Denman Island Local Trust Committee
Regular Meeting Addendum

Date:	May 2, 2017
Time:	9:30 pm
Location:	Denman Activity Centre
	1111 Northwest Rd, Denman Island, BC

			Pages
8.	**DELEGATIONS**	10:15 AM - 10:25 AM	
8.1	*Denman Community Land Trust Association (DCLTA) regarding Senior's Affordable Housing Project*		*2 - 3*
11.	**APPLICATIONS AND REFERRALS**	10:45 AM - 11:15 AM	
11.3	*DE-RZ-2015.1 (Pandesign) - Staff Reprt*		*4 - 34*
11.4	*DE-DVP-2016.1 (Citizen Design for Lundberg) - Staff Report*		*35 - 111*
13.	**LOCAL TRUST COMMITTEE PROJECTS**	11:35 AM - 12:45 PM	
13.1	*Denman Farm Plan Implementation - Staff Report*		*112 - 118*
13.3	Relationship Building with First Nations - Next Steps		
13.3.1	*Staff Report*		*119 - 126*

Denman Community Land Trust Association - Delegation to the May 2, 2017 Local Trust Committee re: Seniors' Affordable Housing Project

Denman Community Land Trust Association (DCLTA) will soon be applying to amend the Denman Island Official Community Plan and Land Use Bylaw to enable the creation of 8 dwelling units (four duplexes) dedicated to affordable housing for low income residents of Denman Island over the age of 65.

The land subject to the bylaw amendment and strata subdivision process is Parcel M, Section 18. The application will propose that this four acre parcel be divided into two 2-acre parcels, with the parent property retained by the owner.

To advance this project, DCLTA has undertaken measures involving research, outreach and two regulatory changes to alter the status of the property. The research resulted in completion of a needs assessment (Sept. 2014), a Wastewater Assessment for Development (Jan. 2016), and a business plan for the project (June 2016).

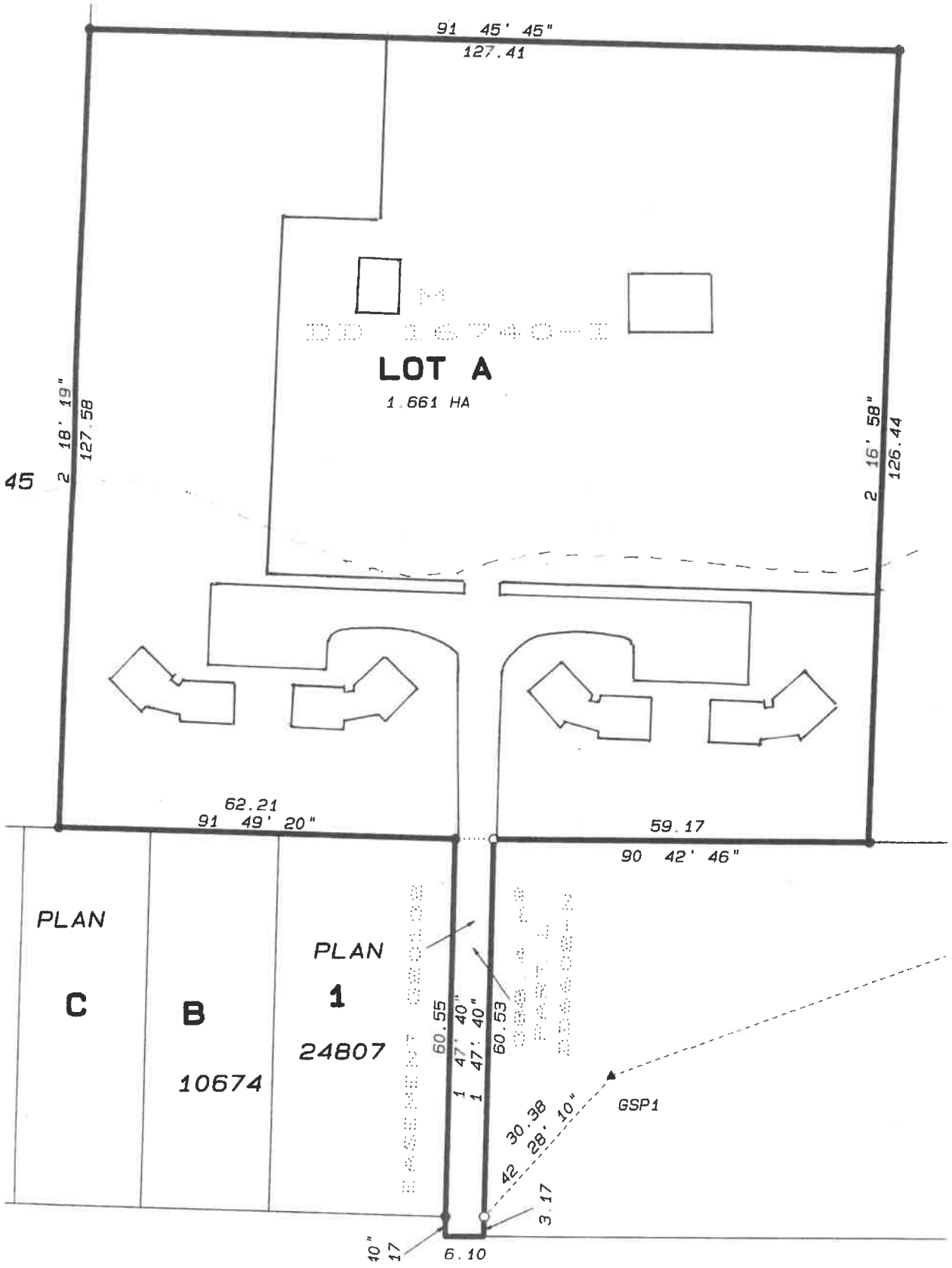
The outreach has included discussion with and updates to the owners of neighbouring properties from 2013 onward; an open house to introduce the proposal to the community (Feb. 2014); a meeting with Trust Planner Milne (Mar. 2014); meetings with VIHA/IH and MOTI in 2014 and further update-meetings in 2016; and a pre-application meeting with Ann Kjerulf, Islands Trust Regional Planning Manager, this past March, as recommended in the Bylaw Application Guide. This presentation today is DCLTA's second delegation to the LTC.

Regarding the regulatory changes, we applied successfully to exclude the parcel from the ALR (approved by the ALC in Nov. 2016), and we arranged for transfer of the easement area on the Guest House property to Lot M (as recommended by MOTI).

Further, following two work bees and many hours of individual volunteer work to open up the project area, we have revised the project concept map to create a more useful strata subdivision configuration (see the attached). Our next step is to host a pre-application community information meeting, which is tentatively scheduled for July.

Today, in advance of that meeting and of our application for the necessary bylaw amendments, we are asking that the LTC consider adopting an "affordable housing first" policy that gives priority to any application relating to an affordable housing initiative. This tool is described on page 44 of the 2010 *Islands Trust Affordable Housing Tool Kit* and is proposed as an effective way of streamlining and facilitating affordable housing projects. According to the "Tool Kit," a policy to this end had already been adopted by Salt Spring Island at that time. We are also asking that the LTC consider reducing the fees and cost-recovery charges applicable to all applications for affordable housing.

Time is of the essence. The land cannot be purchased in advance of bylaw and subdivision approvals, and fundraising for the land purchase depends on these approvals. Also, construction will require a combination of government grants and loans that require DCLTA's secured


91 45' 45"
127.41
LOT A
1.661 HA
2 18' 19"
127.58
45
2 16' 58"
126.44
62.21
91 49' 20"
59.17
90 42' 46"
PLAN
C
B
PLAN
1
24807
10674
60.55
60.53
1 47' 40"
1 47' 40"
GSP1
30.38
28' 10"
42
3.17
10"
17
6.10

Islands Trust

MEMORANDUM

File No.: DE-RZ-2015.1 (Pandesign)

DATE OF MEETING: May 2, 2017

TO: Denman Island Local Trust Committee

FROM: Ann Kjerulf, Regional Planning Manager
Northern Team

SUBJECT: **RE: Restrictive Covenant related to file DE-RZ-2015.1**
Applicant: Pandesign - Henning Nielsen (for Innes)
Location: 2100 Crescent Rd, Denman Island; PID 028-605-691

RECOMMENDATION

1. **THAT the Denman Island Local Trust Committee receive and accept the draft covenant and priority agreement with respect to file DE-RZ-2015.1, and that Trustees Laura Busheikin and Susan Morrison be assigned as signatories.**

PURPOSE

The purpose of this memorandum is to provide the Denman Island Local Trust Committee (LTC) with the final draft version of a new restrictive covenant which is to be held by the LTC, for their receipt, review, approval, and signature. Following a resolution to approve the covenant, Staff will work with the applicants to co-ordinate the registration of the covenant on title.

BACKGROUND

This restrictive covenant was deemed a requirement by the LTC in conjunction with rezoning application DE-RZ-2015.1. The covenant restricts the use of land on the receiving parcel in order to maintain the natural state of covenant areas containing "significant natural areas values including flora, fauna and natural features of importance," as described in the Site Inventory prepared by Warren Fleenor, RPBio of Current Environmental Ltd., dated April 13, 2015. This report is appended to the draft covenant.

Staff have worked with the applicant to finalize and register the restrictive covenant, following the adoption of the bylaws, as the applicant now has a subsequent Subdivision application: DE-SUB-2017.2, and Staff have informed MOTI that one of our requested conditions prior to final subdivision approval is the confirmed registration of this restrictive covenant on title.

On April 28, 2017, Staff received the final draft version of the restrictive covenant, which is included with this report as Attachment 1 for the LTC's receipt, review, and approval. Staff and Islands Trust legal counsel are satisfied that this version of the covenant is ready for registration on title.

NEXT STEPS

Following signature of the covenant by the LTC, Staff will work with the applicants to co-ordinate the registration of the covenant on title.

Submitted By:	Ann Kjerulf, MCIP, RPP Regional Planning Manager	April 28, 2017

ATTACHMENTS

1. Copy of draft covenant and priority agreement for file DE-RZ-2015.1

LAND TITLE ACT
FORM C (Section 233) CHARGE
GENERAL INSTRUMENT - PART 1 Province of British Columbia

Your electronic signature is a representation that you are a subscriber as defined by the Land Title Act, RSBC 1996 c.250, and that you have applied your electronic signature in accordance with Section 168.3, and a true copy, or a copy of that true copy, is in your possession.

1. APPLICATION: (Name, address, phone number of applicant, applicant's solicitor or agent)

KRUGEL & COMPANY (#011781)
Barristers & Solicitors
#102 - 635 Fitzgerald Avenue
Courtenay BC V9N 2R4
Tel: (250) 338-0644
File: 15-237

Deduct LTSA Fees? Yes ☑

2. PARCEL IDENTIFIER AND LEGAL DESCRIPTION OF LAND:
[PID] [LEGAL DESCRIPTION]

028-605-691 **LOT A, SECTION 12, DENMAN ISLAND, NANAIMO DISTRICT, PLAN VIP88949**

STC? YES ☑

3. NATURE OF INTEREST CHARGE NO. ADDITIONAL INFORMATION

Covenant
Priority Agreement covenant priority over CA4520925

4. TERMS: Part 2 of this instrument consists of (select one only)
(a) ☐ Filed Standard Charge Terms D.F. No. (b) ☑ Express Charge Terms Annexed as Part 2
A selection of (a) includes any additional or modified terms referred to in Item 7 or in a schedule annexed to this instrument.

5. TRANSFEROR(S):

SEE SCHEDULE

6. TRANSFEREE(S): (including postal address(es) and postal code(s))

DENMAN ISLAND LOCAL TRUST COMMITTEE

SUITE 200, 1627 FORT STREET
VICTORIA BRITISH COLUMBIA
V8R 1H8 CANADA

7. ADDITIONAL OR MODIFIED TERMS:
N/A

8. EXECUTION(S): This instrument creates, assigns, modifies, enlarges, discharges or governs the priority of the interest(s) described in Item 3 and the Transferor(s) and every other signatory agree to be bound by this instrument, and acknowledge(s) receipt of a true copy of the filed standard charge terms, if any.

Officer Signature(s)	Execution Date Y	M	D	Transferor(s) Signature(s)
Michael Krugel Barrister & Solicitor #102 - 635 Avenue Courtenay, BC V9N 2R4 Tel: (250) 338-0644	17			Pandesign Ltd. by its authorized signatory: Henning Nielsen

OFFICER CERTIFICATION:
Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.

Officer Signature(s)	Execution Date Y	M	D	Transferor / Borrower / Party Signature(s)
_____	17			Denman Island Local Trust Committee by its authorized signatories:
				_____
				print name: _____
				_____
				print name:_____
_____	17			_____ Steven Robert Hoerburger
				_____ Eric Anthony Hoerburger
_____				_____

OFFICER CERTIFICATION:
Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.

LAND TITLE ACT
FORM E

SCHEDULE

ENTER THE REQUIRED INFORMATION IN THE SAME ORDER AS THE INFORMATION MUST APPEAR ON THE FREEHOLD TRANSFER FORM, MORTGAGE FORM, OR GENERAL INSTRUMENT FORM.

5. TRANSFEROR(S):

Pandesign Inc. Inc. No. 533170

As to priority:

Steven Robert Hoerburger
Eric Anthony Hoerburger

PART 2 – TERMS OF INSTRUMENT

SECTION 219 COVENANT

This Agreement dated for reference the ____ day of _____, 2017 is

BETWEEN:

PANDESIGN INC.
a British Columbia corporation
3222 Lacon Road
Denman Island, BC V0R 1T0

(the "**Owner**")

AND:

DENMAN ISLAND LOCAL TRUST COMMITTEE, a corporation under the *Islands Trust Act*, R.S.B.C. 1996, c.239, with an office at Suite 200, 1627 Fort Street, Victoria, British Columbia, V8R 1H8

(the "**Local Trust Committee**")

WHEREAS:

A. The Owner is the registered owner in fee simple of that parcel of land located on Denman Island, British Columbia which is legally described as:

Parcel Identification Number: 028-605-691
Legal Description: Lot A, Section 12, Denman Island, Nanaimo District, Plan VIP88949

(the "**Land**");

B. Plan EPP71513 a copy of which is attached hereto, delineates Covenant Area 1, Covenant Area 2 and Covenant Area 3 (collectively: the "Covenant Areas");

C. The Covenant Areas contain significant natural area values including, flora, fauna and natural features of importance to the Owner, the Local Trust Committee and the public which natural values are described in a Site Inventory prepared by Warren Fleenor, R.P. Bio of Current Environmental Ltd., dated April 13, 2015 (the "Report") a copy of which is attached hereto.

D. The Owner intends to grant and the Local Trust Committee wishes to accept a covenant under s. 219 of the *Land Title Act* (British Columbia) to regulate the use of the Covenant Areas in the interests of ensuring the preservation and protection of the natural state of the Covenant Areas;

E. The Denman Island Local Trust Committee is authorized to accept covenants under section 219 of the *Land Title Act* (British Columbia); and

F. Section 219 of the *Land Title Act* (British Columbia) provides that there may be registered as a charge against the title to land a covenant, whether of a negative or positive nature, in respect of the use of land, the building on land, the subdivision of land and the preservation of land or a specified feature on the land.

In consideration of the payment of two dollars ($2.00) now paid by the Local Trust Committee to the Owner, the receipt and sufficiency of which is hereby acknowledged by the Owner, and in consideration of the promises exchanged below, the parties covenant and agree as follows, in accordance with section 219 of the *Land Title Act* (British Columbia):

1. Baseline Documentation Report

1.1 The parties each agree that the Covenant Areas and their features are described in the Report and that the Report provides a reasonably accurate description of the Covenant Areas and their features as of the date of this Agreement.

1.2 The parties agree that the Report is intended to serve as an information baseline for this Agreement, for the purpose of monitoring compliance with the terms of this Agreement.

1.3 The parties each acknowledge that the flora and fauna on the Covenant Areas will evolve through natural succession over time and, unless otherwise expressly stated, references to the Report are intended to take into account the natural succession of the flora and fauna over time, without human intervention other than as expressly permitted by this Agreement.

2. Restriction on Use

2.1 Except as expressly permitted in this Agreement, in or on Covenant Areas 1 and 3 and in or on those parts of Covenant Area 2 comprising a terrain gradient of 60% or greater for a horizontal distance greater than 10 meters (collectively, the "Restricted Areas") the Owner shall not do anything, or allow anything to be done, that does or could reasonably be expected to destroy, impair, diminish, negatively affect, or alter the Restricted Areas from the condition described in the Report.

2.2 Without restricting the generality of Section 2.1, the Owner shall not, except with the prior written approval of the Local Trust Committee cause or allow:

(a) silts, leachates, fills or other deleterious substances to be released as a result of human activity into any watercourse on the Restricted Areas;

(b) soil, gravel or rock to be disturbed, explored for minerals, moved or removed from or deposited in or on the Restricted Areas;

(c) the alteration or interference with the hydrology of the Restricted Areas as a result of human activity, including the diversion of natural drainage or flow of water in, on or through the Restricted Areas;

(d) fill, rubbish, ashes, garbage, waste or other material foreign to the Restricted Areas to be deposited in, on or under the Restricted Areas;

(e) pesticides, herbicides, fungicides or insecticides to be applied to or introduced onto the Restricted Areas;

(f) native plants, including trees and shrubs, to be cut down, destroyed, damaged, defoliated, or removed from the any part of the Restricted Areas;

(g) the construction, building, or affixing of any buildings, structures, fixtures or improvements on the Restricted Areas;

(h) fishing, hunting, gathering, or grazing domestic animals, to be carried out on the Restricted Areas;

(i) the construction of any new roads or trails on the Restricted Areas; or

(j) fires to be ignited in or on the Restricted Areas.

Except that in order to prevent injury to persons or property, the Owner may cause or allow the following without prior written approval under this Section:

(k) removal of debris so as to keep pathways open;

(l) removal of standing dead trees within 50 feet of a dwelling or accessory building if deemed by the Owner, acting reasonably, to pose a fire or other safety hazard; and

(m) removal of organic debris that has fallen on the Restricted Areas within 25 feet of a dwelling or any accessory building subject to the requirements of any applicable law under which the clearing of a greater distance must be maintained.

2.3 On the Land and any lot created by subdivision of the Land, the Owner's right to create or improve openings in the forest through which views towards the horizon ("Sight Lines") can be seen from a dwelling on the Land, from any accessory building permitted to be built on the Land or from a site of reasonably small area at or near a high point within a Covenant Area, is subject to Section 3.2 and is limited to doing so from the location of one such dwelling, one such accessory building and one such high point on the Land or on any lot created by subdivision of the Land. Furthermore, any such Sight line shall be no more than 15 meters wide at the dwelling, accessory building or high point and the aggregate width of such Sight lines shall be no more than 30 meters.

2.4 The Local Trust Committee will not unreasonably withhold or delay any prior written approval under Section 2.2 or Section 3.2 subject to the provision, from the Owner to the Local Trust Committee of a Detailed Plan as defined hereinafter and as required by this Covenant.

3. Detailed Plan

3.1 A Detailed Plan means a report which may include illustrations, maps and photos, which is prepared by a Registered Professional Biologist and sets out the existing nature, including the natural area values of the Restricted Areas and illustrates the proposed alterations (including but not limited to the siting of buildings, fences, gates, driveways, pathways) of the Restricted Areas by the Owner, and which takes into consideration the impact that the proposed alterations may have on the vegetation, soils, drainage, wildlife and other natural values of the Restricted Areas and identifies all remedial actions that the Owner will take to lessen or eliminate any impacts identified.

3.2 Where the Owner proposes any alterations to the Restricted Areas, by cutting, moving, harvesting, removing, thinning, topping, trimming or pruning of vegetation for the purpose of creating or improving Sight Lines, the Owner must obtain the prior written approval of the Local Trust Committee to undertake such alterations by providing a written request and a Detailed Plan to the Local Trust Committee. Any such alterations proposed by the Owner for the purpose of creating or improving Sight Lines shall ensure that the overall biological composition of the Restricted Areas is not lost. Consideration by the Local Trust Committee of those alterations shall take into account the individual layout and characteristics of any lot created as a result of the subdivision of the Land. The Owner shall make reasonable efforts to site these improvements to take maximum advantage of already existing Sight Lines so as to minimize the disturbance to the Restricted Areas.

3.3 Where the Owner proposes any encroachment of buildings into the Restricted Areas, the Owner must obtain the prior written approval of the Local Trust Committee to carry out such building encroachment by providing a written request and a Detailed Plan to the Local Trust. For the purpose of such proposed encroachments:

(a) "building" includes a building's decks and its attached carport, if any;

(b) building encroachments into the Restricted Areas including all accessory buildings shall be confined to a maximum of two building sites on the Land, or if the Land is subdivided, on each lot created by the subdivision;

3.4 The Local Trust Committee acknowledges that the Owner intends to subdivide the Land, including the Covenant Areas, in conformity with all governmental requirements and allowances.

3.5 Any Detailed Plan provided by the Owner to the Local Trust Committee shall be based upon the information set out in the Report. The Local Trust Committee will review the Detailed Plan, with reference to the intent of this Agreement examining factors over and

above those of the Islands Trust Development Permit process. Such factors may include, but not be limited to, the effect on wildlife and veteran trees; plant communities; wildlife habitat; and general landscape; adequacy of mitigation/restoration measures, standards for tree alteration of, for example, the American National Standards Institute (ANSI) and the Pacific Northwest Chapter of the International Society of Arboriculture (PNWISA), and, such review shall be carried out with acknowledgment of the Owner's expectations of reasonable residential use and enjoyment of the Land and the Covenant Areas.

3.6 Within 15 business days of receipt of the Detailed Plan, the Local Trust Committee will initiate a process of consultation with the Owner. The process of consultation will include discussion of the proposed alterations described in the Detailed Plan and suggestions by the Local Trust Committee of alternatives should they be deemed warranted. The Detailed Plan may be amended by the Owner as part of this consultation process.

3.7 Within 30 business days of conclusion of the consultation process with the Owner, the Local Trust Committee will provide a written response to the Owner, rendering its decision and the reasons for the decision.

3.8 If the Local Trust Committee refuses to approve the Detailed Plan, the Owner and Local Trust Committee agree to submit such disagreement to a group (the "Group") of three (3) professional consultants with expertise pertinent to the particulars of the disagreement (e.g. biology, ecology, slope stability, etc.). Members of the Group shall be selected in the following manner: one member to be chosen by the Owner; a second to be chosen by the Local Trust Committee; and, the third to be selected by the first two members of the Group.

3.9 The Group shall be provided with materials including this Agreement, the Report, any applicable Islands Trust Development Permit, governmental requirements (where applicable) and Detailed Plan. The Group will view the affected Covenant Area and receive written and oral submissions from the Owner and Local Trust Committee. The Group shall render its acceptance or non-acceptance of the Detailed Plan or amended Detailed Plan, where applicable, by majority opinion. The written decision of the Group will be final. The Owner shall be responsible for paying all costs associated with securing the services of the Group. Each party shall bear their own costs in making submissions to the Group.

4. Owner's Reserved Rights

4.1 The Owner reserves all of its rights with respect to the Covenant Areas, including the right to use, occupy and maintain the Covenant Areas in any way, that is not expressly restricted or prohibited by this Agreement, so long as the use, occupation or maintenance is consistent with the intent of this Agreement.

4.2 The Owner may trim, prune, cut down, or remove any non-native invasive plants from any part of the Covenant Areas.

4.3 Nothing in this Agreement restricts or affects the right of the Owner or any other party to do anything reasonably necessary to:

(a) prevent potential injury or death to any individual; or

(b) prevent, abate or mitigate any damage or loss to any personal property,

provided that the Owner shall provide written notice of such action to the Local Trust Committee within 30 days after taking any such action.

5. No Effect On Laws or Powers

This Agreement does not:

(a) affect or limit the discretion, rights, duties or powers of the Local Trust Committee under any enactment or at common law, including in relation to the use or subdivision of the Land;

(b) impose on the Local Trust Committee any duty of care or other legal duty of any kind to the Owner or to anyone else; or

(c) oblige the Local Trust Committee to enforce this Agreement.

6. Enforcement

6.1 The Owner agrees that the public interest in the preservation and protection of the natural state of the Covenant Areas favours an order for specific performance of the Owner's obligations in this Agreement, and that damages are not an adequate remedy for the Local Trust Committee in the event of any breach by the Owner.

6.2 If the Local Trust Committee, in its sole discretion, believes that the Owner has neglected or refused to perform any of the obligations set out in this Agreement or is in breach of any term of this Agreement, that Local Trust Committee may give a written notice of breach to the Owner setting out particulars of the breach, including the Local Trust Committee's estimated maximum costs of remedying the breach in the event that the Owner does not do so.

6.3 On receipt of such a notice, the Owner must:

(a) immediately cease all activities giving rise to the breach; and

(b) within 60 days remedy the breach or make arrangements satisfactory to the Local Trust Committee to remedy the breach, including with respect to the time within which the breach must be remedied,

provided that the Owner will not be considered to be in default under Section 6.3(b) if the nature of the breach is one that cannot be readily remedied within the 60-day remedy period and the Owner is diligently working towards remedying the breach.

6.4 For clarity, the requirement in Section 6.3 to remedy a breach requires the Owner to undertake such rehabilitation or restoration as is necessary to remedy any damage done to the Covenant Areas contrary to this Agreement, at the Owner's sole expense.

6.5 If the Owner does not comply with the requirements of the Section 6.3 within the time required or agreed upon, the Local Trust Committee may enter upon the Land and take any required actions to cease any activities giving rise to the breach, and to remedy the breach or carry out the arrangements referred to in Section 6.3. The Owner must reimburse that Local Trust Committee for any reasonable expenses incurred in taking any action under this Section 6.5, up to the estimated maximum costs of remedying the breach as set out in the notice.

7. Indemnity

7.1 The Owner hereby indemnifies and saves harmless the Local Trust Committee and its elected and appointed officials, officers, employees and agents, from and against all loss, damage, cost, actions, suits, debts, expenses and harm of any kind whatsoever which the Local Trust Committee may at any time suffer or incur arising out of or related to this Agreement or any breach of it, except to the extent that any such claim arises due to the negligence or breach of this agreement by an indemnified party.

8. Limitation on Obligations

8.1 The Owner is only liable for breaches of this Agreement caused or contributed to by the Owner, or which the Owner specifically permits or allows, in respect of the Owner's particular lot or lots should the breach occur in respect of a lot into which the Land has been subdivided and such limitation applies to the Indemnity granted under Section 7 hereof. The Owner is liable only for breaches of this Agreement which occur while the Owner is the registered owner of any interest in the Land and then only to the extent of that interest.

8.2 The Owner is not liable for:

(a) alterations to the Covenant Areas resulting from acts of nature, or causes beyond the Owner's reasonable control, including accidental fire, flood, or storm, and trespass and vandalism which the Owner has taken reasonable actions to prevent;

(b) any prudent action taken by the Owner under emergency conditions to prevent, abate, or mitigate significant injury to the Covenant Areas resulting from acts of nature, including accidental fire, flood, or storm; or

(c) injury or alteration to the Covenant Areas caused by the Local Trust Committee.

9. No Liability in Tort

The parties agree that this Agreement creates only contractual obligations. The parties agree that no tort obligations or liabilities of any kind exist between the parties in

connection with the performance of or any default under or in respect of this Agreement. The intent of this Section 9 is to exclude tort liability of any kind and to limit the parties to their rights and remedies under the law of contract.

10. Covenant Runs With the Land

Every obligation and covenant of the Owner in this Agreement constitutes both a contractual obligation and a covenant granted under section 219 of the Land Title Act (British Columbia) in respect of the Land. This Agreement burdens the Land and runs with it and binds the successors in title to the Land. This Agreement burdens and charges all of the Land and any parcel into which it is subdivided by any means and any parcel into which the Land is consolidated.

11. Registration

The Owner agrees to do everything reasonably necessary, at the Owner's expense, to ensure that this Agreement is registered against title to the Land with priority over all financial charges, liens and encumbrances registered or pending registration in the Victoria Land Title Office at the time of application for registration of this Agreement.

12. Waiver

An alleged waiver of any breach of this Agreement is effective only if it is an express waiver in writing of the breach. A waiver by the Local Trust Committee of a breach of this Agreement by the Owner does not operate as a waiver of any other breach of this Agreement.

13. Severance

13.1 If any part of this Agreement is held to be invalid, illegal or unenforceable by a court having the jurisdiction to do so, that part is to be considered to have been severed from the rest of this Agreement and the rest of this Agreement remains in force unaffected by that holding or by the severance of that part.

14. No Other Agreements

14.1 This Agreement is the entire agreement between the parties regarding its subject and it terminates and supersedes all other agreements and arrangements regarding its subject.

15. Binding of Successors

15.1 This Agreement binds the parties to it and their respective successors, assigns, heirs, executors and administrators.

16. Further Acts

16.1 The Owner must do everything reasonably necessary to give effect to the intent of this Agreement, including execution of further instruments.

17. Deed and Contract

17.1 By executing and delivering this Agreement the Owner intends to create both a contract and a deed executed and delivered under seal.

18. Execution Using Form C

18.1 As evidence of their agreement to be bound by the terms of this instrument, the parties each have executed the Land Title Act (British Columbia) Form C which is attached hereto and which forms part of this Agreement.

19. Time is of the Essence

19.1 Time shall be of the essence in this Agreement.

CONSENT AND PRIORITY AGREEMENT

WHEREAS:

A. Pandesign Inc. (the "**Owner**") is the registered owner of Lot A, Section 12, Denman Island, Nanaimo District, Plan VIP88949 (the "**Land**");

B. The Owner granted Steven Robert Hoerburger and Eric Anthony Hoerburger (collectively, the "**Prior Chargeholder**") a mortgage, which was registered against the title to the Land in the Victoria Land Title Office under number CA4520925 (the "**Prior Charge**");

C. The Owner granted to the Denman Island Local Trust Committee (the "**Subsequent Charge Holder**") a Section 219 Covenant which is registered against the title to the Land one number prior to this Consent and Priority Agreement (the "**Subsequent Charge**"); and

D. Section 207 of the Land Title Act permits the Prior Chargeholder to grant priority over a charge to a subsequent chargeholder.

THEREFORE THIS CONSENT AND PRIORITY AGREEMENT WITNESSES THAT IN CONSIDERATION OF $1.00 AND OTHER GOOD AND VALUABLE CONSIDERATION RECEIVED BY THE PRIOR CHARGEHOLDER FROM THE SUBSEQUENT CHARGEHOLDER (THE RECEIPT AND SUFFICIENCY OF WHICH IS HEREBY ACKNOWLEDGED):

1. The Prior Chargeholder hereby consents to the granting and registration of the Subsequent Charge and the Prior Chargeholder hereby agrees that the Subsequent Charge shall be binding upon its interest in and to the Land.

2. The Prior Chargeholder hereby grants to the Subsequent Chargeholder priority for the Subsequent Charge over the Prior Chargeholder's right, title and interest in and to the Land, and the Prior Chargeholder does hereby postpone the Prior Charge and all of its right, title and interest thereunder to the Subsequent Charge as if the Subsequent Charge had been executed, delivered and registered prior to the execution, delivery and registration of the Prior Charge.

As evidence of its agreement to be bound by the above terms of this Consent and Priority Agreement, the Prior Chargeholder has executed and delivered Part 1 of *Land Title Act* Form C which is attached hereto and forms part of this Agreement.

current ENVIRONMENTAL
Unit E - 244 4th St.,
Courtenay, BC V9N 1G6
p: 250.871.1944
c: 250.703.3355

April 13, 2015

Pan Design Inc
Denman Island, B.C.

ATTN: Henning Neilsen

RE: Site Inventory at Crescent Road, Denman Island, BC

1 INTRODUCTION

This letter report is submitted to Pandesign Inc. to provide biological support for a proposed "density transfer" between two lands located on Denman Island BC. The contributing parcel is located in the Valens Brook watershed and contains significant conservation values. The recipient parcel, the subject of this report, would represent a much lower average density of settlement upon completion of the rezoning.

2 METHODS

2.1 OFFICE BASED OVERVIEW

Sources consulted to complete the office-based overview level inventory of Valued Ecosystem Components (VEC's) in the study area include the following:

1. BC Conservation Data Center (CDC) Species and Ecosystem Explorer ;
2. SARA and COSEWIC (Committee on the Status on Endangered Wildlife in Canada) online databases;
3. Integrated Land Management Bureau (ILMB) Land and Resource Data Warehouse mapping and
4. BC Biogeoclimatic (BCG) Ecosystem Classification Mapping for the Squamish Forest District, BC;
5. "Google Earth" and MapIT air photos of the study area.

2.2 FIELD VERIFICATION

The site was walked by two Professional Biologists[1] on April 9, 2015. Habitat features were identified and ground-truthed using a variety of methods (listed below) and based on the experience of the project biologist. Inventory methods were adapted from the following sources:

1. Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia. BC Ministry of Environment. 2006.
2. Environmental Objectives, Best Management Practices and Requirements for Land Developments. BC Ministry of Environment Lands and Parks. 2001

[1] Warren Fleenor, R.P.Bio – Current Environmental Ltd and John Cooper, R.P.Bio – Cooper Beauschesne and Associates Ltd.

3. Field Manual for Describing Terrestrial Ecosystems. Land Management Handbook #25 – BC Ministry of Environment Lands and Parks and BC Ministry of Forests. 1998.

2.3 RARE AND ENDANGERED SPECIES

An office-based assessment of Species at Risk occurrences within or close to the study area was completed using the online BC Species and Ecosystems Explorer (Conservation Data Center, 2004), the Natureserve - based BC Species and Ecosystems Explorer, the Federal Species at Risk Public Registry, and a review of existing inventory reports. The on-site assessment of Species at Risk was completed concurrent with other inventory initiatives.

2.4 PROJECT MAPPING

Identified communities and VEC's were delineated using handheld GPS (NAD 83, UTM) and aerial photo maps. Results are displayed on a black and white airphoto captured in 2002. All mapped occurrences are approximations only.

3 RESULTS

The site lies within the Coastal Douglas Fir moist maritime biogeoclimatic zone. In general, habitat function of the entire area has been impacted by recent forest harvesting activities. As such, there were no significant rare or sensitive habitats or communities noted on the site. There were no aquatic habitats noted on the property. Particular focus was placed on ascertaining use of the area by Turkey Vultures for nesting habitat.

For the purposes of this study, the vegetation communities observed during the April 9th site assessment have been grouped into seven broad classes based on assemblages of vegetation and physiography observed. These are presented graphically in Figure 1, and are described below.

3.1 CRESCENT BLUFF

This ~ 0.7 Ha community is located near the current terminus of Crescent Road (Figure 1). The dominant characteristic of this community is the steep, crescent-shaped rocky bluff landform oriented with an eastern aspect. Vegetation within this polygon consists of a second growth red cedar forest stand with subdominant populations of western hemlock, bigleaf maple, and Douglas fir. Generally, the understory of this community is poorly developed as a result of the prevalence of bedrock and boulder/cobble substrates that limit the availability of microsites for the establishment of vegetation. Swordfern, dull Oregon grape, salal, brackenfern, and red huckleberry were the dominant shrub species in this polygon. See Photos 1-3.

3.1.1 Wildlife Value

The east-facing steep slope and bedrock/boulder scree physiography of this area provides a somewhat unique setting. The many crags and fissures likely provide habitat for reptiles (Alligator Lizard, Garter Snake), however there does not appear to be a reliable source of water in the area. Several medium-sized snags were noted within this polygon that provide nesting, perch and foraging habitat for bird species. Larger Douglas fir located near the crest of the slope also provide good perching and nest opportunities for birds. This area was closely inspected for turkey vulture nest sites; none were located. The steep topography of this area provides thermal updrafts for larger bird species such as Turkey Vultures and Bald Eagles: numerous individuals of these species were observed in the area during the study. A Red Squirrel was noted at the crest of the slope during the assessment.

3.2 SOUTHWEST SLOPE

This ~ 1.3 Ha community is a strip approximately 40-60 m wide and 400 m long that is oriented NW-SE (SW aspect) on the more northwestern portion of the property. Generally, this landform is a steep (~60-80%) slope (Photo 4) punctuated with sections of short rocky bluffs (Photo 5). Vegetation is somewhat sparse along the more northern portion of this polygon; partly a result of recent forest harvesting, and partly a result of the apparent thin soils in the area. The density of trees increases and average stand age decreases as one travels south along the slope (Photos 5 and 6). Vegetation within this polygon consists of a mixed-age second growth forest stand comprised of Douglas fir, arbutus, bigleaf maple, and red cedar. Understory vegetation includes salal, Oregon grape, black gooseberry, baldhip rose, red huckleberry, red flowering currant, swordfern, foxglove, checker lily, falsebox, and holly. As with the Crescent Bluff polygon, the understory of this community is generally poorly developed as a result of thin soils and presence of bedrock and boulder/cobble substrates. Numerous veteran and larger specimen Douglas fir and arbutus trees were noted along the crest of this slope (Photo 6).

3.2.1 Wildlife Value

The more southern facing aspect of this slope of this area will provide warmer habitats for wildlife than the Crescent Bluff. Overall, the diverse vertical structure of the forest provides moderate forage and nesting habitat for birds, however wildlife trees, or snags, were generally infrequent in this area. The larger trees along the crest of the slope provide good perch sites for raptors to survey the field habitats below the slope. This area was also closely inspected for turkey vulture nest sites; none were located – it is anticipated that the more dense vegetation in this polygon would limit access to potential nest sites by these birds. The steep topography of this area also provides thermal updrafts for soaring bird species such as Bald Eagles and Turkey Vultures: numerous individuals of these species were observed in the area. Northern Flicker were observed in this area demonstrating mating behaviour. Evidence of deer use (browse, droppings and trails) was prevalent in this polygon. Significant portions of this community were logged approximately fifteen years ago.

3.3 SOUTWESTERN BOUNDARY

This community is ~ 3.9 Ha in size and lies between the long, southern property boundary. Generally, this polygon has a gentle (~30%), southwestern exposure slope with a young, mixed forest stand that varies significantly in density. The southern-most portion of this community is characterized as having a young, uniform stand age red alder, Douglas fir and arbutus forest (Photo 7) that transitions to more sparsely vegetated meadow habitat populated with young arbutus, Douglas fir, red alder, bigleaf maple forest with isolated Pacific flowering dogwood, choke cherry, and hemlock trees (Photo 8). Understory vegetation in this community is comprised of weedy, non-native grasses, brackenfern, swordfern, red elderberry, baldhip rose, gooseberry, foxglove, and small pockets of common spike rush in seasonally wetted depressions at the toe of the slope. This area was logged approximately fifteen years ago.

3.3.1 Wildlife Value

The dense thicket-like portions of this community provide good cover, rearing, and forage habitat for small passerine birds, ungulates, rodents, and other small mammals, while the more open meadow portions of the community provide grazing habitat for ungulates and hunting grounds for raptors. An abandoned red-tail hawk nest was observed in this area (Figure 1; Photo 8) Evidence of deer use (browse, droppings and trails) was prevalent in this polygon. The few small and ephemeral wetted depressions noted adjacent to a small access road

in this polygon may provide some hydration opportunities for wildlife, however these areas did not provide meaningful habitat for amphibian rearing or breeding.

3.4 REGENERATING ARBUTUS STAND

This area slopes gently (~12 %) to the southeast from the saddle between the steeper slopes to Woodham Road. The overwhelming feature of this area is the very dense, dominant stand of immature (~10-14 year old) arbutus trees that have colonized the area since harvesting was completed in ~ 1999 (Photos 9 & 10). A sub-population of immature Douglas fir is interspersed with the arbutus trees; it is expected that these trees will eventually reduce the arbutus population as a result of increased shade as the stand matures. Isolated Pacific flowering dogwood and crabapple were noted at lower elevation areas with higher moisture content in the soils. Understory vegetation consisted primarily of weedy grass species with salal and Oregon grape. Small amounts of baldhip rose, gooseberry, and woodland strawberry[2] were also noted.

3.4.1 Wildlife Value

Passerine birds and deer likely use the dense shrub-like cover provided by the immature trees in the area. The forest stand is too young to provide significant habitat value for many species. It is possible that the open meadow-like area provides limited foraging habitat for Taylors Checkerspot adults, as this species is known to populate nearby areas (Figure 3).

3.5 YOUNG SECOND GROWTH FOREST

There were two communities of young second growth forest observed on the property. The first is a ~0.9 Ha area located on a ~ 20 % southeast-facing slope at the northeastern-most corner of the property. The second is a ~ 0.8 Ha community located on a steeper (55 %) slope. These areas were populated by immature western red cedar and Douglas fir stands approximately 8- 16 years old with shrub layers dominated by salal, red huckleberry, dull Oregon grape, and swordfern.

3.5.1 Wildlife Value

These areas provide browse habitat for deer and marginal nesting and rearing habitat for small birds.

3.6 WEEDY GRASS

This 1.4 Ha community is located on the flat hilltop portion of the site. The area has been logged and all stumps and woody debris have been removed from the area. Immature (2-10 year old) Douglas fir and hemlock trees and heavily browsed red cedar trees are sparsely distributed throughout this area (Photo 12).

3.6.1 Wildlife Value

This area provides grazing habitat for deer.

---

[2] *Fragaria vesca*.

3.7 CLEARED/DISTURBED AREA

This area is comprised of gravel road and cleared flat storage areas.

3.7.1 Wildlife Value

There is no meaningful wildlife habitat provided by this community.

Additional habitat comments are provided by John Cooper, R.P.Bio in Appendix A.

4 CONCLUSIONS

The fact that the majority of the site has been recently harvested has resulted in a site that provides suitable habitat for a variety of common wildlife species, but does not support any significant habitats for rare or sensitive species including raptor nests. A derelict Red-tailed Hawk nest was noted on the property, however it appears to have not been used in about three years. No sign of Turkey Vulture use was found on the property.

That the steeper slope portions on the site were not completely harvested of trees means that these areas provide the most valuable habitat on the site – including intact, moderate-aged forest stands with some valuable larger specimen Douglas fir, arbutus, and bigleaf maple, trees. These areas are subject to the Denman Island OCP Bylaw No. 185 – Development Permit Area No. 2 –Steep Slopes: no cutting or removal of trees is permitted without development approval.

In light of the abovementioned information and noting that there is no legally-mandated protection of any habitats on the site, the proposed density transfer and development of the site is supported.

4.1 RECOMMENDATIONS

1. Protect/maintain vegetation on the two slope community areas (Crescent Bluff and Southwest Slope communities) – this particularly includes larger trees along the crest of steeper slope areas.
2. Protect any larger trees (≥ 0.7 m dbh) on the property. These provide valuable perching opportunities for the soaring bird species (raptors and Turkey Vultures) noted to use the area.
3. Protect the Red-tailed Hawk nest tree in the event it is recolonized at a future date.

Please contact the undersigned if you have any queries.

CURRENT ENVIRONMENTAL



Warren Fleenor, R.P.Bio.

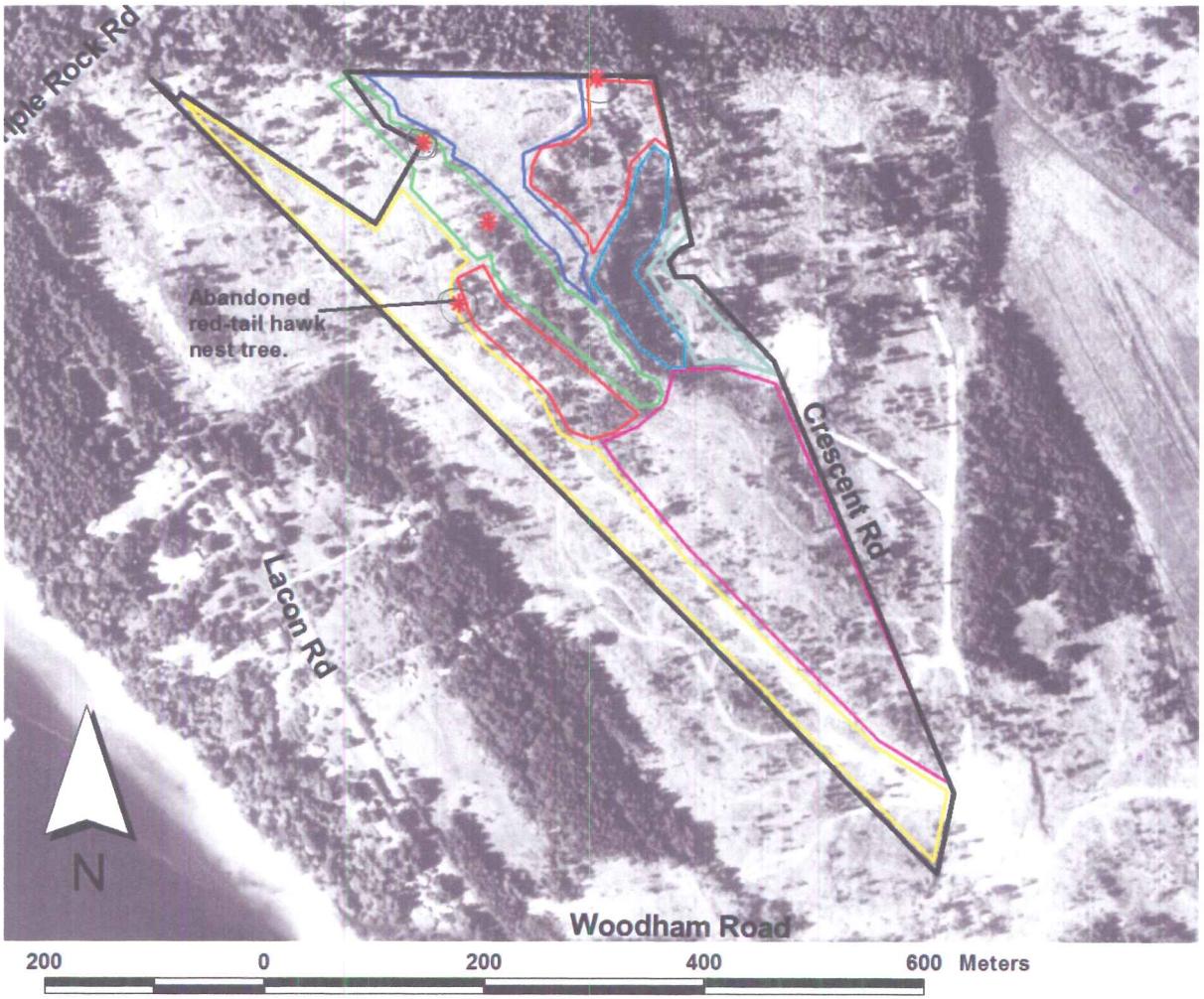


Figure 1. Vegetation Communities

Figure 1. Site map.

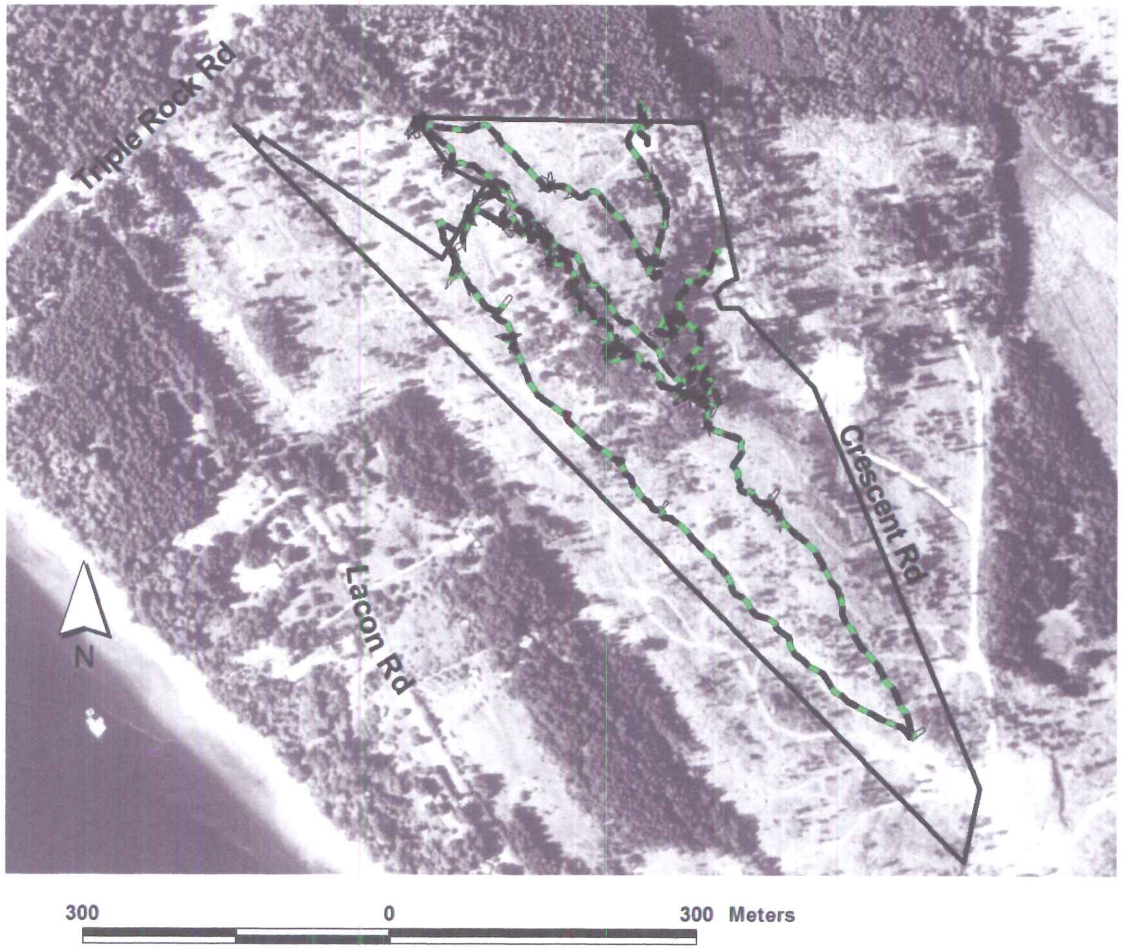


Figure 2. Site Coverage

Figure 2. Site coverage.



Figure 3. BC Ecosystem Explorer known occurrences map search. Polygon 25862 indicates known occurrence of Taylor's Checkerspot butterfly.

5 PHOTOS

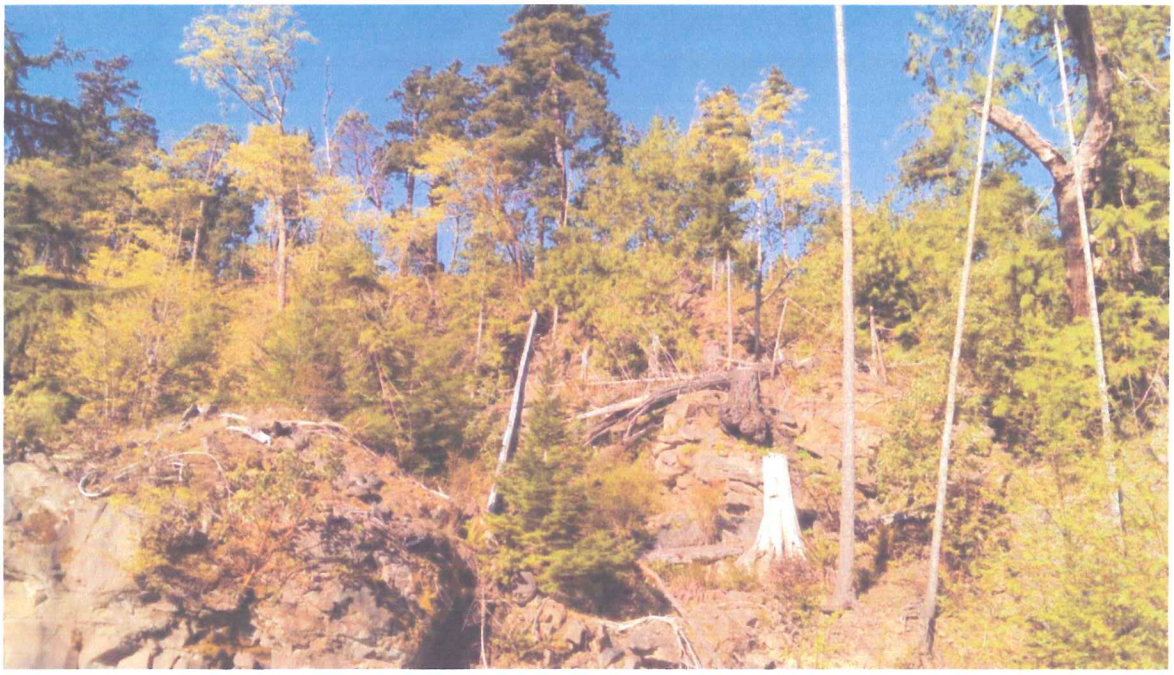


Photo 1. Crescent bluff habitat. Note mature perch trees at top of slope and snag on right of photo.



Photo 2. Typical Crescent bluff habitat.

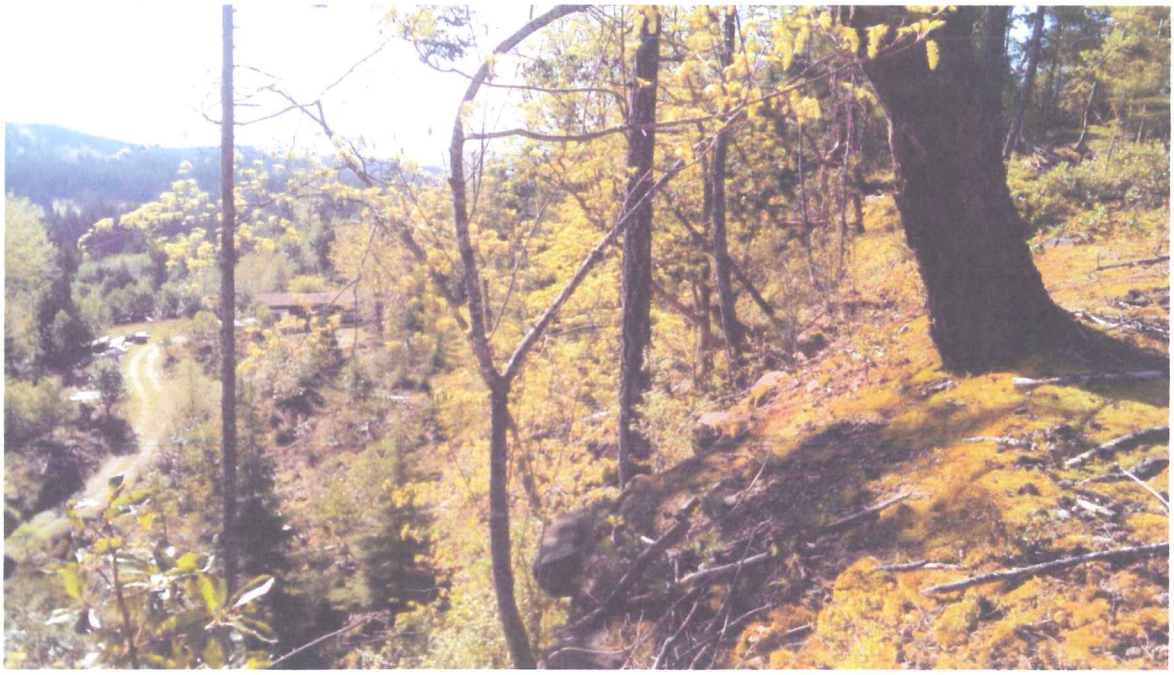


Photo 3. South view from the top of the Crescent Bluffs.



Photo 4. Typical sparsely vegetated SW slope. Note stumps that indicate recent forest harvesting.

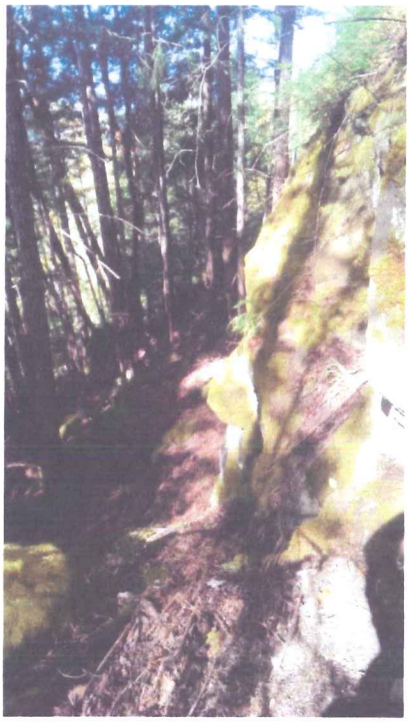


Photo 5. Typical steep bluff section – SW Bluff/Slope.



Photo 6. Veteran Douglas fir noted near the crest of the SW Bluff/Slope.



Photo 7. Dense, uniform stand age forest and access road in the southeastern portion of the SW Boundary community.

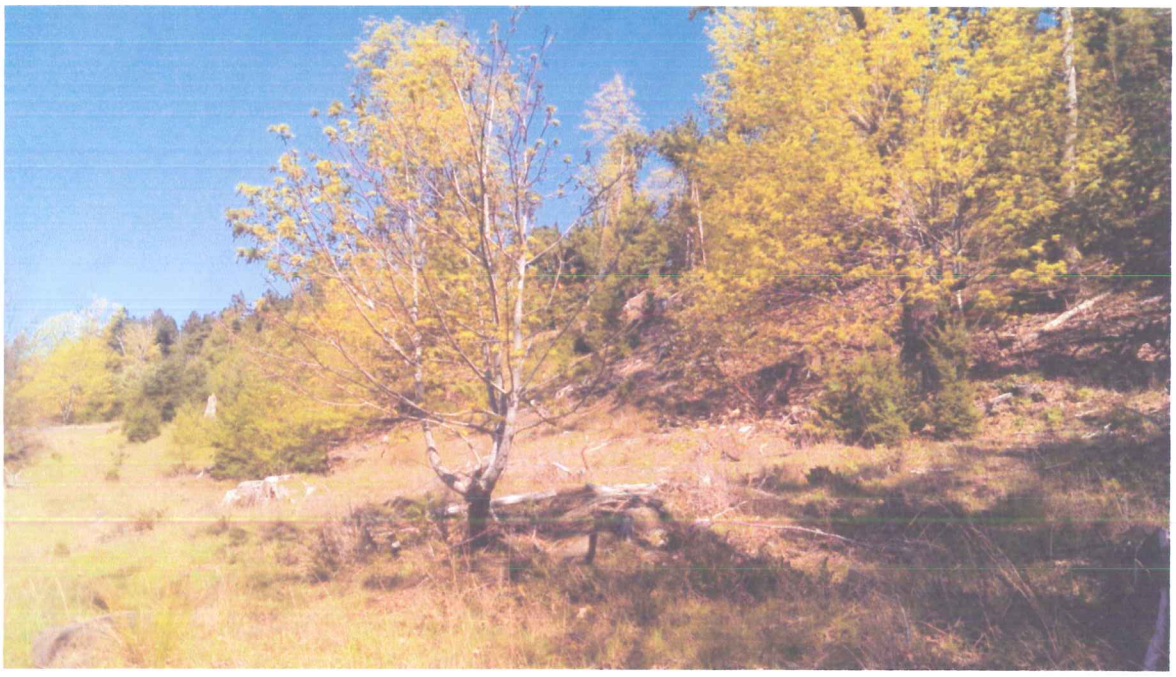


Photo 8. Meadow habitat of SW Boundary community. The abandoned red-tailed hawk nest is located in this area.



Photo 9. Arbutus regen area taken from top of slope.



Photo 10. Arbutus regen area – note immature Douglas fir interspersed with the arbutus.



Photo 11. Upper elevation second growth forest area.



Photo 12. Weedy grass community located on the flat hilltop of the site.

6 APPENDIX A - NOTES FROM JOHN COOPER, R.P.BIO

On April 9, 2015 the subject property was assessed for possible occurrence of wildlife species at risk, with emphasis on birds. Since much of the property had been logged about 16 years ago, there was little old or mature forest remaining. The bigger trees were located entirely on steep slopes and were mainly bigleaf maple and broken Douglas-fir or redcedars. The bird community observed was typical of logged over habitats in the Coastal Douglas-fir (CDF) biogeoclimatic zone. No species at risk were observed and none are expected to nest on the property.

A large bigleaf maple held a dilapidated nest of a Red-tailed Hawk. The nest was known to have been active previously but it appeared to have been inactive for at least 3 years. There was no nest cup visible, the size of the structure was small and the nest was disheveled. While it is possible the nest could be refurbished and used again in the future, there is no legal requirement to protect the nest or nest tree under the Wildlife Act. Cliff habitat was also investigated for possible use by nesting Turkey Vultures. Although several Turkey Vultures were observed flying along the ridgeline of the property, where thermal updrafts provide good conditions for soaring birds, there was no evidence of use of rocky bluffs or boulder areas by Turkey Vultures. There was no sign of Turkey Vulture excrement, or evidence of nesting in any of the potential sites along the bluff areas. Several Bald Eagles were observed flying along the property and there is potential habitat for Cooper's Hawk in the remaining mixed forest, but no evidence of nesting was observed. Habitat for nesting owls was also very limited. I conclude that the property currently does not contain any nesting species of raptor (hawk, eagle, owl) or of the Great Blue Heron.

Songbirds were observed on the property, many of these birds observed were likely in spring migration but some would be nesting birds. Numbers of Northern Flicker were observed exhibiting courtship behavior and one or two pairs likely nest on the property. Other species observed such as Chestnut-backed Chickadee, Song Sparrow, White-crowned Sparrow, Rufous Hummingbird, Purple Finch, and American Robin are common species and likely nest on the property. A few dozen other species of common birds likely occur on the property, but were not observed on the site visit.

Black-tailed Deer sign was abundant, with significant amounts of browsing on redcedars observed. Well-worn game trails and numerous tracks were observed on the steeper slopes. Wetlands do not exist on the property, but there were a couple of ephemeral puddles in an old roadbed. It is possible that Pacific Chorus Frog and some salamander species may use these puddles but the quality of wet habitats is very poor, and of little concern.

In my opinion, the property has considerable amounts of logged over habitat that provides suitable habitat for a variety of common wildlife species, with very little habitat that is rare or of high quality for any species at risk. I have no concerns for effects on wildlife habitat or populations from the proposed development of the property.

Regards

John M. Cooper, RPBio

CEO

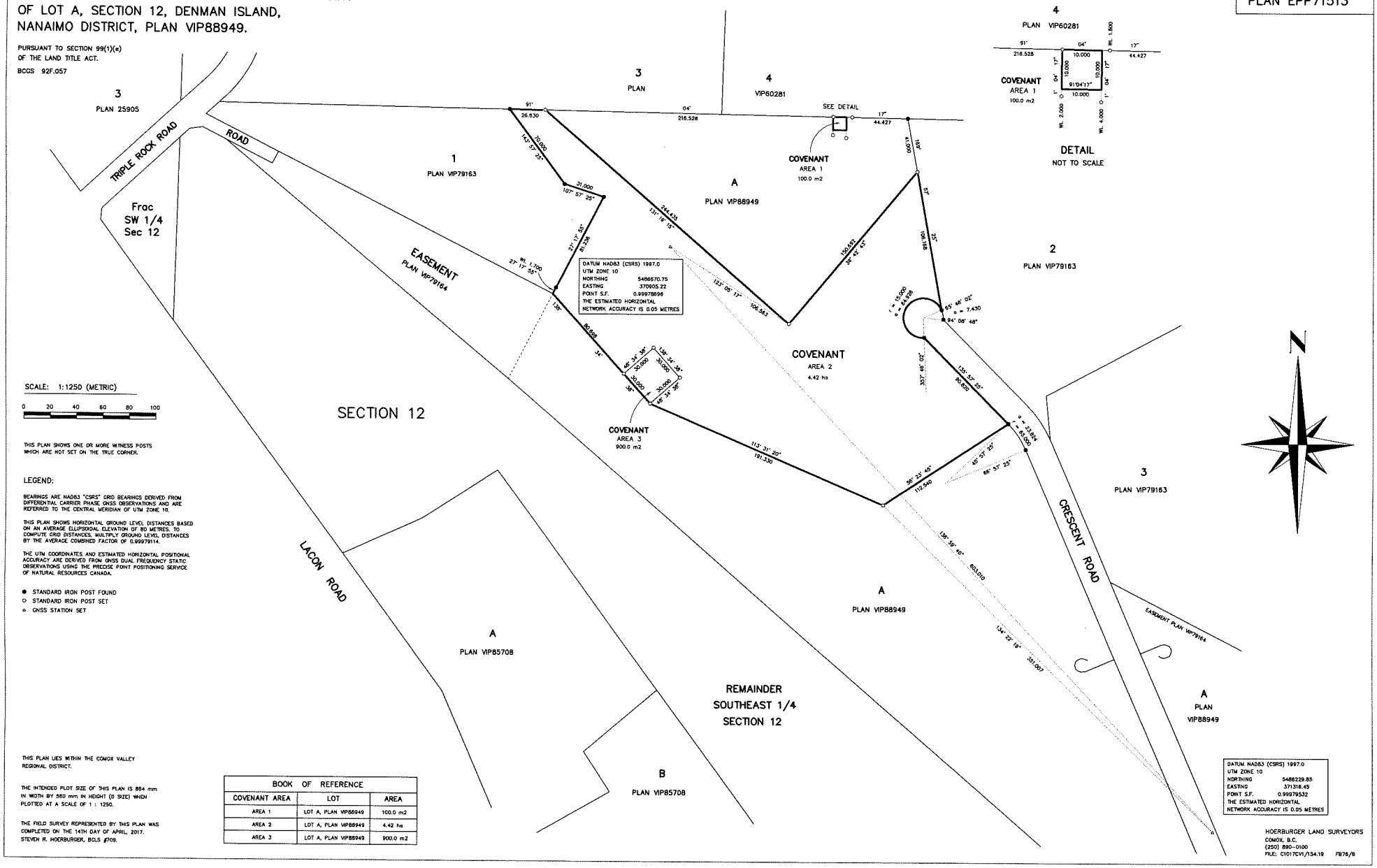
Cooper Beauchesne and Associates Ltd

REFERENCE PLAN OF COVENANT AREAS OVER PART OF LOT A, SECTION 12, DENMAN ISLAND, NANAIMO DISTRICT, PLAN VIP88949.

PLAN EPP71513

PURSUANT TO SECTION 99(1)(e)
OF THE LAND TITLE ACT.

BCGS 92F.057



DATUM NAD83 (CSRS) 1997.0
UTM ZONE 10
NORTHING 5486670.75
EASTING 370905.22
POINT S.F. 0.99978696
THE ESTIMATED HORIZONTAL
NETWORK ACCURACY IS 0.05 METRES

SCALE: 1:1250 (METRIC)

0 20 40 60 80 100

THIS PLAN SHOWS ONE OR MORE WITNESS POSTS WHICH ARE NOT SET ON THE TRUE CORNER.

LEGEND:

BEARINGS ARE NAD83 "CSRS" GRID BEARINGS DERIVED FROM DIFFERENTIAL CARRIER PHASE GNSS OBSERVATIONS AND ARE REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 10.

THIS PLAN SHOWS HORIZONTAL GROUND LEVEL DISTANCES BASED ON AN AVERAGE ELLIPSOIDAL ELEVATION OF 80 METRES. TO COMPUTE GRID DISTANCES, MULTIPLY GROUND LEVEL DISTANCES BY THE AVERAGE COMBINED FACTOR OF 0.99979114.

THE UTM COORDINATES AND ESTIMATED HORIZONTAL POSITIONAL ACCURACY ARE DERIVED FROM GNSS DUAL FREQUENCY STATIC OBSERVATIONS USING THE PRECISE POINT POSITIONING SERVICE OF NATURAL RESOURCES CANADA.

● STANDARD IRON POST FOUND
○ STANDARD IRON POST SET
⍙ GNSS STATION SET

BOOK OF REFERENCE		
COVENANT AREA	LOT	AREA
AREA 1	LOT A, PLAN VIP88949	100.0 m2
AREA 2	LOT A, PLAN VIP88949	4.42 ha
AREA 3	LOT A, PLAN VIP88949	900.0 m2

THIS PLAN LIES WITHIN THE COMOX VALLEY REGIONAL DISTRICT.

THE INTENDED PLOT SIZE OF THIS PLAN IS 864 mm IN WIDTH BY 560 mm IN HEIGHT (D SIZE) WHEN PLOTTED AT A SCALE OF 1 : 1250.

THE FIELD SURVEY REPRESENTED BY THIS PLAN WAS COMPLETED ON THE 14TH DAY OF APRIL, 2017.
STEVEN R. HOERBURGER, BCLS #709.

DATUM NAD83 (CSRS) 1997.0
UTM ZONE 10
NORTHING 5486229.85
EASTING 371316.45
POINT S.F. 0.99979532
THE ESTIMATED HORIZONTAL
NETWORK ACCURACY IS 0.05 METRES

HOERBURGER LAND SURVEYORS
COMOX, B.C.
(250) 890-0100
FILE: C1017CVI/154.19 FB76/8

MEMORANDUM

File No.: DE-DVP-2016.1 (Citizen Design for LUNDBERG)

DATE OF MEETING: May 2, 2017

TO: Denman Island Local Trust Committee

FROM: Teresa Rittemann, Planner 2
Northern Team

SUBJECT: **RE: Restrictive Covenant related to file DE-DVP-2016.1**
Applicant: Citizen Design - Ryan McLeod
Location: 3131 Jemima Rd, Denman Island; PID 000-980-820

RECOMMENDATION

1. **THAT the Denman Island Local Trust Committee receive and accept the draft covenant and priority agreement with respect to file DE-DVP-2016.1, and that Trustees Laura Busheikin and Susan Morrison be assigned as signatories.**

PURPOSE

The purpose of this memorandum is to provide the Denman Island Local Trust Committee (LTC) with the final draft version of a new restrictive covenant which is to be held by the LTC, for their receipt, review, approval, and signature. Following a resolution to approve the covenant, Staff will work with the applicants to co-ordinate the registration of the covenant on title.

BACKGROUND

This new restrictive covenant is a result of the following Denman Island Local Trust Committee resolution passed at the regular business meeting on September 20, 2016.

> **DE-2016-056**
>
> That the Denman Island Local Trust Committee approve Development Variance Permit DE-DVP-2016.1 conditional upon registration of a restrictive covenant that is granted to the Denman Island Local Trust Committee in priority to all financial charges and that is delivered in a form satisfactory to the Denman Island Local Trust Committee and that stipulates the following:
>
> a) No removal of vegetation and no soil disturbance between the septic field and Graham Lake as recommended by H20 Environmental Ltd. and Aqua-Tex Scientific Consulting Ltd.;
> b) That the proposed sewerage system is designed, installed and appropriately maintained and monitored according to a "Maintenance Plan" prepared in accordance with *BC Sewerage System Regulation* and the *Sewerage System Standard Practice Manual*; and
> c) That the proposed construction and future use of the property is in accordance with the report, "*3131 Jemima Road Denman Island Development Permit Report: Streams, Lake and Wetlands*", prepared by Aqua-Tex Scientific Consulting Ltd., dated March 17, 2016.

Therefore, this application has the LTC's approval, with the one condition being that a restrictive covenant is registered on title, with the above stipulations. Attachment 1 is a copy of the final draft version of this covenant for the LTC's receipt, review, and approval.

On April 28, 2017, Staff received the final draft version of the restrictive covenant, which is included with this report as Attachment 1 for the LTC's receipt, review, and approval. Staff, Islands Trust legal counsel, and the applicant and their solicitor are all satisfied that this version of the covenant is ready for registration on title.

NEXT STEPS

Following signature of the covenant by the LTC, Staff will work with the applicants to co-ordinate the registration of the covenant on title.

Submitted By:	Teresa Rittemann Planner 2	May 1, 2017
Concurrence:	Ann Kjerulf, MCIP, RPP Regional Planning Manager	May 1, 2017

ATTACHMENTS

1. Copy of priority agreement of covenant for file DE-DVP-2016.1
2. Copy of draft covenant for file DE-DVP-2016.1

LAND TITLE ACT
FORM C (Section 233) CHARGE
GENERAL INSTRUMENT - PART 1 Province of British Columbia

Your electronic signature is a representation that you are a subscriber as defined by the Land Title Act, RSBC 1996 c.250, and that you have applied your electronic signature in accordance with Section 168.3, and a true copy, or a copy of that true copy, is in your possession.

1. APPLICATION: (Name, address, phone number of applicant, applicant's solicitor or agent)

Rosealyn Jacobs, Barrister & Solicitor
YOUNG ANDERSON
1616 - 808 Nelson Street
Vancouver BC V6Z 2H2
Phone: (604) 689-7400
File: 2-780

Deduct LTSA Fees? Yes ☑

2. PARCEL IDENTIFIER AND LEGAL DESCRIPTION OF LAND:
[PID] [LEGAL DESCRIPTION]

000-980-820 **LOT 3, SECTION 13, DENMAN ISLAND, NANAIMO DISTRICT, PLAN 38716**

STC? YES ☐

3. NATURE OF INTEREST CHARGE NO. ADDITIONAL INFORMATION

SEE SCHEDULE

4. TERMS: Part 2 of this instrument consists of (select one only)
(a) ☐ Filed Standard Charge Terms D.F. No. (b) ☑ Express Charge Terms Annexed as Part 2
A selection of (a) includes any additional or modified terms referred to in Item 7 or in a schedule annexed to this instrument.

5. TRANSFEROR(S):

1018128 B.C. LTD., INC. NO. BC1018128

6. TRANSFEREE(S): (including postal address(es) and postal code(s))

DENMAN ISLAND LOCAL TRUST COMMITTEE
A LOCAL TRUST COMMITTEE INCORPORATED PURSUANT TO THE ISLANDS TRUST ACT
SUITE 200, 1627 FORT STREET
VICTORIA BRITISH COLUMBIA
V8R 1H8 CANADA

7. ADDITIONAL OR MODIFIED TERMS:
N/A

8. EXECUTION(S): This instrument creates, assigns, modifies, enlarges, discharges or governs the priority of the interest(s) described in Item 3 and the Transferor(s) and every other signatory agree to be bound by this instrument, and acknowledge(s) receipt of a true copy of the filed standard charge terms, if any.

Officer Signature(s)

_____

(as to all signatures)

Execution Date

Y	M	D
17		

Transferor(s) Signature(s)

1018128 B.C. LTD., (by its authorised signatory(ies):

_____
NAME:

_____
NAME:

OFFICER CERTIFICATION:
Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.

LAND TITLE ACT
FORM D

EXECUTIONS CONTINUED

Officer Signature(s)	Execution Date			Transferor / Borrower / Party Signature(s)
	Y	M	D	
	17			DENMAN ISLAND LOCAL TRUST COMMITTEE (by its authorised signatory(ies):

OFFICER CERTIFICATION:
Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.

LAND TITLE ACT
FORM E

SCHEDULE PAGE 3 OF 3 PAGES

NATURE OF INTEREST	CHARGE NO.	ADDITIONAL INFORMATION
Covenant		

NATURE OF INTEREST	CHARGE NO.	ADDITIONAL INFORMATION

NATURE OF INTEREST	CHARGE NO.	ADDITIONAL INFORMATION

NATURE OF INTEREST	CHARGE NO.	ADDITIONAL INFORMATION

NATURE OF INTEREST	CHARGE NO.	ADDITIONAL INFORMATION

NATURE OF INTEREST	CHARGE NO.	ADDITIONAL INFORMATION

PART 2 – TERMS OF INSTRUMENT

THIS AGREEMENT dated for reference _____, 2017 is

BETWEEN:

1018128 B.C. Ltd., Inc. No. BC1018128

(the "Owner")

AND:

Denman Island Local Trust Committee, a local trust committee under the *Islands Trust Act*

(the "DILTC")

WHEREAS:

A. The Owner is the registered owner of the Land and premises in Denman Island, British Columbia, legally described as:

PID: 000-980-820
LOT 3, Section 13, Denman Island, Nanaimo District, Plan 38716

(the "Land").

B. Under s. 219 of the *Land Title Act*, R.S.B.C. 1996, c. 250 (the "*Land Title Act*") a covenant, whether of a negative or positive nature in respect of the use of land, or, that land is or is not to be built on, in favour of the DILTC, may be registered as a charge against the title to the land and is enforceable against the Owner and its successor in title, even if the covenant is not annexed to land owned by the DILTC.

C. Due to an unnamed creek that is situated on and runs through the Land and the Land's proximity to Graham Lake, the Land is located in Development Permit Area No. 2: Steep Slopes (Graham Ridge) and Development Permit Area No. 4: Streams, Lakes and Wetlands (the "Development Permit Areas").

D. Denman Island Land Use Bylaw No. 186, 2008 (the "Land Use Bylaw") requires an owner of property located in the Development Permit Areas to apply for a development permit from the DILTC prior to any development, subdivision or land alteration of the property. The Proposed Development (defined below) was deemed to be outside the Development Permit Areas and therefore no development permit was required.

E. Due to the topography of the Land, there is no practical location to place a new sewerage system on the Land that would adhere to the setback requirements set out in the Land Use Bylaw.

F. The Owner has applied for a development variance permit under Islands Trust file number DE-DVP-2016.1, to vary the setback to Graham Lake, as required by the Land Use Bylaw, to permit the following development: to reconstruct the existing single-family dwelling, and construct and install a new sewerage system (the "Proposed Development"). A condition of this Permit is the registration of this Agreement.

G. It is the intention of the parties that the Owner will be authorized to construct and install on the Land the new sewerage system with reduced setback requirements as long as the Owner constructs and maintains the sewerage system and uses the Land in accordance with the covenants contained in this Agreement.

NOW THEREFORE in consideration of the covenants herein contained, the payment of the sum of One ($1.00) Dollar paid by DILTC to the Owner, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties covenant and agree, pursuant to Section 219 of the *Land Title Act* as follows:

1. **Definitions –** In this Agreement:

   (a) "Ecological Report" means "3131 Jemima Road Denman Island Development Permit Report: Streams, Lakes and Wetlands", prepared by Tracy Motyer, B.Sc., R.B. Tech. and Patrick Lucey, M.Sc., R.P. Bio, C.Biol, MRSB for Citizen Design Building Inc., dated March 17, 2016, a copy of which is attached to this Agreement as Schedule "A";

   (b) "Erosion and Sediment Control Plan" means "3131 Jemima Road Denman Island Erosion and Sediment Control Plan", prepared by Citizen Design Building Inc., and reviewed by Tracy Motyer, B.Sc., R.B. Tech., Aqua-Tex Scientific Consulting Ltd., dated April 24, 2017, a copy of which is attached to this Agreement as Schedule "B";

   (c) "Hydrogeologic Investigation" means the limited hydrogeologic investigation report prepared by H_20 Environmental Ltd. for Citizen Design Building Inc., dated March 8, 2016, and the addendum to the limited hydrogeologic investigation report, dated June 24, 2016, copies of which are attached to this Agreement as Schedule "C";

   (d) "Maintenance Plan" means the preliminary maintenance plan prepared by H_20 Environmental Ltd., undated, a copy of which is attached to this Agreement as Schedule "D", and, once a maintenance plan is provided to

the Owner and filed with the health authority in accordance with section 9 of the *Sewerage System Regulation* which is prepared in accordance with the "Sewerage System Standard Practice Manual", will mean the maintenance plan that is provided and filed for the Sewerage System in accordance with section 9 of the *Sewerage System Regulation*;

(e) "No Disturbance Area" means all portions of the Land labelled as "Green hatched areas: No removal of vegetation and no soil disturbance between the septic field and Graham Lake as recommended by H20 Environmental Ltd. and Aqua-Tex Scientific Consulting Ltd." that is shaded in green on the site plan prepared by Citizen Design Build Inc., dated April 24, 2017, a copy of which is attached to this Agreement as Schedule "E"; and

(f) "Sewerage System" means the proposed new sewerage system to be constructed on the Land as set out in the Ecological Report, Erosion and Sediment Control Plan, Hydrogeologic Investigation and Maintenance Plan, including any septic tanks, dispersal fields, infiltration fields, treatment facilities and another other tanks, structures, fields or facilities related to the sewerage system; and

(g) "*Sewerage System Regulation*" means *Sewerage System Regulation*, B.C. Reg. 326/2004.

2. **Owner Covenants –** The Owner covenants and agrees with the DILTC that:

(a) the Land will not be used, occupied or built on except in accordance with the terms of this Agreement;

(b) any construction or use of the Land will be in accordance with the recommendations set out in the Ecological Report and the Erosion and Sediment Control Plan;

(c) the Owner will, concurrent with the development and construction of the Proposed Development, install and construct the Sewerage System;

(d) the Owner will, at all times, design, install, construct, maintain and monitor the Sewerage System in accordance with the Maintenance Plan;

(e) during and after development and construction of the Proposed Development or the Sewerage System, the Land or any buildings on the Land will not be used for residential purposes unless the Sewerage System is designed, installed, constructed, maintained and monitored in accordance with the Maintenance Plan;

(f) the Owner will not, without prior written consent of the DILTC, which

consent will be in the DILTC's sole discretion:

(i) cut down, modify, alter or otherwise remove in any way any trees, shrubs, ground cover, or any other form of plant life; or

(ii) dig up, remove, replace, modify, alter, excavate or otherwise disturb the soil in any way

that is located in the No Disturbance Area as recommended in the Ecological Report, Erosion and Sediment Control Plan and the Hydrogeologic Investigation; and

(g) the Owner will not do or knowingly permit to be done any act or thing which will interfere with or obstruct the Sewerage System from operating in accordance with this Agreement.

3. **Bylaw to the Contrary –** This Agreement will restrict the use of the Land in the manner provided herein notwithstanding any right or permission to the contrary contained in any bylaw of the DILTC.

4. **No Tort Liability –** This Agreement creates only contractual obligations and obligations arising out of the nature of this document as a covenant under seal. No tort obligations or liabilities of any kind exist between the parties in connection with the performance of, or any default under or in respect of, this Agreement. The intent of this section is to exclude tort liability of any kind and to limit the parties to their rights and remedies under the law of contract and under the law pertaining to covenants under seal.

5. **Joint and Several** – If at any time more than one person (as defined in the *Interpretation Act,* R.S.B.C. 1996, c. 238) owns the Land, each of those persons will be jointly and severally liable for all of the obligations of the Owner under this Agreement.

6. **Indemnity –** The Owner hereby releases the DILTC, and indemnifies and saves the DILTC harmless, from and against any and all actions, causes of actions, suits, claims (including claims for injurious affection), costs (including legal fees and disbursements), expenses, debts, demands, losses (including economic loss) and liabilities of whatsoever kind arising out of or in any way due or relating to the granting or existence of this Agreement, the restrictions or obligations contained in this Agreement or the performance or non-performance by the Owner of this Agreement that the DILTC is or may become liable for, incur or suffer.

7. **No Obligation to Enforce –** The rights given to the DILTC by this Agreement are permissive only and nothing in this Agreement imposes any legal duty of any kind on the DILTC to anyone, or obliges the DILTC to enforce this Agreement, to

perform any act or to incur any expense in respect of this Agreement.

8. **Specific Relief –** Because of the public interest in ensuring that all of the matters described in this Agreement, and the provisions of all applicable laws, are complied with, the public interest strongly favours the award of a prohibitory or mandatory injunction, or an order for specific performance or other specific relief, by the Supreme Court of British Columbia at the instance of the DILTC, in the event of an actual or threatened breach of this Agreement.

9. **Discretion –** Wherever in this Agreement the approval of the DILTC is required, some act or thing is to be done to the DILTC's satisfaction, the DILTC is entitled to form an opinion, or the DILTC is given a sole discretion:

   (a) the relevant provision is not deemed to have been fulfilled or waived unless the approval, opinion or expression of satisfaction is in writing signed by a representative of the DILTC;

   (b) The approval, opinion or satisfaction is in the discretion of DILTC in its sole and unfettered discretion; and

   (c) DILTC is under no public law duty of fairness or natural justice and may do any of those things in the same manner as if it were a private party and not a public body.

10. **No Effect on Powers –** This Agreement does not

   (a) affect or limit the discretion, rights or powers of the DILTC under any enactment or at common law, including in relation to the use or subdivision of the Land;

   (b) affect or limit any enactment applying to the Land; or

   (c) relieve the Owner from complying with any enactment, including in relation to the use or subdivision of the Land.

11. **Notice –** Any notice to be given pursuant to this Agreement must be in writing and delivered personally or sent by registered mail. The addresses of the parties for the purpose of notice are the addresses on the first page of this Agreement and, in the case of any subsequent Owner, the address will be the address shown on the title to the Land in the Land Title Office. If notice is delivered personally, it may be left at the relevant address in the same manner as ordinary mail is left by Canada Post and is to be deemed given when delivered. If notice is sent by mail, it will be considered given 5 days after mailing. In the case of any strike or other event causing disruption of ordinary Canada Post operations, a party giving notice for the purposes of this Agreement must do so by delivery as provided in this section. A party may change its address for the purposes of this

section by giving notice to the other party in accordance with this section.

12. **Runs with the Land –** Every obligation and covenant of the Owner in this Agreement constitutes both a contractual obligation and a covenant granted under section 219 of the *Land Title Act* in respect of the Land. This Agreement burdens and runs with, and binds the successors in title to, the Land and each and every part into which the Land may be subdivided or consolidated by any means.

13. **Priority –** The Owner will, at the Owner's expense, do or cause to be done all acts reasonably necessary to register this Agreement against title to the Land with priority over all financial charges, liens and encumbrances registered or pending registration at the time of application for registration of this Agreement against the title to the Land.

14. **Waiver –** An alleged waiver of any breach of this Agreement is effective only if it is an express waiver in writing of the breach in respect of which the waiver is asserted. A waiver of a breach of this Agreement does not operate as a waiver of any other breach or continuing breach of this Agreement.

15. **Further Assurances –** The Owner must do everything reasonably necessary to give effect to the intent of this Agreement, including execution of further instruments.

16. **Interpretation –** In this Agreement:

    (a) reference to the singular includes a reference to the plural, and vice versa, unless the context requires otherwise;

    (b) article and section headings have been inserted for ease of reference only and are not to be used in interpreting this Agreement;

    (c) the term "enactment" has the meaning given to it under the *Interpretation Act*, R.S.B.C. 1996, c. 238 on the reference date of this Agreement;

    (d) reference to any enactment includes any regulations, orders or directives made under the authority of that enactment;

    (e) reference to any enactment is a reference to that enactment as consolidated, revised, amended, re-enacted or replaced, unless otherwise expressly provided;

    (f) reference to a particular numbered section or article, or to a particular lettered Schedule, is a reference to the correspondingly numbered or lettered article, section or Schedule of this and any Schedules to this

agreement form part of this Agreement; and

(g) time is of the essence.

17. **Enurement** – This Agreement and each and every provision hereof and will enure to the benefit of and be binding upon the parties and their respective heirs, executors, administrators, successors and assigns, as the case may be.

18. **Severability** – If any part of this Agreement is held to be invalid, illegal or unenforceable by a court having the jurisdiction to do so, that part is to be considered to have been severed from the rest of this Agreement and the rest of this Agreement remains in force unaffected by that holding or by the severance of that part.

19. **Entire Agreement** – This Agreement is the entire Agreement between the parties regarding its subject.

20. **Governing Law** – This Agreement shall be governed by and construed in accordance with the laws of the Province of British Columbia.

IN WITNESS WHEREOF the parties acknowledge that this Agreement has been duly executed and delivered by the parties executing Part 1 of Form C attached to and forming part of this Agreement.

Schedule "A" – Ecological Report

3131 Jemima Road
Denman Island

Development Permit Report: Streams, Lakes and Wetlands



Prepared for: Citizen Design Build Inc. ***March 17, 2016***

Prepared By:
Tracy Motyer, B.Sc., R.B. Tech.
Patrick Lucey, M.Sc., R.P. Bio, C.Biol, MRSB

Aqua-Tex
Scientific Consulting Ltd. (1993)

COOPERATIVE riparian RESTORATION

Table of Contents

1. Project Overview 3
Description of Proposed Development 3

2. Riparian: DPA #4 Streams, Lakes & Wetlands 5
Fisheries Resources and Geographical Context 5
Observations of Stream Channels and Vegetation 8
Graham Lake 8
Cicero Slough Creek 11
Site Plan 16

3. Recommendations 17
Measures - Protection of the Riparian Retention Area and Encroachment 17
Measures - Danger Trees in the SPEA 17
Measures - Windthrow 21
Measures - Septic 22
Measures - Slope Stability 22
Measures - Sediment and Erosion Control During Construction/Pollution Prevention Plan 23
Measures - Stormwater Management 24
Measures - Environmental Monitoring During Construction 25
References 27

4. Appendix A: RAR Assessment Forms 28
Results of Riparian Assessment (SPEA width) 29
Cicero Slough Creek 29
Graham Lake 31
Measures to Protect and Maintain the SPEA 33
Professional Opinion 34

1. Project Overview

This report details the results of an ecological assessment of the subject property at 3131 Jemima Road, located on Denman Island (Figure 2). The purpose of the ecological assessment was to establish a baseline of site conditions and review proposed redevelopment plans for the property with particular attention to two Development Permit Areas (DPA): #2 Steep Slopes and #4 Streams, Lakes and Wetlands. This report addresses riparian ecosystems and Stream, Lakes and Wetlands DPA.

Description of Proposed Development

Redevelopment plans for the site include: reconstruction of the existing single-family dwelling with an expanded footprint, construction of a new guest house, construction of a new office outbuilding, removal of the existing shed and replacement with a new workshop, and installation of a new septic facility (see Site Plan).

This development permit area assessment and Riparian Area Regulation (RAR) assessment was triggered by a proposal to undertake development in the Stream, Lakes and Wetlands DPA within the 30m Riparian Assessment Area (RAA) for Cicero Slough Creek.



Figure 1: Existing house and gardens. The redevelopment plans for the property include replacement of this single-family dwelling with a new home on an expanded footprint.



Figure 2: Overview map showing the location of the subject property (red polygon & yellow arrow) on Denman Island. Image source: GoogleEarth.

2. Riparian: DPA #4 Streams, Lakes & Wetlands

Fisheries Resources and Geographical Context

The subject property at 3131 Jemima Road lies within the Graham Lake Watershed and abuts the shoreline of Graham Lake. One stream, Cicero Slough Creek, flows southeast through the property and into Graham Lake (Figure 3). Water from Graham Lake flows down Graham Lake Creek in a southeasterly direction, discharging into Lambert Channel on the east side of Denman Island.

It should be noted that Cicero Slough Creek is not a gazetted stream name. This unnamed creek flows from Cicero Slough to Graham Lake and has been labeled Cicero Slough Creek for ease of discussion.

The subject property extends from Jemima Road to the shoreline of Graham Lake. The property has been extensively logged in the past; numerous old logging roads, now trails, traverse the landscape. The property is currently developed with one single-family dwelling, associated gardens, parking area and a small shed. The site is largely vegetated with a regenerating stand or second (or third) growth trees. Presently, the property is accessed through a long shared driveway that traverses the adjacent properties to the east (Figure 4). The driveway crosses Cicero Slough Creek in an existing wood log culvert (remnant of logging activities).

Graham Lake is a fish-bearing lake. A search through the Provincial Fisheries Information Summary System (FISS) provided fish observation information for Graham Lake and indicated that the lake was historically (1924) stocked with cutthroat trout (*Oncorhynchus clarki clarki*) (MOE, 2016). No other fish species observations were listed in the FISS system; however, scientific fish collection permit records indicate that the University of British Columbia, Zoology Department, undertook a research project on the ecology and evolution of threespine stickleback (*Gasterosteus aculeatus)* in a number of small lakes and included fish sampling of threespine stickleback in Graham Lake. Fish collection permit records also revealed a graduate level study of prickly sculpin (*Cottus asper*) through the University of Calgary that included sampling of prickly sculpin in Graham Lake. Finally, it is worth noting that downstream of Graham Lake, Graham Lake Creek is known to support populations of coho salmon (*Oncorhynchus kisutch*).

Though fisheries information could not be found for Cicero Slough or Cicero Slough Creek, Cicero Slough Creek is assumed to be fish bearing, given its direct connection to Graham Lake. No barriers to the upstream migration of fish were observed during the field assessment of Cicero Slough Creek. No fish trapping studies have been conducted to verify the presence or absence of fish in Cicero Slough Creek. Given that Cicero Slough Creek is assumed to be fish-bearing and is directly connected to known fish-bearing waters downstream (Graham Lake), it is subject to the Riparian Area Regulation (RAR).

An RAR assessment was undertaken and documented using the forms in the Provincial Methodology. Given that the Islands Trust is currently in the process of amending the Land use Bylaw with respect to the RAR at this time, the RAR report has not been uploaded to the Ministry website. The RAR forms and site plan are included in Appendix A.

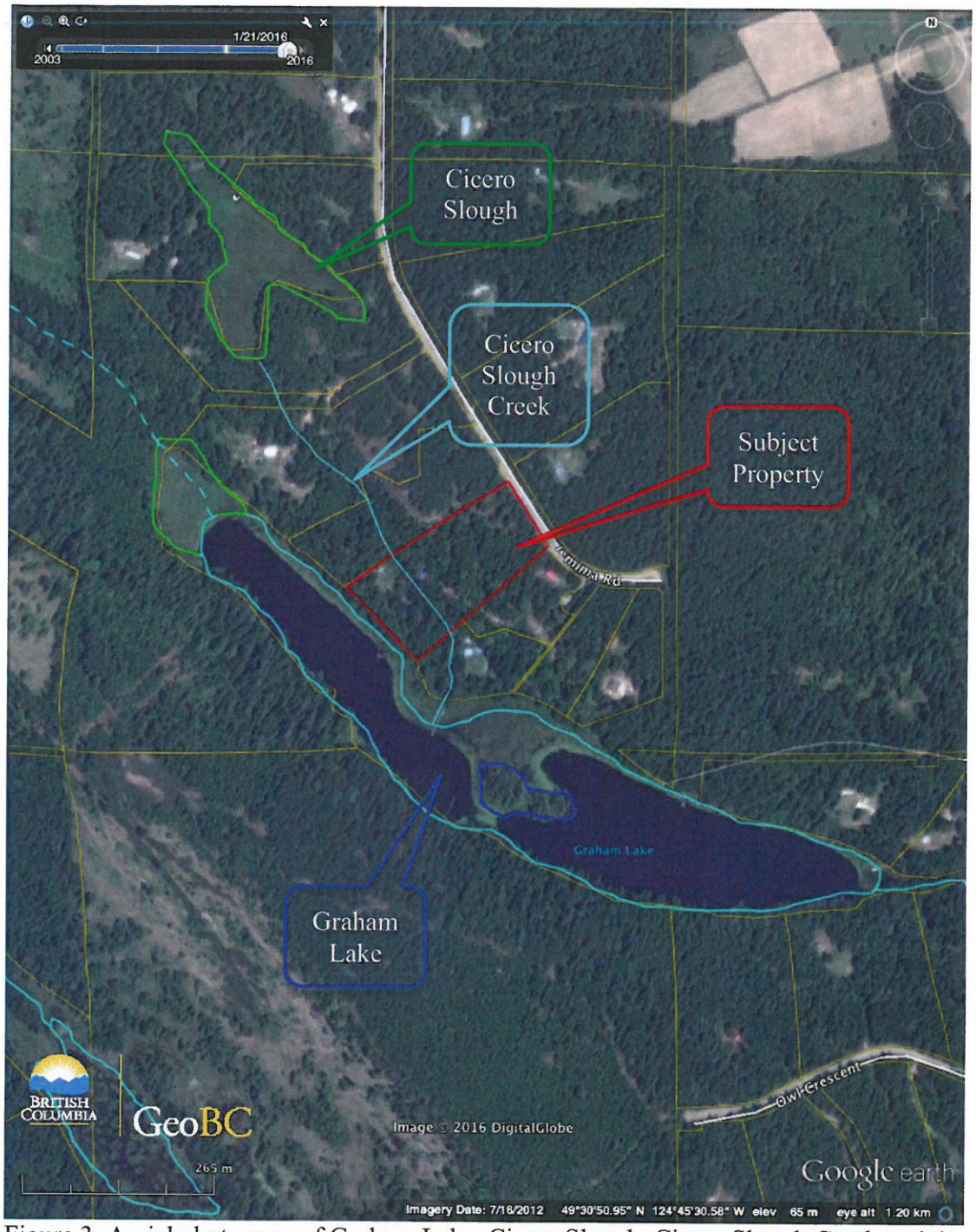


Figure 3: Aerial photo map of Graham Lake, Cicero Slough, Cicero Slough Creek and the subject property at 3131 Jemima Road (outlined in red) showing the configuration of the aquatic landscape features. Image source: GoogleEarth.



Figure 4: Aerial photograph of the subject property (outlined in red) showing the current site configuration. Image source: Map Islands Trust (MapIT).

Observations of Stream Channels and Vegetation

Graham Lake

Graham Lake has a surface area of approximately 15.4ha and an estimated catchment area of approximately 1km^2. It is used as a domestic water supply for the Graham Lake Improvement District (Koers & Associates, 2009). The lake is characterized by two depressions linked together by a shallow wetland area. Graham Lake has a thick wetland fringe around the perimeter, particularly on the north bank, which contains a significant amount of large woody debris and supports emergent plants. Where Cicero Slough Creek flows into Graham Lake (on the adjacent property to the east) it forms a delta with multiple stream channels flowing through wetland vegetation. This thick fringe of wetland plants stabilizes the lakeshore and protects the shoreline from potential erosion which could be caused by wind or wave events or overland flow.

Vegetation species present in the riparian area of Graham Lake include: western redcedar (*Thuja plicata*), Douglas-fir (*Pseudotsuga menziesii),* western hemlock (*Tsuga heterophylla),* red alder (*Alnus rubra),* black hawthorn (*Crataegus douglasii),* willows (*Salix spp.),* hardhack (*Spiraea douglasii)*, salmonberry (*Rubus spectabilis),* baldhip rose (*Rosa gymnocarpa),* sedges (*Carex spp.),* rushes (*Juncus spp.*), bracken fern (*Pteridium aquilinum),* salal *(Gaultheria shallon)* and cattail (*Typha latifolia).*

The High Water Mark of the lake was identified by the assessment team to establish the 30m Riparian Assessment Area (RAA) and 15m Streamside Protection and Enhancement Area (SPEA), under the provincial RAR. It should be noted, that no new development is proposed within the 30m RAA or the 15m SPEA for Graham Lake. There are some existing footpaths present within the RAA, located on old logging roads, and a small dock which will be retained. Graham Lake has been included in this detailed RAR assessment for completeness and as a guide to potential future development on the site.

The area of land between the proposed development and the shoreline of Graham Lake is well vegetated with a regenerating stand of second (or third) growth conifers and a well-developed shrub understory. This area provides a good vegetated buffer between proposed development activities which will utilize an existing disturbed area which lies a minimum of 40m from the lakeshore.

The SPEA for Graham Lake is 15m. Additionally there is a covenant on the property (Covenant K114311) that prescribes no buildings to be sited within 7.5m and no disturbance of vegetation within 7.0m of the natural boundary of Graham Lake. Both of these setbacks will be exceeded, as there is no development or disturbance of vegetation proposed within 40m of Graham Lake.

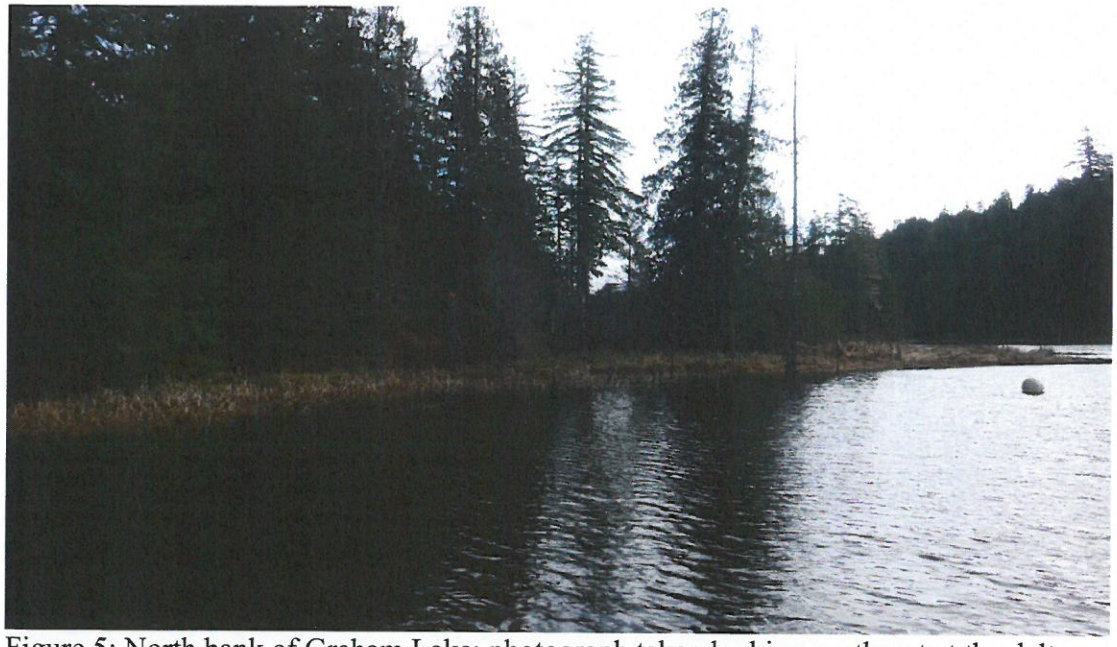


Figure 5: North bank of Graham Lake; photograph taken looking southeast at the delta from Cicero Slough Creek.



Figure 6: Shoreline of Graham Lake; photograph taken from the subject property looking west across the lake. Note the woody debris and fringe of emergent vegetation around the lake perimeter.



Figure 7: Shoreline of Graham Lake; photograph taken looking north along the shoreline of the subject property. Note the woody debris and fringe of emergent vegetation around the lake perimeter. Also of note, on the day of assessment, the lake had a moderate degree of turbidity following a period of heavy rainfall.



Figure 8: An existing lakefront path has been established along an old logging road and parallels the shoreline of Graham Lake.



Figure 9: Existing footpath from the home/garden to Graham Lake (southeast path). This is one of two existing footpaths from the development to the lake. All of the existing footpaths have been established on old logging roads.

Cicero Slough Creek

Cicero Slough Creek is a significant tributary to Graham Lake. The headwaters of this stream are Cicero Slough, a large wetland located northwest of the subject property. Historically, Cicero Slough was dredged to enable its use as a storage reservoir for a large water license (Koers & Associates, 2009).

Cicero Slough Creek flows southeast through the subject property in a ravine and flows into Graham Lake on the adjacent property to the east. No barriers to the upstream migration of fish were observed. Characteristic of most of the streams on Denman Island, Cicero Slough normally lacks surface flow for at least a five-month period between June to October. At the time of the field assessment (January 2016), the creek was flowing with a significant volume and velocity – See photographs below.

Cicero Slough Creek is a steep and deeply entrenched channel flowing through glacial till. Streambed materials are primarily gravel with lesser amounts of boulders, cobble, and sand; a few areas of exposed bedrock were observed. This reach is a cascading channel with step pools supported by large woody debris and boulders.

The banks of the stream channel contain several veteran stumps, logged with springboards and fire-scared from a forest fire which occurred after the logging. It is likely that stream downcutting was accelerated by logging activities, creating the deep ravine we see today. Undercut banks were observed in several locations throughout the property suggesting that the stream has reached hardpan or bedrock and is trying to widening itself by eroding and undercutting the banks. Some of the trees on the ravine banks exhibit buttress wood.

Vegetation species present in the riparian area of Cicero Slough Creek include: western redcedar (*Thuja plicata*), Douglas-fir (*Pseudotsuga menziesii),* western hemlock (*Tsuga heterophylla),* grand fir (*Abies grandis),* red alder (*Alnus rubra),* bigleaf maple (*Acer macrophyllum),* sword fern (*Polystichum munitum),* dull Oregon-grape (*Mahonia nervosa),* oceanspray (*Holodiscus discolor),* red huckleberry (*Vaccinium parvifolium),* common horsetail (*Equisetum arvense),* salal (*Gaultheria shallon),* and red elderberry (*Sambucus racemosa).*

The existing driveway crosses the stream at the approximate mid-point of the property. The stream crossing structure is an old log crib culvert, likely a remnant of logging activities, and appears to be in good condition. Similar log crib culverts are present immediately upstream and downstream of the subject property. The new proposed development will utilize this existing stream crossing; replacement of the structure is not anticipated. Future replacement of the log crib culvert will require a Section 9 Water Sustainability Act permit.

The SPEA for Cicero Slough Creek is 10m. Additionally, there is a covenant on the property (Covenant K114311) that prescribes no buildings to be sited within 15.0m and no disturbance of vegetation within 6.1m of Cicero Slough Creek. Both of these setbacks will be achieved, as there is no new development or disturbance of vegetation proposed within 15.0m of Cicero Slough Creek.



Figure 10: Cicero Slough Creek near the downstream (southeast) property boundary. Photograph taken looking upstream shows some undercutting of the streambank.



Figure 11: Photograph looking upstream at Cicero Slough Creek shows the shape of the ravine near the downstream (southeast) property boundary.



Figure 12: Large wood debris present in Cicero Slough Creek is dominated by old veteran logs which are almost rotted out; remnants of the historical logging activities.



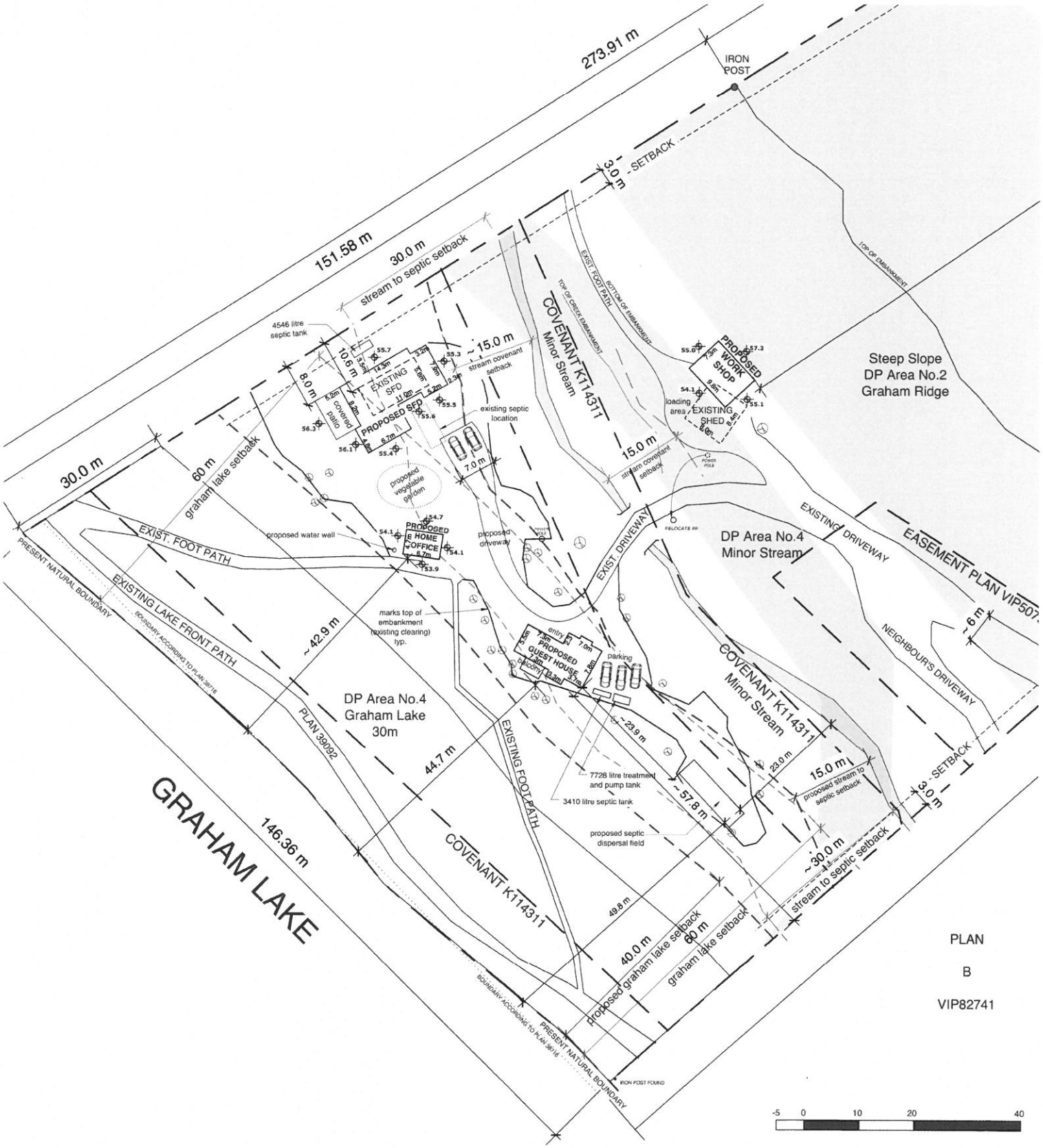
Figure 13: Photograph of Cicero Slough Creek looking downstream from the driveway crossing. This portion of the reach has the lowest stream gradient. Note the size of the veteran stump compared to the existing trees.



Figure 14: Upstream of the driveway crossing, adjacent to the existing garden, the tree canopy is more open and results in a dense community of understory shrubs in Cicero Slough Creek.



Figure 15: Photograph looking downstream at Cicero Slough Creek showing the shape of the ravine near the upstream (northwest) property boundary. The stream is down cutting and is entrenched near the upstream property boundary.


273.91 m
IRON POST
E.O.S. - SETBACK
151.58 m
30.0 m
stream to septic setback
4546 litre septic tank
10.6 m
EXISTING SFD
PROPOSED SFD
covered patio
~15.0 m
stream covenant setback
COVENANT K11431
Minor Stream
EXIST. FOOT PATH
TOP OF CREEK EMBANKMENT
BOTTOM OF EMBANKMENT
TOP OF EMBANKMENT
PROPOSED WORK SHOP
loading area
EXISTING SHED
Steep Slope
DP Area No.2
Graham Ridge
existing septic location
7.0 m
15.0 m
stream covenant setback
30.0 m
60 m
graham lake setback
proposed vegetable garden
proposed water well
PROPOSED HOME OFFICE
proposed driveway
EXIST. DRIVEWAY
RELOCATE PP
DP Area No.4
Minor Stream
EXISTING DRIVEWAY
EASEMENT PLAN VIP507
PRESENT NATURAL BOUNDARY
EXISTING LAKE FRONT PATH
BOUNDARY ACCORDING TO PLAN 39716
~42.9 m
marks top of embankment (existing clearing) typ.
entry
PROPOSED GUEST HOUSE
balcony
parking
~23.9 m
NEIGHBOUR'S DRIVEWAY
16 m
DP Area No.4
Graham Lake
30m
PLAN 39092
44.7 m
EXISTING FOOT PATH
COVENANT K11431
Minor Stream
7728 litre treatment and pump tank
3410 litre septic tank
proposed septic dispersal field
~57.8 m
23.0 m
15.0 m
proposed stream to septic setback
E.O.S. - SETBACK
~30.0 m
stream to septic setback
GRAHAM LAKE
146.36 m
COVENANT K11431
49.8 m
40.0 m
Proposed graham lake setback
60 m
graham lake setback
BOUNDARY ACCORDING TO PLAN 39716
PRESENT NATURAL BOUNDARY
IRON POST FOUND
PLAN
B
VIP82741
-5
0
10
20
40

3. Recommendations

Measures - Protection of the Riparian Retention Area and Encroachment

Trees and understory vegetation in the stream ravine for Cicero Slough Creek and the SPEA for Graham Lake are a riparian retention area and must be protected.

No development is proposed within the stream ravine or within 40m of Graham Lake, so disturbance is not anticipated. This will be accomplished by ensuring that the edge of these protected areas is well-marked to ensure that personnel and equipment do not encroach into this area or (i.e., no development of any form shall be permitted within the ravine and no residential development shall be permitted beyond the existing edge of disturbance upslope of Graham Lake). Particular attention should be paid to the layout of any paved areas, such as roads and driveways, to ensure that all runoff is prevented from causing harm, damage, of destruction to any vegetation within the stream ravine.

Encroachment refers to the problem of disturbance of the riparian vegetation in the SPEA by trampling, unsanctioned trails and dumping of yard waste, etc.

- During construction activities, the Top of Ravine Bank must be marked through the use of temporary orange snow fencing and signage (on both banks). Additionally, temporary fencing must also be erected along the existing edge of disturbance upslope of Graham Lake to prevent encroachment into these protected areas.
- Temporary orange snow fencing demarcating the edge of protected areas must be implemented prior to ANY works on the site, including tree removal, grubbing, clearing, or the storage of any construction related materials, including heavy equipment.

Measures - Danger Trees in the SPEA

The majority of this property has been historically logged, likely multiple times since the early 1900's. The riparian areas along Graham Lake and the ravine slopes along Cicero Slough Creek were completely logged when the original timber was extracted. The site is currently regenerating with a maturing second (or third) growth stand of trees dominated by conifers. The majority of trees on the property are quite young, with a few more mature trees interspersed.

The stream corridor contains many mature trees which are large enough to strike the existing and proposed development. Generally speaking, trees in the riparian area appear to be in good health. However, during the field assessment of Cicero Slough Creek, it was noted that there is one large western hemlock (*Tsuga heterophylla*) that has been undermined by the stream and leans towards the existing house. Trees in the SPEA that are part of a riparian retention area can only be removed or modified if they are deemed Danger Trees by a qualified professional.

- All trees within striking distance of the proposed development must be assessed by an arborist, who is a certified danger tree assessor, to evaluate their condition and prescribe any mitigation measures.



Figure 16: Large western hemlock tree located near the existing house has been undermined by Cicero Slough Creek (yellow arrow) and is a likely Danger Tree.



Figure 17: Large western hemlock tree located near the existing house has been undermined by Cicero Slough Creek (yellow arrow) and is a likely Danger Tree.



Figure 18: Large western hemlock tree (yellow arrow) that has been undermined by Cicero Slough Creek (yellow arrow) leans towards the existing house (red polygon).



Figure 19: Large western hemlock tree (yellow arrow) that has been undermined by Cicero Slough Creek and leans towards the existing house.

All of the proposed development will be undertaken in existing cleared/disturbed areas, so disturbance of trees is not anticipated. Trees within the Cicero Slough Creek ravine or SPEA must be protected, including root zones which may extend beyond the edge of the SPEA/ravine.

- In areas where construction will be conducted near the top of ravine bank, an arborist must be retained to assess the health and protection needs of the trees in and immediately adjacent to the SPEA.

In the event that any trees are considered hazardous, they can be managed so as to maximize their benefit to aquatic and terrestrial ecosystems, while minimizing their risk to people and property.

If trees need to be removed:

- Where ever possible, some of the trees should be left to decompose on site, especially in the SPEA to provide woody debris on the ground as small mammal and amphibian habitat and to provide a substrate for mosses.

Management options to be considered for Hazard Trees include:

- Topping and/or pruning, to prevent dead branches from falling on people or property;
- Where necessary, cutting most of the tree down, while leaving a large section of trunk still standing as a wildlife tree, to provide habitat/food;
- Pushing a tree over and into the stream and/or SPEA, preferably with its root wad intact, so as to augment the supply of large wood. The root wad helps anchor the tree against the bank and provides micro-sites for terrestrial wildlife among the roots and in the depression.

Measures - Windthrow

Windthrow (trees knocked over due to wind) can be a risk to people and property, and if excessive, can result in a loss of function of riparian vegetation in the SPEA. Windthrow is especially a risk where the adjacent forest has been cleared, leaving the remaining trees more vulnerable.

Clearing of this site occurred historically and the proposed development will be undertaken entirely in existing cleared areas, so it is not anticipated that any additional windthrow will occur *ie.* the forest edge has had a chance to stabilize.

Some tree mortality is expected in functional ecosystems, and isolated cases are not necessarily a cause for concern. Fallen trees should therefore not be removed from the site unless they present a safety risk.

Possible strategies to prevent windthrow include:

- Protecting root zones of large trees from compaction;
- "Feathering" or topping adjacent trees to provide a gradual slope for wind to pass over.

Protecting root zones, particularly of large trees with stabilizing root zones located in the stream ravine, will require protected zones sized according to the rule of thumb that each inch of truck diameter at breast height (DBH) requires a protected root zone with a radius of one foot (*e.g.* a tree with a 24-inch DBH would require a circular protected zone with a radius of 24 feet). An arborist will be able to determine when and where such zones are required.

- As the proposed development of the house, septic and outbuildings will be undertaken in an existing disturbed area, changes to the windthrow patterns in the SPEA are not anticipated. Therefore no further measures are required with respect to windthrow.
- If development plans change such that tree clearing is proposed adjacent to the SPEA, an arborist should be retained to assess the health and windthrow protection needs of the trees in and immediately adjacent to the SPEA.

Measures - Septic

The existing septic system needs to be upgraded and a new septic field will be installed as part of the property redevelopment. The stream has a recommended 30m septic setback and Graham Lake has a recommended 60m septic setback. It is worth noting that these two setbacks overlap, leaving no practical location on the property for the septic field. Given these constraints, the development team has carefully reviewed site conditions on the ground to identify the best location for the septic field to maximize treatment for the protection of human and ecological health.

The proposed location for the septic field is in an existing cleared area at the top of ravine bank on the south side of Cicero Slough Creek. Utilizing the disturbed area will keep new vegetation disturbance to a minimum. The proposed septic field location lies about 20m away from the stream; it is outside of the ravine, SPEA and Covenant Area. The topography of the proposed septic field location slopes towards Graham Lake. The area between the septic field location and Graham Lake is completely vegetated with a moderate slope. There is an existing footpath on the lower slope, but it lies at least 30m away of the septic field location. The intact vegetation and soils will provide treatment to the effluent before it reaches Graham Lake. **No ecological impacts are anticipated from the proposed septic field location.**

- The vegetation that lies between the proposed septic field location and Graham Lake must be left intact.

Measures - Slope Stability

No development or disturbance of vegetation within the Cicero Slough Creek ravine is anticipated. Though there is some bank erosion and undercutting occurring within the stream channel, an abundance of moss on rocks and wood in the stream suggests that it is relatively stable. No obvious slumps or failures were observed.

- No specific recommendations regarding slope stability of the Cicero Slough Creek ravine or SPEA are necessary.

General recommendations for slope stability include:

- No new trails should be constructed on or near steep slopes.
- No stormwater will be directed onto any steep slopes, particularly channelized, concentrated flows.
- Stormwater will be infiltrated at the source and/or directed to a suitable detention/treatment facility and discharged as sheet flow onto vegetated areas.
- Education should be carried out to ensure that residents do not dump yard waste or other refuse onto steep slopes.

Measures - Sediment and Erosion Control During Construction/Pollution Prevention Plan

The developer is responsible for designing an effective erosion and sediment control plan to ensure that during construction, no sediment-laden water enters Cicero Slough Creek or Graham Lake, and that erosion of exposed soils does not occur such that the riparian area is damaged. These receiving environments are both fish habitat and Graham Lake is also a public drinking water supply. **Therefore, there is zero tolerance for turbid or sediment-laden runoff entering these environments. The RAR also prohibits treatment, including infiltration, of stormwater within the SPEAs for Cicero Slough Creek and Graham Lake.**

The Federal Fisheries Act prohibits the deposition of a deleterious substance (including sediment) in water frequented by fish. Furthermore, any stormwater discharges into adjacent downstream receiving environments (especially freshwater ecosystems) must ensure that the Federal and Provincial water quality Guidelines for the protection of aquatic life are not exceeded in the receiving environments. The Federal Guidelines are administered by the Canadian Council of Ministers of the Environment (CCME) and Provincial Guidelines are administered by the B.C. Ministry of Environment (BC MoE). In order to comply with the Act and Guidelines, it is essential that any Erosion and Sediment Control Plan be designed to an adequate standard.

Three documents that outline general principles and approaches for managing stormwater and controlling sediment and erosion are:

- "Stormwater Planning: a Guidebook for British Columbia," produced by BC MoE (2002);
- "Land Development Guidelines for the Protection of Aquatic Habitat," produced by DFO (1992); and
- "Storm water management for industrial activities: developing pollution prevention plans and best management practices," produced by the U.S. Environmental Protection Agency (1992).

The EPA (1992) document has been found to be the most stringent in its standards and best management practices (BMPs), which meet and exceed provincial BMPs and guidelines. The principal requirement of the US EPA method is the development of a Stormwater Pollution Prevention Plan (SPPP or PPP), which must be implemented prior to commencement of any on-site construction activity. Guidelines for the implementation of a Pollution Prevention Plan are outlined below:

- If possible, avoid scheduling construction activities during the winter months when heavy rains are more frequent. This will significantly reduce erosion and sediment control risks.
- Always maintain a clean and organized work area.
- Stage work to minimize the disturbed area and duration of exposure.
- Ensure that existing site services (e.g. water, sewer and gas connections) are properly capped and any drainage is directed away from the creek and exposed soils.
- Ensure that debris from demolition is properly contained and that debris does not enter the creek.

- Silt fences should be used to prevent sediment laden water from entering riparian areas. Silt fences are useful for slowing, diverting and preventing runoff from entering a watercourse, it is not appropriate to use silt fences to try and filter flowing turbid water.
- Prevent upslope water from running over disturbed areas, using diversion berms or other methods to intercept flows.
- Wherever possible, preserve vegetation and cover soils. Stabilize disturbed areas as quickly as possible with temporary or permanent covers (*e.g.* straw/mulch, grass seed, tarp *etc.*).
- Ensure runoff velocities are maintained at the lowest practical value. Maintain sheet flow and avoid channelizing runoff.
- Use site-specific sediment control structures to ensure suspended solids are retained on-site wherever possible.
- Avoid the siting of soil and debris stockpiles near the top of the ravine bank.
- Prepare for and clean up any and all spills. Repair all equipment oil and fuel leaks. A Spill Cleanup Kit should be included as part of the heavy equipment operators' Standard Operating Procedures; all equipment operators should be properly trained in the use of the Spill Cleanup Kits.
- Take care when using concrete and ensure that fresh concrete and concrete wash water do not runoff into the stream or lake. Un-cured concrete and concrete wash water is extremely toxic to aquatic organisms.
- Avoid the unnecessary use of water for cleaning to minimize the subsequent need for treatment of suspended solids.
- Ensure the regular inspection and monitoring of sediment control structures (*e.g.* silt fences, settling ponds etc.*)* as part of the construction program, particularly after rainstorm events. Remove sediment build-up to ensure continued effectiveness.

Measures - Stormwater Management

Care should be taken when designing the stormwater management measures to ensure there are no deleterious effects to the Cicero Slough Creek or Graham Lake (quality or quantity of water). Stormwater flows off the site MUST be treated, and detained, prior to entering Cicero Slough Creek or Graham Lake and flows must be discharged into the stream in a manner that prevents channelization and erosive forces. These receiving environments are both fish habitat and Graham Lake is also a **public drinking water supply**. Therefore, there is zero tolerance for untreated runoff entering these environments.

- A stormwater management strategy must be considered and implemented prior to any construction beginning on the dwelling and/or any out buildings, septic or driveway.

Stormwater management systems can simultaneously deliver benefits to the development and to the function of surrounding ecosystems. If implemented as part of a whole-system approach, these benefits can often be accomplished along with savings in development costs.

Recommended principles of stormwater management include:

- Using the Water Balance Model to predict and minimize development impacts on the hydrology of the site.
- Planning the layout to maximize vegetated landscapes, to maintain and/or enhance wildlife habitat, and to minimize impervious surfaces and the generation of point source stormwater runoff.
- Increasing infiltration of rainwater into the ground and minimizing stormwater runoff, by limiting impervious surfaces, using permeable hard surfaces such as permeable pavers, pervious concrete, etc., and using technologies such as infiltration trenches, vegetated swales, and cisterns for rainwater collection/reuse.
- Retaining and replanting native vegetation in order to simultaneously increase wildlife habitat, prevent erosion, and create greenways.
- Ensuring that no water is discharged or infiltrated such that it would destabilize steep slopes, stream banks or cause sedimentation of riparian areas.
- Avoid channelizing flows and discharge runoff as sheet-flow to mimic pre-development conditions whenever possible.
- Select roof membrane materials that are appropriate and do not leach pollutants and toxins, roof runoff does not require treatment prior to discharge into the ground of stream. However, if discharging to the stream, roof runoff will require some type of energy dissipation/detention to prevent erosive damage.

Measures - Environmental Monitoring During Construction

According to the U.S. EPA, **"the most environmentally dangerous period of development is the initial construction phase when land is cleared of vegetation and graded to create a proper surface for construction".**

The site should be inspected/monitored regularly to ensure that no erosion or sedimentation is occurring and that the riparian zone and water quality of the streams are protected. The use of repeat photography is a simple method for documenting site conditions and should be a core component of the environmental monitoring program – this method is called Photopoint Monitoring.

Photopoint Monitoring is a standardized procedure, developed largely by Dr. Fred Hall of the U.S. Forest Service, for taking precisely replicable photographs of resources that require long-term management (Hall, 2001). Photopoint Monitoring is both a qualitative and quantitative tool that can assist in detecting unacceptable conditions in target resources *before* severe or irreversible changes occur, and *allow time* to implement corrective actions.

Monitoring Recommendations:

- Prior to demolition or any new construction (*i.e.* prior to site disturbance), key locations on the site for monitoring photographs should be chosen. These should be are locations which will not be disturbed by the development activities and enable photography of key site features (*e.g.* view of water quality in Cicero Slough Creek upstream of development activities and downstream of activity). These locations should be used as Photopoint monitoring locations where regular

photographs will be taken (camera locations).

- Photos should be time and date stamped and stored in a central location for future reference if requested.
- During construction, the site should be inspected on a weekly basis and after every significant rainstorm (10mm or greater). Repeat photos should be taken at each camera location as well as candid photos showing activities of interest and the general condition of the site.

The intent with environmental monitoring is to document changes to the landscape and that any such changes to the landscape have not resulted in harm to the ecology of the site or watershed.

References

B.C. Ministry of Environment. EcoCat: The Ecological Reports Catalogue. Keyword Querty for Graham Lake. Performed February 5, 2016. URL: http://a100.gov.bc.ca/pub/acat/public/search.do

B.C. Ministry of Environment. Fisheries Information Summary System (FISS). Fisheries Inventory Data Queries. Single Waterbody Query: Waterbody Summary Information. Fish Presence Report. Data Query performed for Graham lake; February 5, 2016.

B.C. Ministry of Environment. 2002. Stormwater Planning: a Guidebook for British Columbia. http://www.env.gov.bc.ca/epd/epdpa/mpp/stormwater/stormwater.html

Department of Fisheries and Oceans Canada. 1992. Land Development Guidelines for the Protection of Aquatic Habitat.

Hall, F.C., 2001. Ground-based photographic monitoring. Gen. Tech. Rep. PNW-GTR-503. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 340 p. http://www.fs.fed.us/pnw/pubs/gtr503/

Koers & Associates Engineering Ltd. 2009. Denman Island Water Local Service Area Graham Lake Source Study. Prepared for the Comox Valley Regaional District. Courtenay, BC. 64pp.

RIPARIAN AREA MANAGEMENT TR-1737-15, A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas; Don Prichard, John Anderson, Cindy Correll, Jim Fogg, Karl Gebhardt, Russ Krapf, Steve Leonard, Brenda Mitchell, and Janice Staats. 1998. U.S. Department of the Interior, Bureau of Land Management, National Applied Resource Sciences Center, P.O. Box 25047, Denver, CO 80225-0047 (BLM/RS/ST-98/001+1737)

United States Environmental Protection Agency (EPA). 1992. Storm water management for industrial activities: developing pollution prevention plans and best management practices. EPA-833-R-92-005.

4. Appendix A: RAR Assessment Forms

Riparian Areas Regulation: Assessment Report

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

Date: January 28, 2016

I. Primary QEP Information

First Name	William	Middle Name	Patrick	
Last Name	Lucey			
Designation	R.P. Bio	Company: Aqua-Tex Scientific Consulting Ltd.		
Registration #	1467	Email: aqua-tex@islandnet.com		
Address	201- 3690 Shelbourne Street			
City	Victoria	Postal/Zip	V8P 4H2	Phone # 250-598-0266
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	Ryan	Middle Name	
Last Name	Macleod		
Company	Citizen Design Build Inc.		
Phone #	250-590-3960	Email: serrah@citizenbuilding.ca	
Address	2785 Murray Drive		
City	Victoria	Postal/Zip	V9A 2S4
Prov/state	BC	Country	Canada

IV. Development Information

Development Type	Recreational		
Area of Development (ha)	0.50	Riparian Length (m)	132
Lot Area (ha)	3.15	Nature of Development	Re-development
Proposed Start Date	February 2016	Proposed End Date	February 2018

V. Location of Proposed Development

Street Address (or nearest town)	3131 Jemima Road						
Local Government	Islands Trust			City	Denman Island		
Stream Name	Cicero Slough Creek & Graham Lake						
Legal Description (PID)	000-980-820			Region	1 Vancouver Island		
Stream/River Type	Stream & Lake			DFO Area	14 Oyster River, Parksville		
Watershed Code	905-124500-86600 (Graham Lake)						
Latitude	49°	30'	52.3"	Longitude	124°	45'	35.0"

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

Results of Riparian Assessment (SPEA width)

Cicero Slough Creek

Refer to Chapter 3 of Assessment Methodology

Date: 16-Jan-28

Description of Water bodies involved (number, type): Stream

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	1.9		
upstream	1.8		
	2.2		12
	2.3		
	1.8		
	2.2		4
downstream	2.0		2
	1.7	*	
	4.0	*	
	2.5		9
	2.0		7
Total: minus high /low	18.7		
mean	2.1		6.8

	R/P	C/P	S/P
Channel Type		X	

I, Wm. Patrick Lucey R.P.Bio , 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 Ryan Macleod;
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.

Site Potential Vegetation Type (SPVT)

	Yes	No
SPVT Polygons		X

Tick yes only if multiple polygons, if No then fill in one set of SPVT data boxes

I, Wm. Patrick Lucey R.P.Bio., 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 Ryan Macleod
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: 1

	LC	SH	TR
SPVT Type			X

Method employed if other than TR

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)	10m							
Litter fall and insect drop ZOS (m)	10m							
Shade ZOS (m) max	6.3m	South bank	Yes		No	X		
Ditch	Justification description for classifying as a ditch (manmade, no significant headwaters or springs, seasonal flow)							
Ditch Fish Bearing	Yes		No		If non-fish bearing insert no fish bearing status report			
SPEA maximum	**10.0m**	(For ditch use table3-7)						

Segment No:	2	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)	10m							
Litter fall and insect drop ZOS (m)	10m							
Shade ZOS (m) max	6.3m	South bank	Yes	X	No			
SPEA maximum	**10.0m**	(For ditch use table3-7)						

Segment No:		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)								
Litter fall and insect drop ZOS (m)								
Shade ZOS (m) max		South bank	Yes		No			
SPEA maximum		(For ditch use table3-7)						

I, Wm. Patrick Lucey R.P.Bio, 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 Ryan Macleod;
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

- This is an un-gazetted (unnamed) stream which flows from Cicero Slough to Graham Lake; it has been labeled Cicero Slough Creek for ease of discussion.
- Stream flowing in a ravine.
- No barriers to the upstream migration of fish were observed.
- Cicero Slough normally lacks surface flow for at least a five-month period between June to October.
- Cicero Slough Creek is a steep and deeply entrenched channel flowing through glacial till; cascading channel with step pools supported by large woody debris and boulders.
- Undercut banks were observed in several locations throughout the property.
- Driveway stream crossing structure is an old log crib culvert.
- Vegetation species present in the riparian area of Cicero Slough Creek include: western redcedar (*Thuja plicata*), Douglas-fir (*Pseudotsuga menziesii)*, western hemlock (*Tsuga heterophylla)*, grand fir (*Abies grandis)*, red alder (*Alnus rubra)*, bigleaf maple (*Acer macrophyllum)*, sword fern (*Polystichum munitum)*, dull Oregon-grape (*Mahonia nervosa)*, oceanspray (*Holodiscus discolor)*, red huckleberry (*Vaccinium parvifolium)*, common horsetail (*Equisetum arvense)*, salal (*Gaultheria shallon)*, and red elderberry (*Sambucus racemosa)*.

Graham Lake

Refer to Chapter 3 of Assessment Methodology

Date: 16-Jan-28

Description of Water bodies involved (number, type)	Lake
Stream	
Wetland	
Lake	X
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	n/a		
upstream			
downstream			
Total: minus high /low			
mean	n/a		n/a
	R/P	C/P	S/P
Channel Type	Lake	Lake	Lake

I, Wm. Patrick Lucey R.P.Bio , 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 Ryan Macleod;
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.

Site Potential Vegetation Type (SPVT)

	Yes	No	
SPVT Polygons		X	Tick yes only if multiple polygons, if No then fill in one set of SPVT data boxes

I, Wm. Patrick Lucey R.P.Bio., 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 Ryan Macleod
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		
	LC	SH	TR
SPVT Type			X

Method employed if other than TR

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)	15							
Litter fall and insect drop ZOS (m)	15							
Shade ZOS (m) max	30	South bank	Yes		No	X		
Ditch	Justification description for classifying as a ditch (manmade, no significant headwaters or springs, seasonal flow)							
Ditch Fish Bearing	Yes		No		If non-fish bearing insert no fish bearing status report			
SPEA maximum	**15.0m**	(For ditch use table3-7)						

Segment No:	2	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)								
Litter fall and insect drop ZOS (m)								
Shade ZOS (m) max		South bank	Yes		No			
SPEA maximum		(For ditch use table3-7)						

Segment No:		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)								
Litter fall and insect drop ZOS (m)								
Shade ZOS (m) max		South bank	Yes		No			
SPEA maximum		(For ditch use table3-7)						

I, Wm. Patrick Lucey R.P.Bio, 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 Ryan Macleod;
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

- Graham Lake used as a domestic water supply for the Graham Lake Improvement District.
- Graham Lake has a thick wetland fringe around the perimeter, particularly on the north bank.
- There are some existing footpaths present within the RAA, located on old logging roads, and a small dock which will be retained.
- Land between the proposed development and the shoreline of Graham Lake is well vegetated with a regenerating stand of second (or third) growth conifers and a well-developed shrub understory. This area provides a good vegetated buffer between proposed development activities which will utilize an existing disturbed area which lies a minimum of 40m from the lakeshore.
- Vegetation species present in the riparian area of Graham Lake include: western redcedar (*Thuja plicata*), Douglas-fir (*Pseudotsuga menziesii),* western hemlock (*Tsuga heterophylla),* red alder (*Alnus rubra),* black hawthorn (*Crataegus douglasii),* willows (*Salix spp.),* hardhack (*Spiraea douglasii)*, salmonberry (*Rubus spectabilis),* baldhip rose (*Rosa gymnocarpa),* sedges (*Carex spp.),* rushes (*Juncus spp.*), bracken fern (*Pteridium aquilinum),* salal *(Gaultheria shallon)* and cattail (*Typha latifolia).*

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.

1. Danger Trees	
I, Wm. Patrick Lucey R.P.Bio, 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 Ryan Macleod; 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	
2. Windthrow	
I, Wm. Patrick Lucey R.P.Bio, 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 Ryan Macleod; 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	
3. Slope Stability	
I, Wm. Patrick Lucey R.P.Bio, 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 Ryan Macleod; 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	
4. Protection of Trees	
I, Wm. Patrick Lucey R.P.Bio, 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 Ryan Macleod; 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	
5. Encroachment	
I, Wm. Patrick Lucey R.P.Bio, 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 Ryan Macleod; 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	
6. Sediment and Erosion Control	
I, Wm. Patrick Lucey R.P.Bio, 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 Ryan Macleod; 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	
7. Stormwater Management	
I, Wm. Patrick Lucey R.P.Bio, 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 Ryan Macleod; 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	
8. Floodplain Concerns	
I, Wm. Patrick Lucey R.P.Bio, 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 Ryan Macleod; 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	

Professional Opinion

Assessment Report Professional Opinion on the Development Proposal's riparian area.

Date March 10, 2016

1. I/We Wm. Patrick Lucey R.P.Bio.

Please list name(s) of qualified environmental professional(s) and their professional designation that are involved in assessment.)

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 Ryan Macleod, 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.

Schedule "B" – Erosion and Sediment Control Plan

3131 Jemima Road

Denman Island

Erosion and Sediment Control Plan



April 24, 2017

Prepared by: Citizen Design Build inc.

Reviewed by: Tracy Motyer R.B.Tech, Aqua-Tex Scientific Consulting Ltd.

CONTENTS

1.0 INTRODUCTION
2.0 PROJECT DESCRIPTION
3.0 PURPOSE
4.0 ROLES AND RESPONSIBILITIES
4.1 Project Manager
4.2 Environmental Monitor
4.3 Subcontractor Construction Foreman
***5.0* DESCRIPTION OF EXISTING SITE CONDITIONS**
6.0 BEST MANAGEMENT PRACTICES
6.1 Erosion Control Practices
6.2 Sediment Control Measures
6.2.1 Silt Fence
7.0 MONITORING PLAN

1.0 INTRODUCTION

As part of a project described here in Section 2.0, an Erosion and Sediment Control (ESC) Plan has been developed, which is intended to outline operational procedures for the control of erosion and sediment during the construction phase(s).

2.0 PROJECT DESCRIPTION

The project includes plans for re-development of the property located at 3131 Jemima Rd, Denman Island, BC. A description of the proposed development includes: reconstruction of the existing single-family dwelling with an expanded footprint, removal of the existing shed and replacement with a new workshop, and installation of a new septic facility.

3.0 PURPOSE

The Erosion and Sediment Control Plan provides the framework for working to the recommendations outlined in: ***3131 Jemima Development Permit Report: Streams, Lakes and Wetlands - March 17, 2016*.**
This report was an ecological assessment of the subject property at 3131 Jemima Road, located on Denman Island. The purpose of the ecological assessment was to establish a baseline of site conditions and review proposed redevelopment plans for the property with particular attention to the Development Permit Area (DPA): #4 Streams, Lakes and Wetlands. This development permit area assessment and Riparian Area Regulation (RAR) assessment was triggered by a proposal to undertake development in the Stream, Lakes and Wetlands DPA within the 30m Riparian Assessment Area (RAA) for Cicero Slough Creek.

This Erosion and Sediment Control Plan intends to provide the framework for working to the recommendations regarding erosion and sediment control put forth in the report by outlining the following:

-Roles and responsibilities of environmental management and construction staff;
-A description of existing site conditions;
-Details regarding the recommended Best Management Practices (BMPs) that should be implemented to provide adequate erosion and sediment control measures during construction; and
-The monitoring of ESC measures during construction and reporting duties.

4.0 ROLES AND RESPONSIBILITIES

A team comprised of a Project Manager (Ryan Macleod-Citizen Design Build inc), Environmental Monitor (Ryan Macleod) and Construction Foreman (Drew Erickson) will be assembled to carry out environmental monitoring activities, including the implementation of proposed ESC measures.

The purpose of an environmental monitoring program is to identify significantly sensitive areas prior to the start of each specific component of every construction activity, and ensure that such areas are avoided and that environmental impacts are mitigated through effective implementation of the ESC Plan. A summary of the roles and responsibilities of the PM, EM, and Subcontractor Construction Foreman (CF) are provided below:

4.1 PROJECT MANAGER

The Project Manager will co-ordinate all environmental aspects of the project, including the ESC Plan and will be responsible for ensuring that an adequate level of environmental supervision and stewardship is maintained. In addition, the PM will liaise with the EM, the CF. Other responsibilities of the PM will include:

-Reviewing mitigation plans for environmental impacts;
-Coordinating the environmental monitoring of construction activities;
-Providing environmental monitoring and mitigation training to construction personnel;
-Providing direction to the EM to ensure regulatory compliance and appropriate mitigation of environmental impacts.

4.2 ENVIRONMENTAL MONITOR

The Environmental Monitor will assist the PM and will be available for consultation during the construction phases to ensure mitigation of environmental impacts. With respect to the ESC Plan, the EM is responsible for:

-Issuing the initial report outlining conditions and considerations (***3131 Jemima Development Permit Report: Streams, Lakes and Wetlands - March 17, 2016)***
-Liaising with the CF, his/her team and sub-contractors as needed to identify existing or potential problems regarding the implementation of the ESC Plan;
-Assisting the Construction Management Team and sub-contractors to resolve any ESC issues immediately

.*4.3 SUBCONTRACTOR CONSTRUCTION FOREMAN*

The Construction Foreman will assume responsibility for ensuring that the ESC features are properly constructed and/or installed, and operated and maintained accordingly. In addition, the Construction Foreman will be responsible for undertaking the following:

-Liaising with the PM and EM to identify any existing or potential problems regarding the implementation of the ESC Plan;
-Resolving any ESC issues in a timely manner;
-Proposing and aiding in the implementation of changes to the ESC Plan with the EM.
-Weekly monitoring of environmental conditions of the site to ensure that erosion and sediment control measures remain effective.
- Monitoring will also be conducted following rain events of greater then 6mm.

5.0 *DESCRIPTION OF EXISTING SITE CONDITIONS* (from ***3131 Jemima Development Permit Report: Streams, Lakes and Wetlands - March 17, 2016.***)

The subject property at 3131 Jemima Road lies within the Graham Lake Watershed and abuts the shoreline of Graham Lake. One stream, Cicero Slough Creek, flows southeast through the property and into Graham Lake. Water from Graham Lake flows down Graham Lake Creek in a southeasterly direction, discharging into Lambert Channel on the east side of Denman Island.

The subject property extends from Jemima Road to the shoreline of Graham Lake. The property has been extensively logged in the past; numerous old logging roads, now trails, traverse the landscape. The property is currently developed with one single-family dwelling, associated gardens, parking area and a small shed. The site is largely vegetated with a regenerating stand or second (or third) growth trees. Presently, the property is accessed through a long shared driveway that traverses the adjacent properties to the east. The driveway crosses Cicero Slough Creek in an existing wood log culvert (remnant of logging activities).

Graham Lake
Graham Lake is a fish-bearing lake and it is also used as a domestic water supply, therefore there is a zero tolerance for pollution.

The area of land between the proposed development and the shoreline of Graham Lake is well vegetated with a regenerating stand of second (or third) growth conifers and a well- developed shrub understory. This area provides a good vegetated buffer between proposed development activities which will utilize an existing disturbed area which lies a minimum of 40m from the lakeshore.

It is worth noting, that during the site assessment for the DP/RAR report (January, 2016), there was an obvious lack of clarity in the water on Graham Lake following a rain event. This turbidity observed in the lake was not found to be coming from the subject property, but the source(s) could not be identified.



Figure 1: Photograph of the water quality in Graham Lake on January 28, 2016 showing some turbidity in the lake, prior to any construction activities on the subject property.

Cicero Slough Creek
Cicero Slough Creek is a fish-bearing stream and it is also flows into a domestic water supply, therefore there is a zero tolerance for pollution.

Cicero Slough Creek flows southeast through the subject property in a ravine and flows into Graham Lake on the adjacent property to the east. Characteristic of most of the streams on Denman Island, Cicero Slough normally lacks surface flow for at least a five-month period between June to October. At the time of the field assessment (January 2016), the creek was flowing with a significant volume and velocity.

Cicero Slough Creek is a steep and deeply entrenched channel flowing through glacial till. The reach on the subject property is a cascading channel with step pools supported by large woody debris and boulders.

The existing driveway crosses the stream at the approximate mid-point of the property. The driveway is very steep and will be the single access road for construction activities. The stream crossing structure is an old log crib culvert, likely a remnant of logging activities, and appears to be in good condition. The new proposed development will utilize this existing stream crossing; replacement of the structure is not anticipated.

The Streamside Protection and Enhancement Area (SPEA) for Cicero Slough Creek is 10m. Additionally, there is a covenant on the property (Covenant K114311) that prescribes no buildings to be sited within 15.0m and no disturbance of vegetation within 6.1m of Cicero Slough Creek. Both of these setbacks will be achieved, as there is no new development or disturbance of vegetation proposed within 15.0m of Cicero Slough Creek.

6.0 BEST MANAGEMENT PRACTICES

The recommended BMPs that are to be employed as part of the ESC Plan are based upon three documents that outline general principles and approaches for managing stormwater and controlling sediment and erosion. They are:

- "Stormwater Planning: a Guidebook for British Columbia," produced by BC MoE (2002);
- "Land Development Guidelines for the Protection of Aquatic Habitat," produced by DFO (1992); and
- "Storm water management for industrial activities: developing pollution prevention plans and best management practices," produced by the U.S. Environmental Protection Agency (1992).

A combination of BMPs, structural or otherwise, will be implemented at the site(s) to provide the necessary level of erosion and sediment control. Design considerations, guidelines, and procedures for the installation or implementation of BMPs are summarized below, while additional information (i.e., standard specifications and drawings) are available online

Specifically, as outlined in the recommendations of ***3131 Jemima Development Permit Report: Streams, Lakes and Wetlands - March 17, 2017:***

-Every effort shall be made to avoid scheduling construction activities during the winter months when heavy rains are more frequent. This will significantly reduce erosion and sediment control risks.
-All work areas shall be maintained in a clean and organized manner.
-Work shall be staged so as to minimize the disturbed area and duration of exposure.
-Existing site services shall be properly capped and any drainage shall be directed away from the creek and exposed soils.
-Any debris from demolition shall be properly contained and any such debris shall be prevented from entering the creek.
-Silt fences shall be used to prevent sediment laden water from entering riparian areas. Silt fences are useful for slowing, diverting and preventing runoff from entering a watercourse, and it is understood that it is not appropriate to use silt fences to try and filter flowing turbid water.
-Upslope water shall be prevented from running over disturbed areas, using diversion berms or other methods to intercept flows.
-Wherever possible, vegetation and cover soils shall be preserved. Stabilize disturbed areas as quickly as possible with temporary or permanent covers (*e.g.* straw/mulch, grass seed, tarp *etc.*).
-Runoff velocities shall be maintained at the lowest practical value, maintaining sheet flow and avoiding channelizing runoff.
-Site-specific sediment control structures shall be used to ensure suspended solids are retained on-site wherever possible.
-Siting of soil and debris stockpiles near the top of the ravine bank shall be avoided.
- A Spill Cleanup Kit shall be included on site and as part of the heavy equipment operators' Standard

Operating Procedures; all equipment operators should be properly trained in the use of the Spill Cleanup Kits.
-Care shall be taken when using concrete and ensure that fresh concrete and concrete wash water do not runoff into the stream or lake. It is understood that un-cured concrete and concrete wash water is extremely toxic to aquatic organisms.
-Unnecessary use of water for cleaning shall be avoided to minimize the subsequent need for treatment of suspended solids.
-Regular inspection and monitoring of sediment control structures (*e.g.* silt fences, etc*.)* shall be performed as part of the construction program, particularly after rainstorm events, including removal of sediment build-up to ensure continued effectiveness.

6.1 EROSION CONTROL PRACTICES

Erosion prevention is essential and is the most effective method in protecting downstream aquatic habitat during the construction process. Erosion controls involve minimizing the extent of disturbed areas by clearing only what needs to be cleared, preserving and protecting natural cover, and immediately stabilizing disturbed areas.

6.2 SEDIMENT CONTROL MEASURES

Perimeter controls shall be implemented to protect adjacent areas down-gradient from the construction site and/or divert sediment laden runoff away from unprotected/disturbed slopes and areas. Perimeter controls are also utilized to convey runoff from external drainage away from a construction site. Although some perimeter controls may provide some sedimentation, its main function is to prevent sediment laden runoff from encroaching onto adjacent undisturbed areas, unprotected slopes, and/or water courses.

6.2.1 Silt Fence

The purpose of silt fencing is to intercept and detain suspended sediment travelling in the form of sheet flow off of disturbed areas. Silt fencing should be installed along the perimeter of sensitive or protected areas, along watercourse corridors and at the base of moderate to steep slopes. Silt fence consists of a non-woven synthetic geotextile fabric stretched across and attached to supporting posts, wire mesh may be used in some applications. This measure does NOT filter runoff, but acts as a linear barrier creating upstream ponding which allows soil particles to settle out thereby reducing the amount of soil leaving a disturbed area. The sediment control fence also decreases the velocity of sheet flow and low to moderate level concentrated flows.
As an alternative to silt fencing, straw wattles (e.g., SiltsoxxTM), straw bale barriers, and/or sandbag barriers can be considered for perimeter control. In addition, or, granular filter berms at an approximate height of 0.3 m can be installed at locations where the topography is generally flat.
Design Considerations and Specifications:

-Silt fence shall be installed as per manufacturer's specifications.
-Posts are to be spaced no more than 1.8 m apart and driven into the ground a minimum of 750 mm, where possible;
-Posts shall be 50 mm x 50 mm wood stakes or equivalent;
-A trench must be excavated approximately 200 mm wide and 300 mm deep along the line of posts, on the upslope side of the barrier, and should follow the slope contour;
Geotextile material should be woven type 270R or equivalent and, if possible, should be cut from a continuous roll to avoid joints – if joints are necessary, geotextile should be spliced only at support posts, with a minimum overlap of 200 mm and both ends secured to the post;
-When standard strength geotextile is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty staples (i.e., 25 mm long), tie wires or hog rings – the wire must extend into the trench a minimum 50 mm and not more than 900 mm above the original ground surface;
-If extra-strength geotextile is used and post spacing is reduced, the requirement for a wire mesh support fence is eliminated; and,
-When sediment accumulates to half the height of the silt fence, it should be removed and replaced.
-Inspection and Maintenance Requirements: Inspect after every significant rainfall event and daily during prolonged periods of rain;
-Ensure that base of geotextile remains buried and posts are anchored. If sediment accumulates above one half of the height of the silt fence, remove or replace section of fence, if necessary.

Silt Fencing will be erected along the edge of disturbance, SPEA boundary, or covenant boundary, whichever is most stringent, for Cicero Slough Creek (south side) and also along the streamside edge of the driveway. Additionally, segments of silt fencing will be erected along the edge of disturbance for new structures adjacent to Graham Lake setback area.

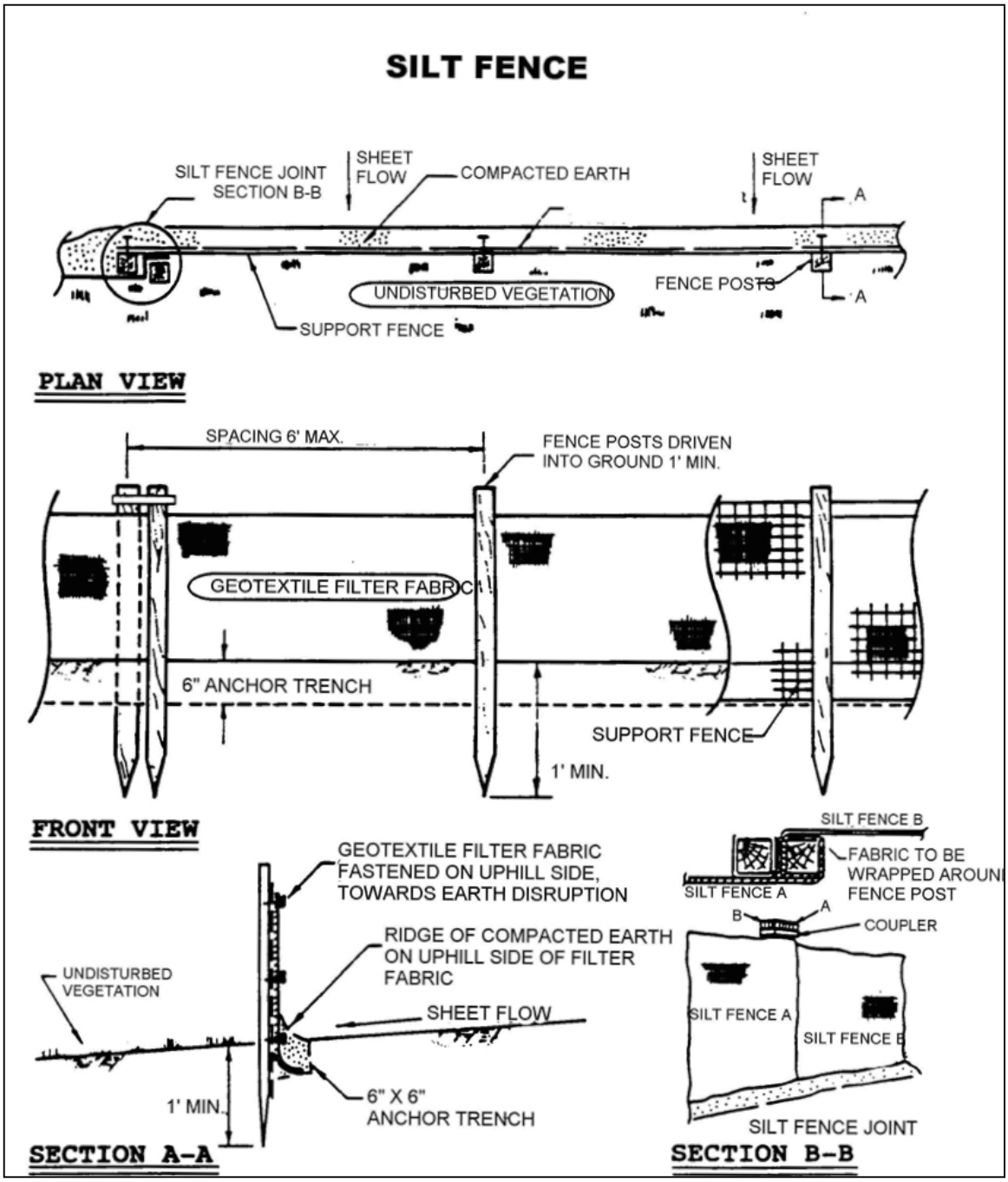


Figure 2. Schematic diagram of silt fence installation. Courtesy Nebraska H2O (www.nebraskaH20.org)

6.2.1 Water Bars

A water bar is a small ridge or shallow cross-ditch built across a road or trail to slow and redirect flowing water. Water bars are most commonly built on steep sections of road or trail to divert flowing water off road surfaces into vegetated areas or infiltration pits. Water bars will be employed on the steep driveway and also on the existing trails to Graham Lake to prevent sediment laden water from entering the stream or lake by diverting it off into adequately vegetated areas or into an infiltration pit, where suitable vegetation is not present.

Water bars should be dug (or mounded if using berms) across the road/stream at roughly a 20-30 degree angle to create a 2-4% slope in the water bar.

Water bars can be backfilled with gravel to increase sediment trapping and ease driving and prolong the life of the

water bar. The precise location and direction of water bars should utilize the most stable, vegetated outlet locations or where a constructed sediment rap or infiltration pit has been constructed.

Inspect water bars for vehicle wear and debris build-up and effectiveness. If monitoring determines that water bars are being overwhelmed by water, additional water bars may be necessary.

6.2.2 Infiltration Pit

An infiltration pit is a shallow impoundment that slows the velocity of flowing water and infiltrates runoff into the ground. Slowing the velocity of water enables sediments to settle out and promotes infiltration. Infiltration basins are useful in areas where suitable filtering vegetation is not available and soils are suitable to enable infiltration (i.*e.* not bedrock*).* Sediment trapping capabilities can be enhanced by filling the infiltration pit with drain rock.

In situations where the infiltration pit is overwhelmed by water and or sediment, it can also function as a sump where a pump can be used to pump out the water and divert it out into a suitably vegetated area.

6.2.3 Tarping Stockpiles

The majority of sediment production occurs from the collision or raindrops with exposed, unstable soils. To minimize this soil and debris stockpiles will be covered when not in use. Exposed areas will be kept to a minimum and stabilized as soon as practical.

Short term cover options include tarps or plastic sheeting, longer-term options include, straw mulching, covering with debris from tree clearing, or seeding. All cover options must be secured for wind.

6.2.4 Exclusion Fencing/Signage

Trees and understory vegetation in the stream ravine for Cicero Slough Creek and the SPEA for Graham Lake are a riparian retention area and must be protected. No clearing of vegetation is permitted in protected areas unless it is for safety (*i.e.* danger tree) considerations. Existing trees can be damaged by the compaction of soils in the root zone.

Encroachment refers to the problem of disturbance of the riparian vegetation in the SPEA by trampling, soil stockiles, vehicle parking, and dumping of yard waste, etc.

- During construction activities, the edge of the disturbance area must be marked through the use of temporary orange snow fencing and signage.
- Temporary orange snow fencing demarcating the edge of protected areas must be implemented prior to ANY works on the site, including tree removal, grubbing, clearing, or the storage of any construction related materials, including heavy equipment.
- Additionally, all contractors working on the site will be briefed on the protected areas to ensure there is no encroachment.

Exclusion fencing will be achieved with orange snow fencing or equivalent.

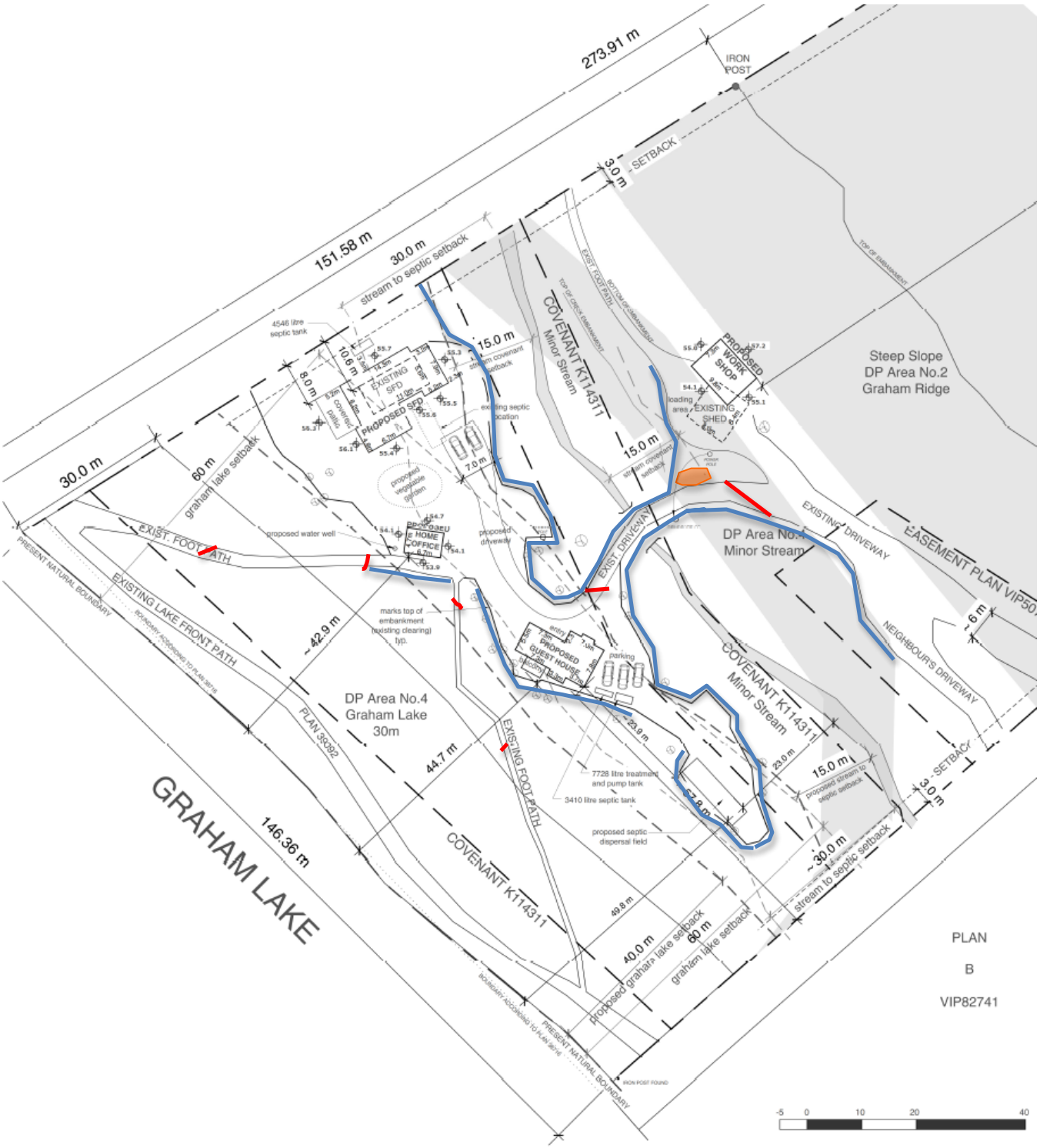


Figure 3: Site plan showing proposed locations for silt fencing/exclusion fencing (blue lines), water bars (red lines) and infiltration pit (orange polygon).

7.0 MONITORING PLAN

Monitoring will be conducted to ensure that all recommendations and guidelines with regard to erosion and sediment control are being followed during construction and that preventive and protective environmental measures are in place and functioning properly throughout construction.

Weekly environmental inspections of the site by the CF shall be conducted. For more sensitive aspects of the work, inspection will be carried out at critical times in the process (e.g., wet weather conditions, working within

watercourses, significant excavations, *etc*).

The site monitoring and maintenance required to support the ESC Plan is described in the following sections. During the construction phase, the on-site CF shall:
-Complete pre-assessments of each work locations to establish baseline BMPs and ESC measures.
-Conduct weekly visual inspections of:
-All structural BMPs for ESC (i.e., silt fencing, straw bale and rock check dams, etc.) weekly and after all significant rainfall events.
-Remove accumulated sediment for all applicable BMPs when visible and store and stabilize on-site in a controlled area.
-Co-ordinate the maintenance of erosion and sediment control BMPs as indicated in the specifications provided, and as needed.

7.1.1 PhotoPoint Monitoring

Photopoint Monitoring (PPM) is a standardized procedure for taking replicable photographs for both short-term and long-term monitoring. PPM is an easy documentation and communication tool that can assist monitors in detecting unacceptable site conditions *before* severe or irreversible changes occur, and *allow time* to implement corrective actions. It can be used to document compliance as well as issues and corrective actions.

Prior to the commencement of construction activities, standardized camera locations will be selected though out the site to document the proper function of ESC measures, maintenance of the standard of care and compliance with this plan. Suggested camera locations include: water quality in Cicero Slough Creek upstream of the project site, water quality in the Creek downstream of the project site, driveway crossing over the Creek, water quality in Graham Creek, silt fences, water bars *etc*.

If possible, PPM locations should remain in consistent throughout the construction process. However sometimes PPM locations need to be modified to ensure they are still capturing key site features and activities. Additional site photos not captured at PPM locations, candid photos are encouraged to enhance monitoring.

7.1.2 Documentation & Standardized Checklist

Documentation of monitoring should utilize a standardized checklist. This ensures consistency in monitoring efforts and documentation. Documentation may be electronic, paper based or a combination of both, but a permanent log must be created. At minimum, completed checklists, notes on maintenance and repairs and date-stamped photographs are expected.

3131 Jemima Road

Erosion and Sediment Control Inspection Checklist

Name of Inspector(s): _____

Date (YYYY/MM/DD): _____ Time: _____

Weather Conditions: _____

Please circle yes, no, or n/a. Where applicable include comments.

1	Has a significant rainstorm event of 6mm (1/4") or greater occurred since the last inspection? If yes, describe the magnitude of event and any damage in the comments section.	yes	no	
2	Local Weather Station Network rain gauge has been checked (i.*e.* Denman Island Community School: http://www.islandweather.ca/station.php?id=192)	yes	no	
3	Has a significant windstorm causing tree blowdown occurred since the last visual inspection? If yes, describe the event and extent of damage in the comments section.	yes	no	
4	Has more than one half of the site been cleared at one time (exposed soils).	yes	no	
5	Has there been a discharge of turbid water into the receiving environment (environment requiring protection - stream, lake, *etc.)* since the last site inspection? If yes, describe the location, cause of the discharge, and mitigation measures to repair the damage and to prevent a recurrence (*i.e.* water bars, sumps etc.) in the comments section.	yes	no	
6	Silt fences/sediment barriers have been installed correctly and are functional (*i.e.* completely dug into the ground and securely attached to the fence posts/anchors).	yes	no	n/a
7	Silt fences/sediment barriers are being maintained in good order and have been inspected for depth of trapped sediment and tears in the silt fencing material? If no, describe the maintenance requirements in the comments section.	yes	no	n/a
8	Soil and debris stockpiles are appropriately located (*i.e.* not adjacent to sensitive receiving environments) and are covered or stabilized when not in active use.	yes	no	n/a
9	Non-active, exposed soil areas have been stabilized as soon as practical after the cessation of soil disturbing activities (*i.e.,* seeding, tarps, mulch, etc.)	yes	no	
10	Surface runoff from upstream and upslope areas are being diverted from exposed soils to the degree attainable (*i.e*. water bars are functional, diversion pump in place, etc.)	yes	no	
11	Concrete wash water has been managed to prevent its discharge into the receiving environment (an appropriate area has been designated for washing concrete equipment, including wash water from concrete trucks).	yes	no	n/a
12	Fuels and other petrochemicals are being used and stored in an appropriate location, well away from receiving environments. All fuels stored onsite are contained within a designated area that is properly bermed.	yes	no	

13	Has a release of a reportable quantity (greater than 1 litre) of oil or other hazardous material occurred? If yes, describe the incident and mitigation measures in the comments section.	yes	no	
14	Garbage and debris are being disposed of in proper containers and containers are routinely emptied when full. The site is clean and organized.	yes	no	
15	Is off-site tracking of mud or debris occurring on neighbouring streets? If yes, describe mitigation measures in the comments section.	yes	no	
16	Spill cleanup kit is complete, easily accessible and in proper working order	yes	no	
17	Adequate supplies of sediment control materials are stored on-site for immediate use if necessary (*i.e*. extra silt fencing, tarps, pumps etc.)	yes	no	
18	All erosion and sediment control mitigation measures prescribed in the last inspection report have been implemented and are in good working order.	yes	no	n/a
19	Repeat photographs have been taken at each established Photo Point monitoring location, as well as upstream and downstream of work site.	yes	no	
20	Overall, does the site meet a standard of care adequate to protect the receiving environment?	yes	no	
21	Sensitive area exclusion fencing (i.e. snow fencing) is in place and there is no encroachment.	yes	no	
22	Have noted concerns been reported to the appropriate individual. If so, whom? NOTE the time and date beside individuals name below.	yes	no	n/a
23	**Contact Numbers:**			
	Project Manager - Ryan Macleod, Citizen Design Build Inc.- 250.213.1513			
	Environmental Monitor - Ryan Macleod, Citizen Design Build Inc. – 250.213.1513			
	Construction Foreman – Drew Erickson – 250.650.3252			
	Hydrologist/Septic designer- Steve Carballeira (H20 Environmental) - 250.335.1864			
	Consulting Biologist- Aqua-Tex Scientific Consulting Ltd. - Tracey/Patrick - 250.598.0266			
	Comments & Notes:			

Schedule "C" – Hydrogeologic Investigation and Addendum

H2O ENVIRONMENTAL LTD

3060 Lake Road, Denman Island, BC V0R 1T0
Tel :(250) 335-1864 Fax: (250) 335-1846
Email: h2oenv@telus.net

March 8, 2016 H_2O File: 15-81

Citizen Design
2785 Murray Drive
Victoria, BC V9A 2S4

Re: Wastewater System Setback Reduction Study
3131 Jemima Road, Denman Island

Introduction

H_2O Environmental Ltd. (H_2O) was retained by you, on behalf of the owners, to complete a limited hydrogeologic investigation of the above referenced site and to design the wastewater system for the new building configuration. H_2O understands that you are increasing the size of the existing house to four bedrooms and constructing a two-bedroom guest cottage.

The existing house and the proposed guest cottage are in an area of the property that is located between an ephemeral stream and Graham Lake. The Islands Trust setback to a wastewater system from Graham Lake is set at 60 metres (m) and from a stream is set at 30 m[1]. The property owners needed an investigation as to whether or not a new wastewater system can be safely installed at your site.

A wastewater system is defined in the Sewerage System Regulation[2] (SSR) as comprising tanks and the associated dispersal field. The area of the site available for a wastewater system is constrained by the topography. There is no feasible location on the site for the wastewater dispersal system that is not less than 60 metres from the lake. The setback reduction will be proposed for 40 metres to Graham Lake versus the 60 metres required by Bylaw 186. The proposed reduction of the setback to the ephemeral stream will be approximately 10 metres.

H_2O has investigated the potential for contamination to the lake and the ephemeral stream which may result from use of the new wastewater system. Figure 1 presents a site plan of the area under study with proposed setbacks. The purpose of this letter is to report the results of the field work and the limited hydrogeologic investigation.

Scope of Work

H_2O's completed the following scope of work for this investigation:

- desk study of area geology and hydrogeology to investigate local subsurface conditions;
- an assessment of the local drainage patterns;

[1] Islands Trust *Denman Island Bylaw 186, 2008*, Sec.2.3.2
[2] Public Health Act *Sewerage System Regulation, BC Reg. 326/2004 with amendments up to BC Reg. 209/2010*

sandstone bedrock. No groundwater was observed in the testpits. The winter water table elevation was assumed to be approximately 55 cm below grade, on top of the sandstone bedrock.

To measure the *in-situ* permeability of the soils, four permeameter tests were conducted. Auger holes were advanced within the proposed wastewater dispersal field and between the wastewater field and Graham Lake to a maximum depth of 40 cm. Auger holes were advanced to within the inferred depth of infiltration from the proposed wastewater dispersal system.

The permeameter test consists of a calibrated tube filled with water which is inserted into an auger hole allowing the water to escape at a flow rate determined by the ability of the soil to transmit it away from the tube. The water flow out of the tube is measured and a field saturated hydraulic conductivity (K_{fs}) of the soil is calculated from the results. Hydraulic conductivity is the volume of water the soil will transmit over a given period of time and is generally considered to be 2x the K_{fs}.

The fastest calculated field saturated hydraulic conductivity of the soil was on the order of 0.41 metres per day, with a hydraulic conductivity of approximately 0.8 m/day.

Based on the estimated soil hydraulic conductivity of 0.8 m/day, an assumed hydraulic gradient of 0.33 (from measured onsite slope below the dispersal area), and a soil porosity of 25%, the effluent velocity in the soils was calculated using the equation **V= Ki/n,** where ***K*** is the hydraulic conductivity, ***i*** is the hydraulic gradient and ***n*** is estimated porosity of the sandy soils.

The velocity of the effluent in the soils is calculated to be approximately 1.1 metres/day.

Wastewater Systems

A Type 1 wastewater system is only septic tank treated effluent with total suspended solids (TSS) and five-day biochemical demand (BOD_5) on the order of 150-300 parts per million (ppm) and 150-250 ppm, respectively. BOD_5 is a measure of the oxygen use of the microbes within the effluent rated over a period of 5 days. Typically, fecal coliform concentrations from a septic tank range from 10^3 to 10^4 colony forming units (CFU) per 100 millilitres.

Type 2 treatment systems reduce the effluent TSS and BOD_5 to less than 45 ppm. A Type 2 10/10 system reduces the TSS and BOD_5 to 10 ppm.

A Type 3 system requires reduction of the fecal coliforms to less than 400 CFU per 100 milliliters while maintaining the 10 ppm standard for TSS and BOD_5. For residential systems, this is generally done with tertiary treatment, i.e. – a UV light.

A Type 2 10/10 treatment system has been specified on this site due to the limited depth of permeable soil and the space constraints. Additional engineered sand under the sand mound will create Type 3 effluent on infiltration to native soils.

stream and Graham Lake. As previously noted, the stream is up-gradient of the location of the wastewater disposal field. Pathogen and phosphorus calculations indicate that, even if the effluent were to flow into the area of the stream, those nutrients would be significantly reduced before entering the stream. This makes it very unlikely that the treated effluent will have a negative effect on the stream.

Similarly, as shown above, the reduction of nutrients and pathogens in the effluent moving towards the lake would be significant. The groundwater velocity has been calculated to be approximately 1.1 metre per day. This would indicate that the effluent would be resident in the soils for approximately 36 days before reaching Graham Lake. The generally accepted time for complete polishing of Type 1 effluent in native soils is 14 days.

The phosphorus levels with 2 metres of the wastewater disposal field will be less than 0.05 mg/L, in a properly functioning system. The vegetation downgradient between the dispersal field and the lake should not be disturbed, as this would reduce some of the phosphorus uptake by plants on the slope.

Based on the upgradient location of the stream, the site topography, the inferred effluent flow direction and the proposed treated effluent characteristics, H_2O believes that reducing the setback from the wastewater system from 60 to 40 metres to Graham Lake and from 30 to 15 metres from the stream will not likely cause an environmental or health hazard.

Conclusions

The proposed distances of the new wastewater system to the onsite stream and Graham Lake are less than the setbacks set out in the Sewerage System Standard Practice Manual and Denman Island Bylaw 186. Due to the site topographic constraints, there is no feasible location for the dispersal system on the site where all published setbacks can be maintained.

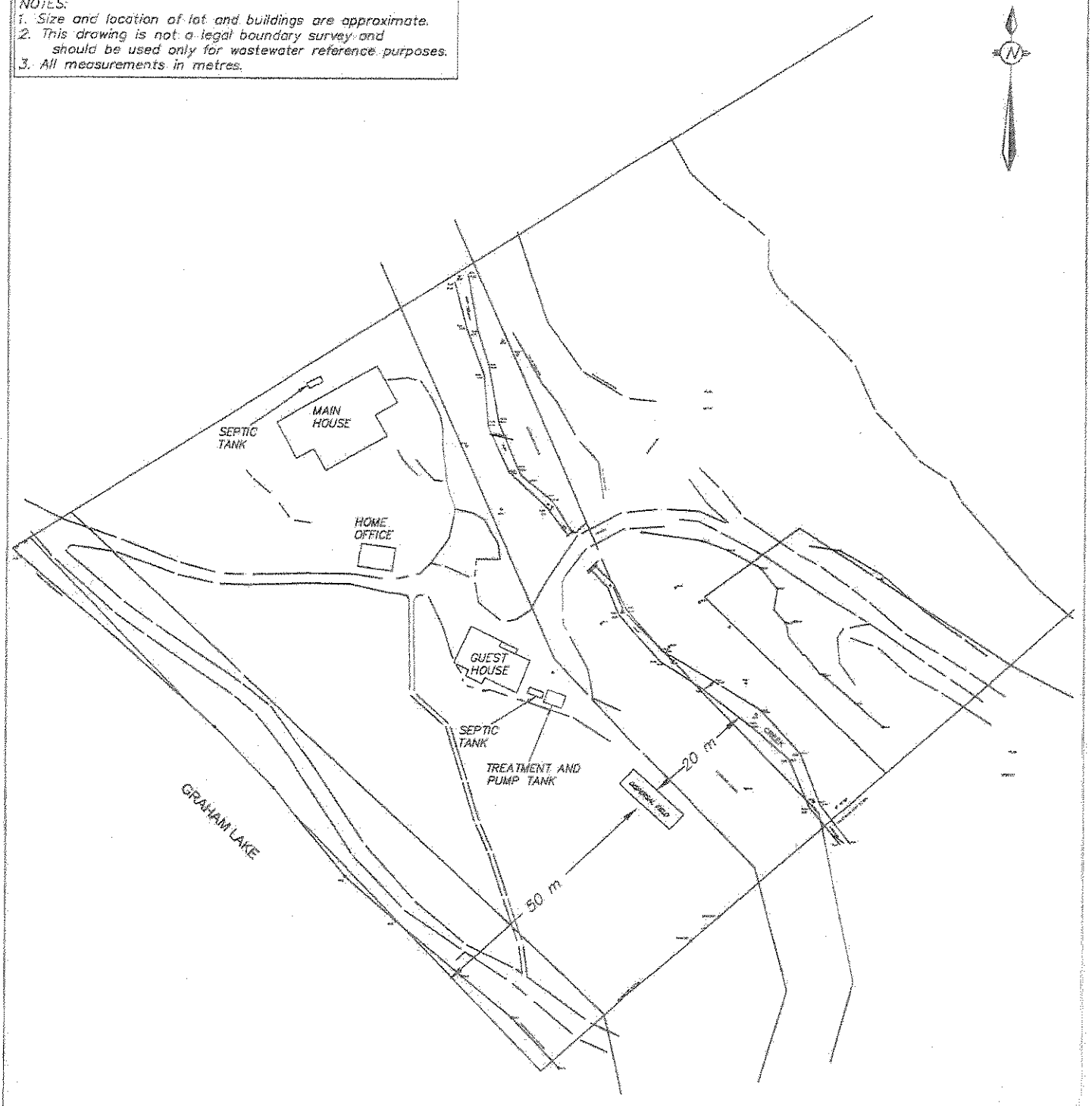
Based on the following:

- the treatment of effluent to Type 2 10/10 standards with additional depth of sand for Type 3 effluent at the infiltration point;
- up-gradient location of the stream from the wastewater dispersal field and effluent travel direction away from the stream;
- long soil residence time due to the distance to Graham Lake and the effluent velocity in the soil,

H_2O believes that reducing the setback from the wastewater dispersal field to the stream from 30 to 15 metres and the setback to Graham Lake from 60 metres to 40 metres will not likely cause an environmental hazard to the lake or health hazard to any of the lake water users.

The area between the wastewater dispersal field and the lake should remain undisturbed for optimal nitrogen and phosphorus reduction.

NOTES:
1. Size and location of lot and buildings are approximate.
2. This drawing is not a legal boundary survey and should be used only for wastewater reference purposes.
3. All measurements in metres.



BASE DRAWING COURTESY OF PETER MASON SURVEYING

TITLE: SITE PLAN	DATE: MARCH 10, 2016	
	DRAWN BY: SMC	
PROJECT: WASTEWATER SYSTEM SETBACK REDUCTION 3131 JEMIMA ROAD, DENMAN ISLAND	CHECKED BY: SMC	
	SCALE: AS SHOWN	
CLIENT: CITIZEN DESIGN	PROJECT NO. 15-81	FIGURE 1

H20 ENVIRONMENTAL LTD. 3060 LAKE ROAD, DENMAN ISLAND, BC V0R 1T0 250-335-1864

H2O ENVIRONMENTAL LTD

3060 Lake Road, Denman Island, BC V0R 1T0
Tel :(250) 335-1864 Fax: (250) 335-1846
Email: h2oenv@telus.net

June 24, 2016 H_2O File: 15-81

Citizen Design
2785 Murray Drive
Victoria, BC V9A 2S4

Re: Addendum to Wastewater System Setback Reduction Study
3131 Jemima Road, Denman Island

Introduction

H_2O Environmental Ltd. (H_2O) was retained by you, on behalf of the owners, to complete a limited hydrogeologic investigation of the above referenced site and to design the wastewater system for the new building configuration. Due to the sensitive nature of the site, H_2O prepared a setback reduction report in March of 2016[1] addressing the setback from the wastewater dispersal field to Graham Lake and the unnamed stream that traverses the property.

H_2O has become aware that there are concerns that there are alternate areas where the wastewater system could be sited without necessitating a setback reduction. This addendum addresses those concerns.

Applicable Setbacks and Development Permit Areas

The proposed setbacks in the report from the wastewater dispersal field were 40 metres to Graham Lake and approximately 15 metres to the intermittent stream.

The Ministry of Health setbacks for a wastewater system are 30 metres from a permanent fresh water body and 15 metres from an intermittent fresh water body.

The Islands Trust setback from a wastewater dispersal field to Graham Lake is 60 metres (m) and to a stream is 30 m^2.

The slope to the northeast of the house and proposed guest house is part of Development Permit Area (DPA) #2 Steep Slopes (Graham Ridge). Denman Land Use Bylaw 185 states that the development permit area is classed as *"environmentally sensitive"* and one of the permit area objectives is to *"protect the natural environment, it's ecosystems and biological diversity from adverse impacts of land alteration"*.

Alternate Wastewater Disposal

The only other area where wastewater dispersal may be achievable is near Jemima Road, to the northeast. Other areas on the subject site are too steep or closer to Graham Lake. The area near Jemima Road was not initially investigated for

[1] H_2O Environmental Ltd. March 8, 2016 *Wastewater System Setback Reduction Study, 3131 Jemima Road, Denman Island*
[2] Islands Trust *Denman Island Bylaw 186, 2008*, Sec.2.3.2

wastewater due to the necessity of the crossing of the stream and the disturbance of the slopes within the DP area.

Discussion

The existing house and the proposed guest cottage are in an area of the property that is located between an intermittent stream and Graham Lake. The area has been cleared in the past, before the present owners. Construction of the buildings and the wastewater system will predominantly be in this cleared area and will require very little disturbance of the current condition of the site. The owners of the site wish to maintain, as much as possible, the mostly intact nature of the property.

Additionally, the actual location of the wastewater dispersal system is 50 metres from Graham Lake. The site plan prepared from a surveyed drawing included in the original study indicates that there is a 50 metre distance to Graham Lake from the dispersal system. The setback reduction in the previous work was proposed for 40 metres to Graham Lake in an attempt to have only one distance for the buildings and wastewater variance. At the time, it was thought it would be clearer to apply for the variance to one distance versus several different distances for several different purposes.

Pumping effluent across a stream bed is problematic. Leaks do not generally occur in PVC piping but the potential for having a pipe leak due to earth movement or burst due to a number of other conditions such as pump failure or freezing cannot be ignored.

There is no location on the site in which the setbacks can be maintained from the stream and Graham Lake or without disturbing the environmentally sensitive slopes. As previously noted, the stream is up-gradient of the location of the wastewater disposal field.

The passive Type 3 system designed for the site will treat the effluent to a much higher standard than just a septic tank alone, which is what is currently being used at the house. The net effect of the installation of the wastewater system will be improved effluent and better quality groundwater flowing towards Graham Lake from the house.

Summary

The only other area available for wastewater dispersal will require disturbance of sensitive slope areas and crossing of a stream with piping containing effluent. This possibility will also disturb approximately 180 metres of the property to allow the wastewater to be dispersed nearer Jemima Road.

The actual setback reduction from the wastewater dispersal field is from 60 metres to 50 metres to Graham Lake.

The overall effect of the installation of a passive Type 3 wastewater treatment system will cause a significant improvement in the shallow groundwater flowing to Graham Lake from the Type 1 system currently in use.

It is the professional opinion of H_2O that the potential impact from the setback reduction at the currently proposed location of the wastewater dispersal field will be less than the potential environmental impact from pumping effluent across the stream and excavation of a ditch of over 180 metres length crossing the sensitive slopes to the northeast of the house locations.

Closure

This addendum has been prepared by H_2O Environmental Ltd. for the property owners, Citizen Design, Islands Trust and Island Health and is intended to provide additional information for the wastewater system proposed for 3131Jemima Road on Denman Island. Please do not hesitate to call if you have any questions or comments concerning this report.

Sincerely,
H_2O Environmental Ltd.

Per: _____
Steven M. Carballeira, P.Geo.

Schedule "D" – Preliminary Maintenance Plan

H2O ENVIRONMENTAL LTD
3060 Lake Road, Denman Island, BC V0R 1T0
Tel :(250) 335-1864 Fax: (250) 335-1846
Email: h2oenv@telus.net

H_2O is pleased to provide you with the following information for the maintenance and inspection of the wastewater system installed on your property as listed below. These are in addition to the references and requirements provided to you by Bionest Technologies. Please note that a qualified person MUST perform or supervise all inspections, monitoring and maintenance services.

COMPONENTS OF THE WASTEWATER SYSTEM:

Passive Type 3 treatment equipment consisting of:

One	New 11,365 litre 3 chamber concrete septic/treatment/pump tank
One	Bionest BN500 Bioreactor treatment system with associated aerators
One	Polylock A100 (8 x 18) effluent filter
One	Hydromatic SHEF 45 effluent pump
One	SJE Rhombus IFS C level control panel
Two	Seepage bed dispersal field

General Description of System Function

The system receives sewage to the first chamber of the 3 chamber tank. The solids within the effluent settle and anaerobic action starts to decompose solids. The second chamber contains the Bionest treatment system. It consists of micropore diffusers and a suspended media system. Aerobic bacteria consume effluent bacteria within the suspended media.

The effluent then gravity feeds to the pump chamber, where the effluent is pumped to the dispersal field. The effluent is pressurized through piping orifices where it sprays onto the inside of the orifice shields in both sand mounds at the same time. The treated effluent impacts the ceiling of the shields and spreads more evenly over the aggregate and imported washed sand. From the sand, the treated effluent infiltrates to the native soils where it receives final polishing through natural microbial activity.

Control Panel

The SJE Rhombus control panel is actuated by a solid state transducer in the pump chamber. The transducer is set 1 inch off the bottom of the tank. The levels listed below are referenced from the “0” point of the transducer in inches. The redundant off setting protects the pump if the panel malfunctions. The enable setting activates the time dose function so the timer continues to dose until the effluent falls below that level. This allows time dosing throughout the day, not only when flows are high. The timer override setting is used for peak times and reduces the time between doses when activated.

The high level alarm will sound if the effluent reaches that level. The high level is set to have a 50% daily flow reserve volume so as to allow time for response to a repair call.

Should the alarm on the control panel sound, silence the alarm with the switch on the side and call your maintenance provider immediately.

Silencing the alarm without calling a maintenance person could result in significant damage to the system or your home. ALWAYS call for maintenance when the alarm sounds – it is an indication that the system is operating outside of design parameters.

Inspections, Monitoring & Maintenance of System Components:

All components of the septic tank system should be inspected within six months of installation and annually thereafter. This inspection should ensure that all components are operating as per design. Inspection should consist of the following:

- All accessible pumping fittings and components for leaks and/or breakage;
- Check septic chamber for signs of current or previous backing up of effluent - liquid levels, residue or solids at elevations higher than normal working levels;
- Check aerators;
- Check growth on media for excessive bacteria or organisms;
- Check for trickle flows in septic chamber when occupants not using water;
- Assess the sewage characteristics in the septic chamber – signs of excessive tenant use of materials harmful to bacteria, unusual solids build-up and non-biodegradable materials;
- All electrical components. This includes the pump and control panel and aerators. All electrical connections and junctions should be inspected for water tightness and or corrosion;
- Test sensors for proper function and test all audio alarms;
- Record all cycle counts, pump run times and error messages;
- Access lids for security, water tightness and structural integrity;
- Septic chamber and treatment chamber to determine when to be de-sludged. This could be:
    - Total solids more than 1/3 tank height
    - Scum layer reaching top of outlet T

Inspection & Maintenance of Disposal Field Components:

The following should be addressed during maintenance:

- ensure the disposal field area is not collecting surface water;
- ensure no damage has been done to the receiving areas;
- inspect and flush pressure system – direct liquids back to the treatment plant;
- check for indications of leaks – spongy areas, excessive growth, ponding;
- inspect all observation ports before and after pump dose;

Tank
Dan's Precast, 6572 North Road, Duncan, BC 250-746-7400

Filter
Polylock 122 by Polylock, 3 Fairfield Blvd., Wallingford, CT 06492 Tel: 888-765-9565

Treatment System
Bionest Technologies, 55 12th Street, Grand-Mere, P.O. Box 697, Quebec G9T 5L4 Tel: 866-538-5662

Pump
Hydromatic Pumps, 740 East 9th Street, Ashland, OH, 44805 Tel: 489-281-9249

Control Panel
SJE Rhombus, 22650 Country Highway 6, P. O. Box 1708, Detroit Lakes, MN 56502 Tel: 800-342-5753

System Designer
H_2O Environmental Ltd.
3060 Lake Rd, Denman Island B.C. V0R 1T0
Tel: 250-335-1864

APPENDIX I

Notice to Occupant and Standards of Good Practice

NOTICE TO OCCUPANT

This property is NOT connected to a municipal or city sewer service. Located on the property is a wastewater treatment system that discharges the treated wastewater into the ground within the boundaries of the strata property.

The onsite wastewater transfer equipment will work properly providing that the occupant of the premises sends down the drain wastewater that is not harmful to the septic tank bacteria or the environment and that the prescribed system maintenance is completed in a timely manner.

STANDARDS OF GOOD PRACTICE

DISINFECTANTS OR BLEACHES
Use in small quantities only. Use non-chlorine cleaners that are biodegradable and non-toxic.

ALL DETERGENTS
Should be low-suds, biodegradable, and low phosphate and contain either baking soda or washing soda.

PAPER PRODUCTS
Use only white paper products. Some natural bacteria do not eat colour dyes in paper and therefore do not break down coloured paper. Non-bleached paper (brown in colour) takes a long time to break down due to the increased level of wood pulp and can therefore clog septic tanks and treatment systems.

NO OILS, GREASES, CHEMICAL WASTES OR PAINTS
NO GRANULAR DRAIN CLEANERS
NO TIDY BOWL STYLE PRODUCTS SHOULD BE USED
NO DISCHARGE FROM WATER SOFTENERS

NO HARSH CHEMICALS OR TOXINS SHOULD BE PUT INTO THE SYSTEM
(Household paints / solvents / thinners / caustic cleaners / pesticides / herbicides etc.)

OBJECTS NOT TO BE PUT INTO THE SYSTEM

Disposable diapers	Sanitary Napkins	Home brewery waste
Bandages	Rags	Dental floss
String	Condoms	Plastics
Coffee grounds	Cigarette butts	Metal objects
Automotive fluids	Paper towels	

In-sink garbage disposal units
The original onsite wastewater filing, treatment plant and drain field were NOT designed for this unit, and the addition afterwards and the use of this appliance may increase both the organic matter and water entering the treatment plant which may upset its performance and may cause damage to the drain field. Therefore, it is strongly recommended that this appliance not be installed. All solid waste should be disposed of through composting or garbage collection.

Laundry Wash Loading
The system has been tested and designed around normal laundry washday loading. It is recommended that wash loads be spread out over several days.

Septic Tank Additives
They do more harm than good. Please refrain from using them.

Schedule "E" – Site Plan

Sensitive areas noted on the Property

DP Area No.4: Graham Lake
30m min. setback to be maintained, No proposed development

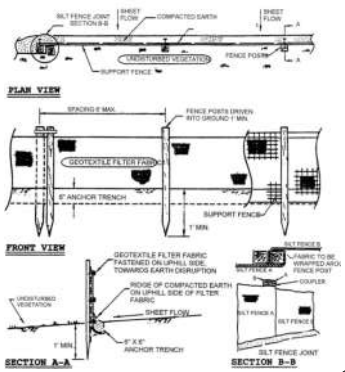
DP Area No.4: Minor Stream
10m min. setback to be maintained, No proposed development
* Note Isl. Trust mapping is not consistent with covenant or stream boundary

Steep Slope Development Permit Area No. 2: Graham Ridge
No proposed development along steep slope or above embankment

Sensitive Ecosystem Mature Forest- Tertiary Class
No proposed development in this area
* Environmental impact assessment confirmed no sensitive features in this area

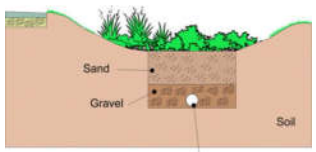
Notes
- Grey shaded area denotes Development Permit Areas as determined by Island Trust mapping
- Outline of stream shown is the high water mark boundary as defined by a registered QEP and BCLS

SILT FENCE



3131 Jemima Road
LOT 3 SECTION 13 PLAN 38716
R-2 ZONE
PID: 000-980-820
Lot area: 3.15 hectares / 7.79 acres
Max. Lot Coverage: 25%





INFILTRATION PIT SECTION | 1

Green hatched areas: No removal of vegetation and no soil disturbance between the septic field and Graham Lake as recommended by H20 Environmental Ltd. and Aqua-Tex Scientific Consulting Ltd.;

Legend

- Silt fence locations
- Water Bar locations
- Infiltration pit location
- Proposed setbacks (variance requested)

AS PER SOIL EROSION AND SEDIMENT CONTROL PLAN APRIL 24, 2017

PROPOSED SITE PLAN
scale 1:500

CITIZEN
THINK. DESIGN. BUILD.

Citizen Design Build Inc.
2785 Murray Dr.
Victoria, BC V9A 2S4

250.590.3960
www.citizenbuilding.ca

CLIENT
Quinn Lundberg

PROJECT ADDRESS
3131 Jemima Road
Denman Island, BC

APPLICATION
DVP & SUP

DESCRIPTION
Proposed Site Plan W/ vegetation protection and soil erosion and sediment control plan

ISSUE
April 24, 2017

DRAWN BY
RM

-THIS IS A COPYRIGHT DRAWING AND DESIGN AND SHALL NOT BE USED, REPRODUCED, OR REUSED WITHOUT PERMISSION.
-THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE DESIGNER PRIOR TO COMMENCING THE WORK.
-THESE DRAWINGS ARE NOT TO BE SCALED.
-CITIZEN DESIGN BUILD INC. INCURS NO OBLIGATION TO SUPPLY CAD FILES FOR THIS PROJECT TO THE CONTRACTOR OR SUB-CONTRACTORS. CITIZEN DESIGN BUILD INC. AND ITS EMPLOYEES ARE NOT LIABLE TO ANY OTHER PARTIES RELATING TO THE USE OF THESE DRAWINGS

Site1

MEMORANDUM

File No.: 6930-20
(Agriculture Area Plan)

DATE OF MEETING: May 2, 2017

TO: Denman Island Local Trust Committee

FROM: Ann Kjerulf, Regional Planning Manager
Northern Team

SUBJECT: Denman Island Farm Plan Implementation

PURPOSE

The purpose of this memorandum is to provide the Denman Island Local Trust Committee (LTC) with an update on the status of early referrals for the Denman Island Farm Plan Implementation project.

BACKGROUND

The following resolutions were passed at the November 15, 2016 meeting of the Denman Island Local Trust Committee (LTC):

> **DE-2016-084**
> **It was MOVED and SECONDED,**
> that the Denman Island Local Trust Committee refer the list of proposed Official Community Plan and Land Use Bylaw amendments to the Advisory Planning Commission for comment, such referral to include the comments made by the Local Trust Committee at the November 15, 2016 meeting.
>
> **CARRIED**
>
> **DE-2016-085**
> **It was MOVED and SECONDED,**
>
> that the Denman Island Local Trust Committee refer the Farm Plan Implementation Staff Report including updates based on the November 15, 2016 Local Trust Committee meeting discussion to the Denman Growers & Producers Alliance for its comments.
>
> **CARRIED**

The Farm Plan Implementation project was subsequently referred to both the Denman Island Advisory Planning Commission (APC) and the Denman Growers & Producers Alliance (GPA) for input. Due to expiring APC member terms and the need to appoint new members, the APC was unable to meet to consider the referral.

The GPA did meet to consider the referral and provided extensive comments (Attachment 1). Staff note that the GPA referral response included the following: "The GPA would be willing to consider engaging our membership in further discussions on the items proposed for implementation" and suggested additional items could be considered through the project.

NEXT STEPS

Once new APC members have been appointed and have received an orientation to their role and responsibilities, staff will refer the Farm Plan Implementation project for APC review. Upon the receipt of a referral response from the APC, staff intend to report back to the LTC for re-evaluation of the Project Charter and consideration of next steps in the Farm Plan Implementation project process.

Submitted By:	Ann Kjerulf, MCIP, RPP Regional Planning Manager	April 28, 2017

ATTACHMENTS

1. Referral response from Denman Growers & Producers Alliance

Farm Plan Implementation - Referral to GPA from Denman Local Trust Committee
February 2017

A meeting was held by a subcommittee of the GPA on Feb 15 at the Community School Library (5:45-6:45pm) to discuss this Referral.
Attending:
Emily Anderson
Erika Bland (chair/note-taker)
Naomi Elliot
Dylan Gale
Pat Jones
Selwyn Jones
Regrets:
Doug Wright (comments provided by email)

Meeting Focus Questions and GPA Responses

1) What does the GPA think of the chosen priorities (#s 5, 11, 13, 14) of the IT Staff/Denman LTC for implementing the Farm Plan (FP)?

#5— Establish facilities to support processing and storage of farm products

- GPA would like to see LTC support facilities to support processing and storage of farm products if a project proposal related to these activities is brought forward.
- Therefore, we agree that this should be prioritized as part of FP implementation.

#11— Undertake a review of farm worker housing and agritourism accommodation

- GPA hasn't had much activity in this arena, but members have explored is previous to or alongside GPA activities. A report and proposal made by V. Timmons a number of years ago was received with mixed reviews by islanders.
- GPA recommends that LTC consider ways to alter LUB and OCP to support farm worker housing and agritourism on Denman. Corlan vinyeard proprietors had a past experience in which the comments of the LTC were overridden by IT planning staff who negatively commented on a proposal for land to be put into ALR without the input of the LTC. Gabriola staff comments were “a stopper” for Corlan’s first and second proposals. If policy is created that supports farm worker housing and agritourism on Denman, it was felt that this kind of experience is less likely to occur again in future, because LTC will have a point of reference for supporting similar proposals made by islanders to have their land added to the ALR.
- GPA questions whether it is a ‘review’ of the policies outlined in Recommendation #11 that is needed. Rather it was suggested that an overall policy should be created that generally supports the retention of land in ALR (through, perhaps, exploring a policy of no net loss, *and* consideration by LTC of proposals to add land to ALR). We question what actual changes might/could be made through a ‘review’.

- Also we note that farm worker housing need not be isolated as solely a "farming issue" on Denman, as housing is generally an issue in our OCP and Land use. Adding farm worker housing and agritourism as sub-issues of wider tourism, and housing concerns on Denman makes sense, as well as looking at these as farm planning issues.

#13— Implement zoning updates through the Land Use Bylaw

- More information is needed about what implementing this recommendation would entail.
- GPA is overall supportive of the LTC/Staff considerations to update zoning as part of Farm Plan Implementation, and may have more input when deciding which of the 10 FP actions within this recommendation are the focus of implementation. Many of these actions are of interest to GPA members.
- Question: what is the duration of a Temporary Use Permit and how might this be relevant for farming operations seeking this kind of permit?
- GPA agrees that pursuing a market in the W2 zone would be difficult and had no further relevant comments at this point.

#14— Amend the Official Community Plan

- GPA Directors believe that carrying out this recommendation could instigate beneficial opportunities for the farming community, and is generally supportive of LTC/Staff prioritizing it.

Other Issues GPA feels need to be considered in this process:

- Regarding no net loss—GPA requests that a policy be developed that LTCs support applications to add land to the ALR and that we should consider the creation of a no net loss policy regarding ALR land.
- GPA feels that the following is an issue for priority consideration in the OCP: 'minimum lot sizes'. We suggest the provision that LTC consider these on a case by case basis and weigh in agricultural uses when determining actions around subdivisions both within and out of the ALR.
- GPA members suggest that policies be created to allow for farm processing in the Light Industrial Zone, even despite the fact that only one property currently exists under this zoning. It was felt that providing for this may prompt zoning change proposals to create more farm processing operations on the island, which could increase the viability of farming enterprises here, and thereby directly or peripherally support other recommendations of the FP.
- Development Permit Areas – a review of DPAs and how these affect farming operations should be considered in the FP implementation. The consideration of new DPAs related to farming activities would be forward-thinking. If considered now as part of this larger FP review and process, this could save hassle later and also could help to resolve unanticipated future conflicts. It was suggested that DPAs need to be enacted and enforced in a uniform way across the island.

Farm Plan Recommendations overlooked by LTC/IT staff, but GPA feels should be prioritized:

#4—Lobby BC Ferries to Support Farmers

- Island communities are integral to BC economy and require unique planning processes relating to the means of travel (Ferry) that serves the Islands Trust Area.
- Denman growers often serve off-island markets, and of the prohibitive cost of travel and transport makes the cost of ferries a key issue.
- Provincial slaughter (class D&E) licensing opportunities are impacted by ferries. Opportunities for licenses are limited on Denman Island by the fact that Ferry travel increases travel times to slaughter facilities off-island, but this extra time is not taken into account in overall eligibility requirements for these licenses which are based on distance of a producer from the nearest slaughter facility.
- Priority loading of ferries is a farming issue – livestock or produce in transit should have priority on ferries

#8— Educate and support new and current farmers

- Educate, and financial support (through favourable taxation, permitting etc.) for new and current farmers should be a priority.
- New ways of allocating finances to support farm enterprises would benefit the island residents and economy.

Which of the 14 recommendations is GPA already advancing? How?

Many of the recommendations identified in the Farm Plan have been advanced by the GPA (7 of the 14). Some of these are listed here:

1. Enhance cooperation amongst farmers for marketing

- GPA supports and recently took on management and oversight of the farmer's market
- Provided off-island opportunities for marketing produce in 2016

2. Consider agritourism initiatives

- Applefest, Farm Tours

3. Make farm products more accessible to the Denman Island Community

- Farmer's market
- Support local community through scholarships which may increase local farming activity and products available
- Provide affordable rentals of equipment needed for value-added processing of farm goods
- Provide a farmer and local food directory and a website for sharing of information about local growers and producers
- Provide and help maintain a cooler (in collaboration with the general store) for the storage and sale of local produce

5. Establish facilities to support processing and storage of farm products

- GPA carried out a farmer survey on Denman in 2015-16 to assess the need for on-island storage and processing facilities to support local growers.

6. Increase the availability of farming-related workshops and courses

- GPA has worked with DICES to organized farming-related workshops on Denman Island

- GPA provides two annual bursaries to support island residents to pursue farm-related education

8. Educate and support new and current farmers

- GPA has worked with DICES to organized farming-related workshops on Denman Island
- GPA provides two annual bursaries to support island residents to pursue farm-related education

9. Promote the active use of farmland

- GPA's network and events support the increased communications between local growers and producers, creating new learning and other opportunities for actively using farmland on the island
- GPA Directors engage with public agencies such as the Islands Trust on issues related to farming on Denman that may have implications for local policy and planning, such as this referral by the Local Trust Committee and IT Staff for input on Farm Plan Implementation.

In general:

- GPA would like to see more collaboration between LTC/IT staff, and the GPA and its constituents. It was generally felt that more support from IT for GPA activities would be beneficial for advancing farming and food security initiatives on the island.
- GPA implores the LTC and IT staff to create policies which prevent the hindrance of agricultural activities.
- GPA recognizes that the Farm Plan has many ideas that could benefit the island population and community, but we may only just be starting to build the capacity to carry out some of these ideas in any meaningful way. By creating policies that are favourable to and supportive of agricultural activities, especially practices which support and enhance, rather than degrade or deplete natural ecosystems on the island, we can allow and provide for the continued growth of this community and sector in a sustainable way.
- Many things mentioned in the FP are already happening on Denman. Information sharing around these initiatives to generate wider participation would be beneficial.
- Promoting the FP during its implementation phase would draw more attention in the community to some of the issues addressed in the Plan.
- The GPA would be willing to consider engaging our membership in further discussions on the items proposed for implementation, as well as the additional items outlined below. The Denman GPA could offer a valuable communications link between the LTC and island farmers during the Implementation process.
- It was felt overall that a key issue not encompassed in the 14 recommendations of the FP, but that is widespread in our region, is land access. Long-term secure tenure for farmers is crucial for generating agricultural activity and creating sustainable farming operations. The Denman LTC could consider the development of supportive policies or legislation, including an agricultural land registry, in collaboration with other organizations already undertaking this (Young Agrarians), to help pair unused farmland with prospective farmers.
- Basically we are hoping Islands Trust can undertake a "can do" approach to farming on Denman within reason.

- We see young farmers as being an important part of our local economy and school system.
- For Bonafide Farm or Farmer, we suggest the definition be Bonafide Farm income greater or planned to be greater than $10,000 per year.
- For Bonafide new and old farmers there needs to be an expedited process that ensures a response from Islands Trust to agricultural issues within a six-month period. We know of people wanting to farm that have had issues drag on for years until interest is lost and those people go elsewhere.
- Farm accommodation as reported in the staff report is not broad enough. For Bonafide farmers or farms needing additional housing, said houses should be limited in area (1800 square feet?) such that a young family can occupy and comfortably raise children.
- Agritourism accommodation needs to be evaluated on a case by case basis. However, campsites might be a good start, subject to no loss of agricultural production on Bonafide farms.
- Alternative land tenure agreements need to be supported to bring land into production.
- Some GPA members are not in favour of agricultural clustering. For example, if family members should want to come and farm on a family property, they should not be expected to build houses in the same area—space and privacy issues are important considerations. We suggest that an alternative to clustering should be to allow building on lower class farmland in such a way that minimizes overall loss of good farmland.
- The farm plan insufficiently addresses water issues. Issues that come up relating to Seasonally flooded fields, RAR mapping, and Development Permit Area 4 should be considered in terms of their relationship to agriculture. Watercourse mapping needs to be accurate and there needs to be a workable method to update mapping when issues are raised by landowners. Drainage issues (watercourse maintenance) need to be addressed. Some of Denman's best farmlands are in swamps. Especially in historic farmlands, drainage ditches were constructed that now cannot be cleared in some mapped watercourses. GPA suggests the work should be allowed subject to following environmental guidelines to preserve water quality and availability. Also, the new Water Sustainability Act will have impacts on agriculture on Denman, and IT could assist farmers with local interpretation of and responses to these impacts.

STAFF REPORT

File No.: HO-6500-20
First Nations Relationship Building

DATE OF REPORT: April 25, 2017

TO: Hornby/Denman Island Local Trust Committees

FROM: Marnie Eggen, Island Planner, and
Fiona XETXÁTTEN MacRaild, First Nations and Marine Issues
Northern Office

SUBJECT: Developing a Shared Narrative of Hornby/Denman Island with local First Nations

RECOMMENDATION

1. **That the [Hornby/Denman] Island Local Trust Committee endorse the attached project charter which will strive to amend the [Hornby/Denman] Island Official Community Plan (OCP) in two phases. As a first step, integrating a First Nations "deep history" narrative and place names within the OCP. Then, in cooperation with local First Nations, review the OCP for opportunities for First Nations to participate in the work of the LTC more meaningfully.**

2. **That the [Hornby/Denman] Island Local Trust Committee encourages residents of [Hornby/Denman] Island to voluntarily start sharing First Nations place names and histories of the island through various stakeholder community groups and community events and, where possible, influence the content of signage to include First Nations' place names and context of Indigenous use of places.**

REPORT SUMMARY

Over the next 12-18 months, it is recommended that the Hornby/Denman Island Local Trust Committees (LTCs) follow the pattern of successful relationship building with local First Nations found in Australian local governments. This work can start with activities that focus on Indigenous place names and the development of a shared narrative of the island through amendments to the Official Community Plans (OCP) of both islands. From this example, the LTC can encourage voluntary participation across the many sectors and interest groups on the island to participate in researching and developing a shared narrative of place in their own way.

Although formally changing the name of a place requires some complex processes, the LTCs can easily amend their OCPs as a long-lasting demonstration to building a mutually respectful relationship with local First Nations. It is recommended that this be done in two stages:

- The first stage would be an introductory section of the OCP sharing their history and perspective of the island and an inclusion of published maps of Indigenous place names on Hornby/Denman Island and the surrounding land and waters
- The second phase, after a time of developing a voluntary uptake of a shared narrative of place, can involve looking at local planning tools to better identify and protect places of significant historical value to First Nations in the region, and incorporating those policies into the OCP.

BACKGROUND

Recent Meeting with K'omoks First Nation

After three staff members went to the K'omoks band office on March 7, 2017 to meet with the Fisheries and Land Manager, Cory Frank regarding referrals and overall ways to improve the ways in which Islands Trust can work with K'omoks, Cory Frank shared notes of the meeting with K'omoks Chief and Council. A few days later, on March 11, Trustee Law met K'omoks staff and members on Hornby Island to say hello while they were there to view some of their Nation's special places on Hornby. Shortly afterwards, on March 23, K'omoks Band Manager invited Islands Trust elected officials and staff to make a presentation at the April 10 Chief and Council meeting.

During the meeting on April 10, both elected officials and staff of Islands Trust and K'omoks offered ideas that would help develop a mutually respectful relationship between the two agencies. A 3-D carved salmon was given to K'omoks Chief Rempel as a gift (see below) to signify a genuine intention to develop a good working relationship and blankets were also given to individual members of the Council. Ideas discussed included:

- A public event on one of the islands that could include elders and knowledge-keepers from K'omoks to share stories about the Islands Trust;
- View possible sites on both islands where a K'omoks totem poles could be erected;
- Work in partnership with BC ferries in displaying a shared narrative of place in the new waiting rooms recently built on both Islands;
- Islands Trust staff work with K'omoks staff to help compose a narrative of the "deep history" of Indigenous places on the islands, to be used in the introductory sections of both OCPs;
- K'omoks to review and, where appropriate, share with Islands Trust Indigenous place names on the islands to be included in the OCPs.



Best Practice Guidelines: International Examples

Both New Zealand and Australia adopted the United Nations Declaration of the Rights of Indigenous Peoples (UNDRIP) in 2009 and have been developing a national culture of reconciliation for about eight years (compared to Canada who only adopted UNDRIP in 2016). Australia in particular has encouraged local government authorities to develop Reconciliation Action Plans (RAPs). Over 590 Australian organisations currently have RAPs

and in 2011, *Reconciliation in Local Government Project: Action Research Report* was published to share key issues, challenges and opportunities local governments have with their RAPs.[1]

Hornby/Denman Island Local Trust Committees can glean some insights into what activities have been proven to be successful from this Report and have it guide a Project Charter for First Nations Reconciliation Activities. In particular, the Australian experience shows that developing a shared narrative of place in cooperation with local Indigenous peoples is an important first step, and the process of working together is generally more meaningful in building genuine relationships than the final products.

ANALYSIS

Local governments in Australia have found that introducing a shared narrative of place through initiatives that involve signs, street names, landmarks, waterways and memorials have had good success at establishing a foundation of mutual respect. The emphasis should be on the process of this work as this is what really builds the relationships between the LTCs and the Nations, not necessarily the quantity or quality of the work. The relationships- real friendships – are the most enduring outcome of this work.

Other aspects of RAPs that were found to be successful at building relationships in Australia; taking a pro-active role in facilitating the documentation and promotion of local Aboriginal and shared histories. In order to redefine the narrative of place on Hornby/Denman Islands, a broad range of stakeholder groups in the community need to be encouraged to distribute and promote that shared narrative of place through the involvement of local libraries, museums, community halls, historical societies, etc.

At the same time, demonstrating commitment to this for the longer term involves amending the Official Community Plan. An introductory paragraph of First Nations' connections to the lands and waters around Hornby/Denman Islands – coupled with a map of Indigenous place names on the island (and ensuring permission from the Nations for sharing) shows leadership from the LTC to the residents of the islands. Raising awareness of the history of First Nations in the region takes time, but as that grows on the island community, there will develop more courage to consider amending the OCP in a more meaningful way with policies and tools of identification and protection of places of historical value to First Nations.

Policy/Regulatory:

2014-2018 Strategic Plan. Goal D: Effective, Efficient and Collaborative Governance

- Priority 6.1: Improve engagement with First Nations
- Priority 6.2: Improve protection of archaeological and First Nations cultural resources

1. [1] McKinnon, Erin, *Reconciliation in Local Government Project: Action Research Report*, November 2011, Reconciliation Victoria (Australia) http://www.reconciliationvic.org.au/pages/local-government.php

Issues and Opportunities:

Phase 1: Integrating First Nations Place Names and Historical Narrative on Hornby/Denman Islands (May – Sept 2017)

Officially changing the name of a place is a complex process. For example, when the Queen Charlotte Islands were changed to their original name "Haida Gwaii", it involved considerable resources to change official maps, addresses, etc. However, integrating local Indigenous place names and histories at an informal level is relatively easy. As this narrative of shared history gains momentum over time, a more official demonstration may be considered in the future.

Project #1: A Public event where K'omoks elders and knowledge-keepers are invited to share their community's connections to Hornby and Denman Islands. Having this event on a Saturday afternoon and incorporating a shared meal would help facilitate a warm and friendly atmosphere between K'omoks members and island residents and visitors. An hour can be set aside either before or after for elected officials to meet and discuss protocols and activities related to working together. There is currently an application for C2C funding to help offset costs of such an event.

Project #2: Amending the Official Community Plan to incorporate an Introduction section that contextualizes the island Trust Area in a much longer history than just the non-Indigenous settlers, and the inclusion of an additional map of Indigenous place names on Hornby/Denman Islands.

Phase 2: Building Community to Community Relationships and Integrating Indigenous Law Principles into land-use decisions (Oct 2017 – August 2018)

Project #1: Having shown leadership in establishing a shared narrative of place through amending the OCP and investing in a sign that demonstrates this intent, the LTC can further encourage and support other community groups to voluntarily follow suit and reach out to First Nations to develop a shared narrative of the islands in their own way.

The following list is only provided as a suggestion and to inspire ideas. It may inadvertently omit a group or an idea for reconciliation but its intent in this Report is to demonstrate the broad range of reconciliatory activities that can start to shift the culture on Hornby/Denman Island towards an improved and mutually respectful one to First Nations.

Island Community Assoc./Event	Possible Ways to Include Indigenous participation
Hornby Fall Fair (September) - organized by the Hornby Island Residents' and Ratepayers' Association (HIRRA)	• Invite K'omoks to open events with a K'omoks welcome to their territory • Ask if K'omoks would like to sell food at a booth or sell arts and crafts
The Herring Festival (March) - organized by Conservancy Hornby Island.	• Ask Cory Frank to be a guest speaker on K'omoks FN connections to the herring fishery
The Hornby Festival (August) - organized by the Hornby Island Festival Society	• Invite K'omoks members to participate in the Festival through members who might like to share dance, song, art or other skills
Denman Fall Fair (September) - organized by the Denman Island Residents' Association (DIRA)	• Invite K'omoks to open events with a K'omoks welcome to their territory • Ask if K'omoks would like to sell food at a

	booth or sell arts and crafts
Denman Island Community School	• The School runs extracurricular activities for all community members and could host workshops featuring Indigenous knowledge-keepers, cultural practitioners, etc • The school could install signage about Indigenous presence in the area, and/or to have permanent indigenous art on display • The school library could buy books by indigenous writers for children and youth and publicize these (I would be happy to help with publicizing).
Denman Conservancy	• Include First Nations acknowledgement on their signage, website, and other communications • Host workshops with indigenous knowledge-keepers focussing on indigenous approaches to environmental protection
Denman library (a private, volunteer organization):	• Buy books by indigenous writers from the list of FN-themed literature provided on Islands Trust website (developed by a trustee from Gabriola and CBC's Shelagh Rogers)
Association of Denman Island Marine Stewards (ADIMS)	• Invite FN knowledge-keepers to give workshops about their approach to marine environmental protection • Acknowledge First Nations on their website and other communications • Invite First Nations representatives to their events

Project #2: Once a culture of awareness of First Nations history and connections to Hornby/Denman is underway, the OCP can be examined again for possible further amendments to improve the identification and protection of significant historical places for First Nations through the suite of tools available through the *Local Government Act*. Possible projects could include:

- A shoreline protection review in coordination with local First Nations;
- A review of tools to improve the identification and protection of significant Aboriginal historical places;
- A review of decision-making processes to identify opportunities for First Nations to be more involved in land-use decisions.

Consultation:

Consultation with 18 First Nations is inherent throughout the Staff Report.

Rationale for Recommendation:

- Amending the Hornby/Denman OCPs to acknowledge First Nations history, including place name mapping would be an important addition to the community plan and a logical place to start a meaningful and long-lasting relationship building process with local First Nations.
- Understanding Indigenous place names will allow Hornby/Denman residents and visitors to pronounce place names phonetically, which shows respect for the notion of a shared narrative.
- Working with First Nations on a shared narrative will allow for an increased relationship which can lead to future First Nation relationship building initiatives.

ALTERNATIVES

1. Instruct staff to further develop the Project Charter for First Nations relationship building activities, to be considered at the next LTC meeting.
2. Receive for information only.
3. Approve but with certain aspects of the Project Charter amended.

NEXT STEPS

If the LTC endorses the project charter as drafted, the next steps will be to submit a draft event plan for a public event promoting K'omoks FN connections to Denman and Hornby Islands by June 6, 2017 for approval.

Submitted By:	Fiona XE<u>T</u>XÁ<u>T</u>TEN MacRaild, First Nations and Marine Issues	April 25, 2017
Concurrence:	Ann Kjerulf, Regional Planning Manager, Northern Team	April 25, 2017

ATTACHMENTS

1. Draft Project Charter Shared Narrative of Place K'omoks FN for Denman Hornby LTCs

Shared Narrative of Place - Charter v1

Hornby/Denman Island LTC Date:25.04.17

Purpose

For Denman/Hornby Island Local Trust Committees to develop a mutually respectful long term relationship with K'omoks First Nation that honours their connections to the lands and water of both Hornby Local Trust Area and Denman Local Trust Area.

Background

Recently trustees and staff representing Hornby and Denman Islands were invited to meet with K'omoks Chief, Council and key staff on April 10. Many positive ideas were discussed about how the LTCs could develop a mutually respectful relationship with K'omoks FN. The Project Charter outlines activities that will deepen the meaningfulness of that relationship. The Project outlines how Hornby/Denman LTCs can utilize the opportunities of island signage and amendments to the Official Community Plan to reflect a shared narrative of place with K'omoks First Nation.

Objectives

- *Increased understanding and respect for Indigenous connections to the islands*
- *Amending the OCP to reflect the "deep history" of K'omoks FN in the Hornby/Denman Trust Areas and adding maps (with permission from K'omoks FN) of Indigenous special places to the OCPs*

In Scope

- *Hosting a public event where FNs are invited to share their knowledge of Denman/Hornby special places*
- *OCP amendments*
- *Signage in the Trust Area where the Hornby/Denman trustees have some influence over content*
- *Encouraging community associations and events to include and honour Indigenous participation*

Out of Scope

- *Follow-through of activities suggested for community associations and events*
- *Final decision of signage content where signage is a partnership effort of multiple agencies*
- *Indigenous place names that are not publically available online or shared by explicit permission by local First Nations*

Workplan Overview

Deliverable/Milestone	Date
Plan for Public FN Event	June 6, 2017
Draft OCP amendments (introductory section on deep history and map with Indigenous place names)	August 1, 2017
Identification of signage opportunities in Hornby/Denman Trust Area where Indigenous history can be acknowledged	August 1, 2017

Project Team

Fiona MacRaild	Project Manager
Island Planner	Marnie Eggen

Budget

Budget Sources: Hornby/Victoria FN budget (1575); Denman FN budget (1575); Matching C2C funding (3150) (pending). Total 6300 (2017/18).

Fiscal	Item	Cost
2017/18	Public event	4000
2017/18	OCP amend/Legislative	1500
2017/18	Contingency	750
Total 2017/18		**6250**
2018/19 (pending)	OCP amend/Legislative	1500

RPM Approval:

Ann Kjerulf

Date:

LTC Endorsement:

Resolution #:

Date:

	PROJECT CHARTER WORK PLAN OVERVIEW		
Meeting	**Deliverable/Milestone**	**Target Date**	**Cost**
TOTAL			**$**