in grades in the vicinity of existing trees. This prevents machinery or heavy material from compacting the roots. As this assessment is for the</p>

FORM 1
Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

	<p>rezoning of the property, specific tree protection measures cannot not be provided, however, given that trees will be retained where possible outside of the SPEA, the above mentioned protection measure should be considered for all retention trees on the property prior to any works.</p> <p>The temporary snow fencing should be placed at the drip line of the trees or at the SPEA boundary, which ever is farther from the stream.</p>
<p>I, <u>Cynthia Hannah, RPBio</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavener</u>;</p> <p>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 Schedule to the Riparian Areas Regulation</p>	
<ul style="list-style-type: none"> • Encroachment 	<p>A permanent fence or hedge to demarcate the SPEA will be required to prevent future encroachment into the SPEA. A simple split rail fence or cedar hedge are possible options to allow wildlife movement through the area. During construction snow fencing or similar must be installed to clearly demarcate the SPEA prior to any vegetation clearing to ensure that SPEA vegetation is kept intact. The SPEA has been surveyed and is marked with stakes with red flagging ribbon by JE Anderson and Associates. There are some potted flowers that have been placed beside the south ditch that will need to be moved outside of the 2m SPEA. If a campsite is established on the property, more robust fencing may be required to ensure that the SPEA area is protected. No trails are allowed to be constructed within the SPEA, but access through the SPEA perpendicular to the stream is allowed if access to adjacent trails is needed.</p>
<p>I, <u>Cynthia Hannah, RPBio</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavener</u>;</p> <p>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 Schedule to the Riparian Areas Regulation</p>	
<ul style="list-style-type: none"> • Sediment and Erosion Control 	<p>The property is gently sloped and has a high water table, making the west side of the property and any excavated holes/trenches etc wet during the winter months. Construction should occur during drier periods to minimize the risk of sedimentation into the stream. The following recommendations are for general measures when working adjacent to streams and should be implemented for the infilling of the ditches along the highway and in the middle of the property as well as the installation of the septic field:</p> <ul style="list-style-type: none"> • Conduct earth works during dry conditions. • Operate machinery from a dry and stable ground. Avoid excessive rutting and tracking of mud/dirt. If wet soil conditions are encountered, construct temporary access and work pads with clean coarse

FORM 1
Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

	<p>rock.</p> <ul style="list-style-type: none"> • Temporarily cover exposed soils during construction (outside of the work area) with straw and/or mulch. • Place spoil piles away from the SPEA. • Cover spoil piles with poly sheeting or tarps during rain events. <p>A more site specific sediment and erosion plan should be developed if the property is rezoned and more detailed development plans for the site and timeline is established.</p>
<p>I, <u>Cynthia Hannah, RPBio</u>, hereby certify that:</p> <ol style="list-style-type: none"> a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavenor</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 Schedule to the Riparian Areas Regulation 	
<ul style="list-style-type: none"> • Stormwater Management 	<p>The goal under the RAR is to capture small storm runoff from the development within the assessment area for infiltration, vapor-transpiration and/or reuse. The runoff from rooftop leaders should be allowed to infiltrate the ground. The proposed small footprint of impervious surfaces will allow for water infiltration to be similar as it currently is. In future plans, the use of gravel driveway and utility corridor would allow for water infiltration.</p>
<p>I, <u>Cynthia Hannah, RPBio</u>, hereby certify that:</p> <ol style="list-style-type: none"> a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavenor</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 Schedule to the Riparian Areas Regulation 	
<ul style="list-style-type: none"> • Floodplain Concerns (highly mobile channel) 	<p>There are no floodplain concerns on the subject property as the stream is channelized in a ditch. The properties are subject to a 15m floodplain setback for construction of living quarters, but the determined SPEA is greater than this setback. The property will need fill added for the construction of the house due to the high water table.</p>
<p>I, <u>Cynthia Hannah, RPBio</u>, hereby certify that:</p> <ol style="list-style-type: none"> a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Michael Heavenor</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 Schedule to the Riparian Areas Regulation 	

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Section 5. Environmental Monitoring

Attach text or document files explaining the monitoring regimen Use your "return" button on your keyboard after each line. It is suggested that all document be converted to PDF *before* inserting into the PDF version of the assessment report. Include actions required, monitoring schedule, communications plan, and requirement for a post development report.

Site visits will be conducted at all phases of the development in which measures were recommended to ensure that they are being followed appropriately. Any deficiencies, if identified, can then be rectified promptly. At the completion of the development, the QEP will review the development to determine if the recommendations made in this report were followed and effective in protecting the SPEA and fish habitat. Upon final review by the QEP a final letter will be submitted to the appropriate agencies.

For the purposes of the current rezoning, the anticipated development activities include the infilling of the newly constructed ditches along the highway and in the middle of the property as well as the installation of the septic field. Environmental monitoring will be required when:

- Prior to the infilling of the ditches and the construction of the septic field to ensure that the appropriate measures are in place for sediment and erosion control.

Once the property is rezoned and a development plan is developed, the site will be reviewed by the QEP to determine more specific measures to protect the SPEA. A subsequent RAR report will be developed to incorporate the development plan and measures to protect the SPEA. The measures in the future report will include a schedule for environmental monitoring for those activities.

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Section 6. Photos

Provide a description of what the photo is depicting, and where it is in relation to the site plan.

Label Photo 1: View of a stickleback located in Caddisfly Creek tributary near the end of Mittenatch Drive.



Label Photo 2: View of channelized Caddisfly Creek tributary west of the end of Mittenatch Drive.



FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Label Photo 3: A coho salmon smolt was located in the Caddisfly Creek tributary.



Label Photo 4: View of the channel flowing north towards the subject property.



FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Label Photo 5: View south of stream adjacent to the property from the north/west corner. It is confined within a wide ditch.



Label Photo 6: View east of stream adjacent to the property from the north/west corner.



FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Label

Photo 7: There is a low lying ditch/swale on the south side of the property. It is shallow with a fines substrate that holds water during the winter due to the water table level in the area. It varies between being a wide swale (photo) with sedges at the top to a narrow ditch.



Label

Photo 8: There is a low lying ditch/swale on the south side of the property. It is shallow with a fines substrate that holds water during the winter due to the water table level in the area. It varies between being a wide swale with sedges at the top to a narrow ditch (photo).



FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Label

Photo 9: There is no access for fish from the west ditch into the south ditch due to the shallow overland flow over the west ditch sideslope and a mature alder tree growing in the bottom of the ditch.



Label

Photo 10: There is a newly cut ditch that will be filled in. The works must be done when the ditch is dry.



FORM 1
Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Label Photo 11: A trench was dug in the middle of the property which will be filled in when dry.



Label Photo 12: Air photo from City of Campbell River showing property was mostly cleared in 2005.



FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Label Photo 13: View east towards highway showing current access to the property. Stream is to the left of the photo. View of scattered older trees. The driveway will be moved and the SPEA vegetation restored.



Label Photo 14: View of riparian area along the west side of the property. The understory vegetation is difficult to see due to the time of year. Predominant vegetation is alder along the channelized stream.



FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Section 7. Professional Opinion**Assessment Report Professional Opinion on the Development Proposal's riparian area.**Date 1. I/we, Cynthia Hannah, RPBio

hereby certify that:

- a) I am/We are qualified environmental professional(s), as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
- b) I am/We are qualified to carry out the assessment of the proposal made by the developer Michael Heavenor, which proposal is described in section 3 of this Assessment Report (the "development proposal");
- c) 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 assessment methods set out in the Schedule to the Riparian Areas Regulation; AND

2. As qualified environmental professional(s), I/we hereby provide my/our professional opinion that:

- a) if the development is implemented as proposed by the development proposal there will be no harmful alteration, disruption or destruction of natural features, functions and conditions that support fish life processes in the riparian assessment area in which the development is proposed, **OR**

(Note: include local government flex letter, DFO Letter of Advice, or description of how DFO local variance protocol is being addressed)

- b) if the streamside protection and enhancement areas identified in this Assessment Report are protected from the development proposed by the development proposal and the measures identified in this Assessment Report as necessary to protect the integrity of those areas from the effects of the development are implemented by the developer, there will be no harmful alteration, disruption or destruction of natural features, functions and conditions that support fish life processes in the riparian assessment area in which the development is proposed.

[NOTE: "qualified environmental professional" means an applied scientist or technologist, acting alone or together with another qualified environmental professional, if

- (a) the individual is registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association,
- (b) the individual's area of expertise is recognized in the assessment methods as one that is acceptable for the purpose of providing all or part of an assessment report in respect of that development proposal, and
- (c) the individual is acting within that individual's area of expertise.]

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Submission Instructions**Riparian Areas Regulation – Qualified Environmental Professional – Assessment Report
RAR-QEP-AR****Forms you will need to complete are**

- Form 1 which has the database information, the description of the fisheries resources, development site plan, measures to protect and maintain the SPEA, and environmental monitoring.
- Form 2, if more QEPs are part of the project team.
- Either Form 3 the detailed assessment form(s) or Form 4 simple assessment form(s) which is for the results of the riparian assessment (SPEA width). Use enough copies of the form to complete the assessment of the site.
- Form 5 is the photo form(s). Duplicate for additional photos.

NB: See the Guidelines and the Assessment Methods for detailed instructions on the information required for completing the Assessment Report.

A complete Riparian Assessment Report based on the template forms must be converted to a *single* Portable Document Format PDF file prior to uploading onto the Notification System.

The Assessment Report must be complete, by submitting the information specified, and posted to provide notification to the local government, Ministry of Water, Land and Air Protection and the Department of Fisheries and Oceans Canada.

Tips for working with MS Word Template Forms

Using the forms

- Before beginning, print a hard copy of the form and the guidance files for reference
- Open the template
- Enter data into the shaded fields on the form
- Use TAB to move from one field to another; SHIFT-TAB to go in reverse
- Text and digital photos may be inserted from other applications
- The amount of text that can be entered in each box is limited and cannot be changed by the user; boxes with date information, for example, require input like: yyyy-mm-dd.

Saving the completed form

- Assign name to the completed form
- Save a word document (*.doc file)
- Do not overwrite the Template (*.dot file) with your completed form
- If you do overwrite the template, you can download a new copy from this web site