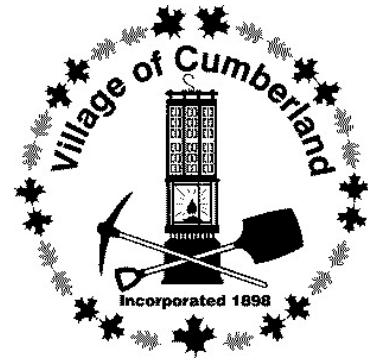


C.O.T.W. MINUTES

01/2018/COTW



The Corporation of the Village of Cumberland

Committee of the Whole Meeting

January 19, 2018 at 9 a.m.

Village Council Chambers

Council Present:

Mayor Leslie Baird
Councillor Roger Kishi
Councillor Jesse Ketler
Councillor Gwyn Sproule
Councillor Sean Sullivan

Staff Present:

Sundance Topham, Chief Administrative Officer
Rachel Parker, Deputy Corporate Officer
Michelle Mason, Financial Officer
Leah Knutson, Manager of Recreation
Rob Crisfield, Manager of Operations
Mike Williamson, Manager of Protective Services

Mayor Baird called the meeting to order at 9:00 a.m.

1. Approval of Agenda

1.1 Agenda for Committee of the Whole Meeting, January 19, 2018.

Kishi/Ketler

THAT Council approve the agenda for the Committee of the Whole Meeting, January 19, 2018.

Carried Unanimously

2. Closed Portion

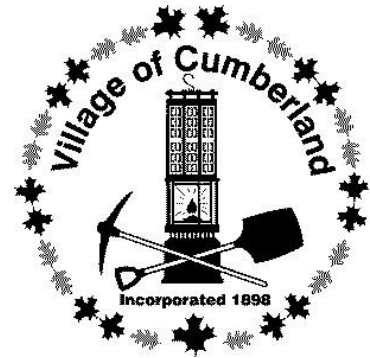
Kishi/Sullivan

THAT Council close the meeting to the public pursuant to Section 90(1) of the *Community Charter* to consider:

- Labour relations or other employee relations;
- The acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality;
- Negotiations and related discussions respecting the proposed provision of a municipal service that are at their preliminary stages and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public; and

REGULAR AGENDA

5/2018/R



The Corporation of the Village of Cumberland

Regular Council Meeting
February 13, 2018 at 5:30 p.m.
Village Council Chambers

1. Approval of Agenda

- 1.1 Agenda for regular Council meeting, February 13, 2018
Recommend THAT Council approve the agenda for the regular Council meeting, February 13, 2018.

2. Adoption of Minutes

- 2.1 Minutes of the Committee of the Whole meeting held January 19, 2018 1
Recommend THAT Council approve the minutes of the Committee of the Whole meeting held January 19, 2018.
- 2.2 Minutes of the Council meeting held January 22, 2018 3
Recommend THAT Council approve the minutes of the Council meeting held January 22, 2018.
- 2.3 Minutes of the Committee of the Whole meeting held February 1, 2018 12
Recommend THAT Council approve the minutes of the Committee of the Whole meeting held February 1, 2018.
- 2.4 Receipt of Committee/Commissions Minutes 17
Recommend THAT Council receive the minutes of the:
- ***Wastewater Advisory Committee, November 30, 2017***
 - ***Economic Development Strategy Steering Committee, December 12, 2017***
 - ***Advisory Planning Commission, January 16, 2018***

3. Delegations

- 3.1 Eduardo Uranga, Resident 29
- Alternatives to space heating with wood, Smoke from Wood Stoves prevention and implementation of alternate space heating devices, in reference to the proposed bylaw.
- Recommend THAT Council receive the delegation of Eduardo Uranga Re: Alternatives to space heating with wood, Smoke from Wood Stoves prevention and implementation of alternate space heating devices, in reference to the proposed bylaw.***

4. Unfinished Business

5. Correspondence

- 5.1 Mary Lynn DesRoches, Resident 30
- Woodsmoke
- Recommend THAT Council receive the correspondence from Mary Lynn DesRoches, Resident Re: Woodsmoke.***
- 5.2 Selina Robinson, Minister, Ministry of Municipal Affairs and Housing 32
- Comox Valley Governance Review
- Recommend THAT Council receive the correspondence from Selina Robinson, Minister, Ministry of Municipal Affairs and Housing Re: Comox Valley Governance Review.***

6. Reports

- 6.1 Trilogy Initial Subdivision – Committee of the Whole Meeting Cancellation 34
- Prepared by Sundance Topham, Chief Administrative Officer
- i) Recommend THAT Council receive the Trilogy Initial Subdivision – Committee of the Whole Meeting Cancellation report.***
- ii) Recommend THAT Council cancel the Trilogy Initial Subdivision Committee of the Whole Meeting scheduled for Thursday, February 15, 2018 at 5:30 PM at the Village of Cumberland Council Chambers.***
- 6.2 Development Permit and Development Variance Permit Applications - 3216 Sutton Road 36
- Prepared by Joanne Rees, Planner
- i) Recommend THAT Council receive the report “Development Permit and Development Variance Permit Applications – 3216 Sutton Road” dated January 31, 2018.***

- ii) Recommend THAT Council grant the Development Permit and Development Variance Permits for property described as Lot B, District Lot 24, Nelson District, Plan VIP79617 (3216 Sutton Road) substantially in compliance with the attached draft Permits.*
- 6.3 Cumberland United Church & Heritage Designation 118
Prepared by Judith Walker, Senior Planner
- i) Recommend THAT Council receive the “Cumberland United Church & Heritage Designation Report” dated February 7, 2018; and*
- ii) Recommend THAT Council direct staff to develop a Statement of Significance as the first step in proceeding with potential Heritage Designation of the Church.*
- 6.4 Environmental Protection Area Development Permit – Coal Valley Estates Water Transmission Line 126
Prepared by Judith Walker, Senior Planner
- i) Recommend THAT Council receive the “Environmental Protection Area Development Permit – Coal Valley Estates Water Transmission Line” report dated February 7, 2018.*
- ii) Recommend THAT Council grant the “Environmental Protection Area Development Permit – Coal Valley Estates Water Transmission Line” for property described as District Lot 24, Nelson District, Except Parts In Plans 21 RW, 522E, 3130, 3268, 4222, 4661, 4824, 4869, 6793, 6794, 11068, 12569, 13409, 13580, 13640, 14028, 15750, 23224, 19381, 19382, 19383, 20746, 21025, 22199, 23092, 23237, 23600, 23685, 24001, 24314, 24868, 25906, 26084, 26131, 26455, 26629, 26885, 27337, 27857, 29860, 30068, 30809, 32692, 35790, 36785, 35098, 50021, VIP64546 VIP65968, VIP65482, VIP67269, VIP71673 And Except Parcel A (DD 27356N) and Parcel B (DD M7897) And Except Parts In Plans VIP72020, VIP72021, VIP72022, VIP73804, VIP74156, VIP75434, EPP15708, EPP17313, EPP18594, EPP20118 AND EPP53358, EPP71001 to permit construction of a waterline substantially in compliance with the attached Development Permit.*
- 6.5 Local Area Service Establishment Bylaw – Second Updated Proposal report 211
Prepared by Sundance Topham, Chief Administrative Officer

- i) Recommend THAT Council receive the Local Area Service Establishment Bylaw – Second Updated Proposal report.*
- ii) Recommend THAT Council direct staff to work with the Cumberland Road Local Area Service participants in the creation of a new property owners’ petition based on the parameters of their letter dated December 22, 2017, along with their email of January 24, 2018.*
- iii) AND Recommend THAT Council direct staff to begin the process of repealing “Cumberland Road Local Area Service Establishment Bylaw No. 1068, 2017” and replacing it with a new bylaw to reflect the updated parameters.*

6.6 Social Procurement Update 218

Prepared by Michelle Mason, Financial Officer

- i) Recommend THAT Council receive the Social Procurement Update report for information.*
- ii) Recommend THAT Council provide feedback on the Social Procurement process and any tweaks to the framework or procurement practices concerning social procurement.*

6.7 AVICC Region Community Benefit Hub to Advance Strategic Procurement 229

Prepared by Michelle Mason, Financial Officer

- i) Recommend THAT Council receive the AVICC Region Community Benefit Hub to Advance Strategic Procurement report.*
- ii) Recommend THAT Council support the Community Benefit Hub Pilot Project as presented by the AVICC working group.*
- iii) Recommend THAT Council direct staff to enter into a two-year pilot period agreement with the City of Victoria and other founding strategic procurement members based on the AVICC membership funding model.*
- iv) Recommend THAT Council direct staff to increase the operating budget in the amount of \$1,700 for 2018 Council membership and travel.*
- v) Recommend THAT Council appoint a member to the Steering Committee for the Community Benefit Hub for the AVICC region.*

6.8 Continuation of the Homelessness and Affordable Housing Select Committee 252

Prepared by Rachel Parker, Deputy Corporate Officer

- i) Recommend THAT Council receive the Continuation of the Homelessness and Affordable Housing Select Committee report.*
 - ii) Recommend THAT Council continue the Homelessness and Affordable Housing Select Committee to June 2019; cancel the August, October and December 2018 meetings, and update the Committee scope of work to*
 - explore the establishment and funding of a Cumberland not-for-profit housing corporation that is independent of the municipality;*
 - facilitate partnerships, specifically with development and non-profit partners, to identify project opportunities for any type of housing in conjunction with the mayor and Village staff; and*
 - any other matters referred to it by Council.*
- 6.9 Continuation of the Accessibility Select Committee 265
Prepared by Rachel Parker, Deputy Corporate Officer
 - i) Recommend THAT Council receive the Continuation of the Accessibility Select Committee report.*
 - ii) Recommend THAT Council continue the Accessibility Select Committee to June 2019 with the following scope of work*
 - Review of community event manual with recommendations to make events more accessible; and outreach with special event coordinators*
 - Consult with emergency planning staff on accessibility*
 - Explore and investigate accessible tourism, and parks and trails mapping*
 - Make recommendations to Council on BC Accessibility 2024 opportunities*
 - And to make recommendation to Village staff on Village facilities, service provision, and other matters upon request.*
- 6.10 2018-2022 Financial Plan Committee of the Whole Report 272
Prepared by Committee of the Whole
 - i) Recommend THAT receive the 2018-2022 Financial Plan Committee of the Whole Report.*
 - ii) Recommend THAT Council approve the following Committee of the Whole recommendations:*
 - a. Recommend THAT Council reduce the growth contribution to the Emergency and Public Safety Reserve Fund in 2018*

- from \$80,000 to \$30,000, and re-allocate \$50,000 to general surplus to be set aside for 2018 projects.*
- b. Recommend THAT Council increase the Managed Forest assessment class ratio to 5:1 for 2018.*
 - c. Recommend THAT Council increase the Light Industrial assessment class ratio to 3:1 for 2018.*
 - d. Recommend THAT Council reduce the Utility Worker 1 staff position to 6 months in 2018 with the savings allocated to the rate stabilization fund.*
 - e. Recommend THAT Council defer the 2018 budget of \$1,000 for the Affordable Housing brochure for developers to 2019.*
 - f. Recommend THAT Council cut the 2018 budget of \$1,500 for the Accessibility Select Committee education/conferences in 2018 only.*
 - g. Recommend THAT Council cut the Accessibility Select Committee promotions budget of \$300.*
 - h. Recommend THAT Council cut the 2018 budget of \$1300 for Victoria Day parade flags.*
 - i. Recommend THAT Council reduce the 2018 Homelessness and Affordable Housing budget of \$1,500 for education and conferences from \$1,500 to \$500.*
 - j. Recommend THAT Council reduce the heritage statements of significance budget from \$7,500 per year to \$500 per year.*
 - k. Recommend THAT Council remove the 2018 Cumberland Lake Park parking project budget of \$5,000.*
 - l. Recommend THAT Council approve the short-term borrowing from the Municipal Finance Authority through the Equipment Financing Program in the amount of \$200,000 for the purchase of a Vactor/flusher vehicle for a five year term that must be repaid in five years.*
 - m. Recommend THAT Council approve the short-term borrowing from the Municipal Finance Authority through the Equipment Financing Program in the amount of \$40,000 for the purchase of a service truck for a five year term that must be repaid in five years.*
 - n. Recommend THAT Council approve the short-term borrowing from the Municipal Finance Authority through the Equipment Financing Program in the amount of \$219,790 for the purchase of a fire engine for a five year term that must be repaid in five years.*

- o. Recommend THAT Council defer making decision on the funding request from the Cumberland Museum and Archives and work with the Society on the museum expansion and upgrades feasibility study and defining future funding.*
- p. Recommend THAT Council defer consideration of funding for a Leisure Access Program to the 2020 budget process when a part-time Recreation Worker is added to staffing.*
- q. Recommend THAT Council direct Recreation staff to explore grant opportunities and partnerships for free or subsidized recreation programs for adults and seniors.*
- r. Recommend THAT Council investigate allocation of \$47,000 from the Parkland Acquisition Reserve Fund towards the purchase of additional parcels of land for the Cumberland Community Forest in 2018.*
- s. Recommend THAT Council donate \$1,000 from Host Community Amenity funds to the Kumugwe Society for the Potlach 67-67 art showcase.*
- t. Recommend THAT Council approve \$25,000 in funding toward the CVRD engineering design study for a bridge across the Inland Island Highway and that the Village not commit to any further funding for the project at this time.*

- 6.11 2018 Corporate Strategic Priorities, Community Consultation 274
Prepared by Rachel Parker, Deputy Corporate Officer
- i) Recommend THAT Council receive the 2018 Corporate Strategic Priorities, Community Consultation report.*
 - ii) Recommend THAT Council direct that the proposed 2018 Corporate Strategic Priorities be included on the February 19, 2018 Village Hall meeting agenda for community consultation.*
- 6.12 Recycle BC Contract Extension Request 284
Prepared by Rob Crisfield, Manager of Operations
- i) Recommend THAT Council receive the Recycle BC Contract Extension report.*
 - ii) AND Recommend THAT Council approve the extension of the Recycle BC (formerly MMBC) Master Services Agreement in the form of Change Order #1 as attached;*
 - iii) AND Recommend THAT Council authorize the Chief Administrative Officer to execute Change Order #1.*

6.13	January 2018 Recreation Department Report Prepared by Leah Knutson, Manager of Recreation	335
	• Recreation Programming Report	337
	• Parks and Outdoor Recreation Report	339
	<i>Recommend THAT Council receive the January 2018 Recreation Department Report for information.</i>	
6.14	Protective Services Report, January 2018 Prepared by Mike Williamson, Fire Chief / Manager of Protective Services	341
	• Bylaw Enforcement Summary Report	344
	<i>Recommend THAT Council receive the Protective Services Report, January 2018 for information.</i>	
6.15	January 2018 - Operations Department Report Prepared by Rob Crisfield, Manager of Operations	346
	• Planning Report	349
	• Public Works Report	354
	<i>Recommend THAT Council receive the January 2018 - Operations Department Report for information.</i>	
6.16	January 2018 Finance and Administration Report Prepared by Michelle Mason, Financial Officer and Rachel Parker, Deputy Corporate Officer	356
	<i>Recommend THAT Council receive the January 2018 Finance and Administration Report for information.</i>	
6.17	January 2018 Chief Administrative Officer Report Prepared by Sundance Topham, Chief Administrative Officer	361
	<i>Recommend THAT Council receive the January 2018 Chief Administrative Officer Report for information.</i>	
6.18	Council Reports	
6.18.1	Mayor Leslie Baird	364
6.18.2	Councillor Jesse Ketler	365
6.18.3	Councillor Roger Kishi	366
6.18.4	Councillor Gwyn Sproule	369
6.18.5	Councillor Sean Sullivan	370
	<i>Recommend THAT the Council reports be received.</i>	

7. Bylaws

- 7.1 Revenue Anticipation Borrowing Bylaw No. 1072, 2018 373
Prepared by Michelle Mason, Financial Officer
Recommend THAT Council adopt the Revenue Anticipation Borrowing Bylaw No. 1072, 2018.
- 7.2 2017-2021 Financial Plan Amendment Bylaw No. 1076, 2018 374
Prepared by Michelle Mason, Financial Officer
Recommend THAT Council adopt the “2017-2021 Financial Plan Amendment Bylaw No. 1076, 2018”.
- 7.3 Council Procedure Amendment Bylaw No. 1078, 2018 376
Prepared by Rachel Parker, Deputy Corporate Officer
i) Recommend THAT Council receive the Council Procedure Amendment Bylaw report.
ii) Recommend THAT Council give first reading to “Council Procedure Amendment Bylaw No. 1078, 2018”.
iii) Recommend THAT Council give public notice of the proposed amendments to the Council Procedure Bylaw.

8. Consent Calendar

9. New Business

- 9.1 Advisory Planning Commission Bylaw Review
Verbal report from Mayor Baird
Recommend that Council consider a report at the February 26, 2018 regular Council meeting recommending that Council direct staff to review and update the “Advisory Planning Commission Bylaw No 999, 2014”.

10. Notices, Motions and Announcements

Matters considered here may include notices or motions to hold a meeting of the Committee of the Whole, a Village Hall meeting, a public hearing, and notices of motion introduced by a council member.

- Budget and Strategic Priorities Village Hall and Open House on February 19 at 7 pm
- Accessibility Committee meeting on February 20 at 6:00 pm
- Homelessness and Affordable Housing Committee meeting on February 21 at 9 am

11. Question Period

12. Closed Portion

Recommend THAT pursuant to Section 90 (1) of the Community Charter Council close the meeting to the public to consider:

- Personal information about an identifiable individual who holds or is being considered for a position as an officer, employee or agent of the municipality or another position appointed by the municipality;
- Law enforcement, if the council considers that disclosure could reasonably be expected to harm the conduct of an investigation under or enforcement of an enactment;
- Labour relations or other employee relations.

13. Adjournment

- Discussions with municipal officers and employees respecting municipal objectives, measures and progress reports for the purposes of preparing an annual report under section 98 [*annual municipal report*].

Carried Unanimously

3. Adjournment

The meeting was adjourned at 2:35 p.m.

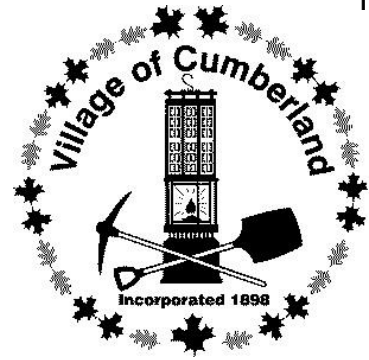
Certified Correct:

Mayor

Corporate Officer

REGULAR MINUTES

3/2018/R



The Corporation of the Village of Cumberland

Regular Council Meeting January 22, 2018 at 5:30 p.m. Village Council Chambers

Council Present:

Mayor Leslie Baird
Councillor Roger Kishi
Councillor Jesse Ketler
Councillor Sean Sullivan
Councillor Gwyn Sproule

Staff Present:

Sundance Topham, Chief Administrative Officer
Rachel Parker, Deputy Corporate Officer
Michelle Mason, Financial Officer
Rob Crisfield, Manager of Operations
Leah Knutson, Manager of Recreation
Joanne Rees, Planner
Kevin McPhedran, Parks and Outdoor Recreation Coordinator

Mayor Baird called the meeting to order at 5:30 p.m.

1. Approval of Agenda

- 1.1 Agenda for regular Council meeting, January 22, 2018

Motion 18-26

Sullivan/Sproule

THAT Council approve the agenda for the regular Council meeting, January 22, 2018, with the addition of late item 4.0.

Carried Unanimously

2. Adoption of Minutes

- 2.1 Minutes of the Council meeting held January 8, 2018

Motion 18-27

Sproule/Ketler

THAT Council approve the minutes of the Council meeting held January 8, 2018.

Carried Unanimously

- 2.2 Receipt of Committee/Commissions Minutes

Motion 18-28

Ketler/Sproule

THAT Council receive the minutes of the:

- Accessibility Committee, October 2 2017
- Homelessness and Affordable Housing Committee, November 8 2017
- Advisory Planning Commission, December 5 2017

Carried Unanimously

3. Delegations

- 3.1 Meaghan Cursons, Cumberland Community Forest Society, Funding Request

Motion 18-29

Kishi/Sullivan

THAT Council receive the delegation of Meaghan Cursons Re: Cumberland Community Forest Society Funding Request.

Carried Unanimously

Motion 18-30

Ketler/Kishi

THAT Council refer the Cumberland Community Forest Society request for funding for the next phase of land acquisition in the amount of \$47,000 in 2018 to the Committee of the Whole budget meeting scheduled for February 1, 2018.

Carried Unanimously

- 3.2 Lee Everson and Robert Everson, Kumugwe Cultural Society, *Potlatch 67-67* Funding Request

Motion 18-31

Kishi/Ketler

THAT Council receive the delegation of Lee Everson and Robert Everson, Kumugwe Cultural Society, Re: *Potlatch 67-67* Funding Request.

Carried Unanimously

Motion 18-32

Kishi/Ketler

THAT Council forward the funding request from the Kumugwe Cultural Society to the budget planning process and confirm the funding request amount with the art gallery.

Carried Unanimously

4. Unfinished Business

- 4.0 CVRD Partnership Proposal: Royston to Cumberland Railway Trail Highway
19 Pedestrian Overpass Project

Motion 18-33

Kishi/Sproule

That Council receive the CVRD Partnership Proposal: Royston to
Cumberland Railway Trail Highway 19 Pedestrian Overpass Project report.

Carried Unanimously

Motion 18-34

Ketler/Sullivan

THAT Council refer the \$25,000 funding request from the CVRD to support
bridge design work to the upcoming 2018 financial planning process.

Carried Unanimously

- 4.1 United Church Heritage Designation Request

Motion 18-35

Kishi/Sproule

THAT Council direct staff to prepare a report on the United Church
Heritage Designation request.

Carried Unanimously

5. Correspondence

None

6. Reports

- 6.1 Environmental Protection Area Development Permit – Coal Valley Estates
Water Transmission Line, Referral

Motion 18-36

Kishi/Sproule

THAT Council receive the “Environmental Protection Area Development
Permit – Coal Valley Estates Water Transmission Line, Referral” report
dated January 18, 2018.

Carried Unanimously

Motion 18-37

Kishi/Sproule

THAT Council refer the application “Environmental Protection Area
Development Permit – Coal Valley Estates Water Transmission Line” report
to the next meeting of the Advisory Planning Commission.

Carried Unanimously

- 6.2 Trilogy Initial Subdivision – Committee of the Whole Date Change
Motion 18-38

Ketler/Sproule

THAT Council receive the Trilogy Initial Subdivision – Committee of the Whole Date Change report.

Carried Unanimously

Motion 18-39

Kishi/Sproule

THAT Council reschedule the Committee of the Whole Meeting originally scheduled for Monday, February 5, 2018 at 5:30 PM to a new date of Thursday, February 15, 2018 at 5:30 PM at the Village of Cumberland Council Chambers.

Carried Unanimously

- 6.3 Local Area Service Establishment Bylaw – Updated Proposal report
Motion 18-40

Ketler/Sullivan

THAT Council receive the Local Area Service Establishment Bylaw – Updated Proposal report.

Carried Unanimously

Motion 18-41

Ketler/Sullivan

THAT the Village go back to the Cumberland Road Local Area Service participants and offer them the same operation costs of \$1,111 per lot for a total of \$9,999 for the whole service area, and the capital cost of \$180,000, which would be \$20,000 per lot or \$4,000 annual payments.

Carried Unanimously

- 6.4 Sutton Road Multi-Use Pathway Tender Results
Motion 18-42

Sproule/Kishi

THAT Council receive the Sutton Road Multi-use Pathway Tender Results report.

Carried Unanimously

Motion 18-43

Kishi/Sproule

THAT Council approve the use of \$30,296 of Developer Amenity Funds to cover the shortfall between the budget figure for the Sutton Road Multi-

use Pathway project and the calculated amount of funding needed to complete the work.

Carried Unanimously

- 6.5 Community Emergency Preparedness Fund – Emergency Operations Centres and Training Program Grant Application
Motion 18-44

Sullivan/Kishi

THAT Council receive the Community Emergency Preparedness Fund – Emergency Operations Centres and Training Program grant application report.

Carried Unanimously

Motion 18-45

Kishi/Sproule

THAT Council support the submission of a Community Emergency Preparedness Fund – Emergency Operations Centres and Training Program grant application through the Union of BC Municipalities (UBCM) for the upgrades of the Village Emergency Operations Centre for an amount up to \$25,000;

AND THAT Council support the proposed activities included in the grant application and commit to provide overall grant management.

Carried Unanimously

- 6.6 2018 AVICC Resolutions
Motion 18-46

Kishi/Sullivan

THAT Council receive the AVICC Resolutions report.

Carried Unanimously

Motion 18-47

Sullivan/Kishi

THAT Council submit a resolution on Community Social Planning to the Association of Vancouver Island Coastal Communities,
AND THAT Council direct staff to bring forward a resolution requesting continuation of income and subsidy benefits for individuals living in temporary service housing to the next regular Council meeting.

Carried Unanimously

- 6.7 2018 Lantern Festival, Temporary Street Closure
Motion 18-48

Kishi/Ketler

THAT Council receive the 2018 Lantern Festival, Temporary Road Closure report.

Carried Unanimously

Motion 18-49

Sproule/Ketler

THAT Council approve the closure of Dunsmuir Avenue between Third Street and Sixth Street on February 17, 2018 from 6:15 pm to 7 pm for the Lantern Festival parade.

Carried Unanimously

- 6.8 Financial Performance Report – Fourth Quarter 2017
Motion 18-50

Kishi/Ketler

THAT Council receive the Financial Performance Report – Fourth Quarter 2017 report for information.

Carried Unanimously

- 6.9 Electronic Funds and Cheque Registers, November and December 2017
Motion 18-51

Sullivan/Ketler

THAT Council receive the Electronic Funds and Cheque Registers for November and December 2017.

Carried Unanimously

- 6.10 Outstanding Action Items
Motion 18-52

Kishi/Sullivan

THAT Council receive the Outstanding Action Items report.

Carried Unanimously

7. Bylaws

- 7.1 Revenue Anticipation Borrowing Bylaw No. 1072, 2018
Motion 18-53

Kishi/Sproule

THAT Council receive the Revenue Anticipation Borrowing Bylaw No. 1072, 2018 report for information.

Carried Unanimously

Motion 18-54

Sullivan/Sproule

THAT Council give first, second and third reading to the Revenue Anticipation Borrowing Bylaw No. 1072, 2018.

Carried Unanimously

7.2 2017-2021 Financial Plan Amendment Bylaw No. 1076, 2018

Motion 18-55

Sullivan/Sproule

THAT Council receive the Financial Plan Amendment Bylaw report for information.

Carried Unanimously

Motion 18-56

Sproule/Ketler

THAT Council give first, second and third reading to the "2017-2021 Financial Plan Amendment Bylaw No. 1076, 2018".

Carried Unanimously

8. Consent Calendar

8.1 Mayor Lisa Helps, City of Victoria Re: Modernizing the BC Motor Vehicle Act

8.2 Canadian Wildlife Service – Pacific Region, Environment and Climate Change Canada Re: Changes to the Species at Risk Act

8.3 John Van Laerhoven, Mayor, District of Kent Re: Cannabis Sales Revenue Sharing

Motion 18-57

Sullivan/Kishi

THAT Council receive the consent calendar.

Carried Unanimously

9. New Business

None

10. Notices, Motions and Announcements

Matters considered here may include notices or motions to hold a meeting of the Committee of the Whole, a Village Hall meeting, a public hearing, and notices of motion introduced by a council member.

- Wastewater Advisory Committee meeting, Thursday January 25 at 1 pm
- Committee of the Whole Budget meeting, Thursday February 1 at 9 am
- Advisory Planning Commission meeting, Tuesday February 6 at 11 am

- Economic Development Strategy Steering Committee meeting, Tuesday February 6 at 6 pm
- Village Hall Budget and Strategic Priorities Public Consultation, Monday February 19 at 7 pm

11. Question Period

Council considered the following questions from the public:

- Request for breakdown of Potlatch 67-67 \$100,000 budget
- Past opportunities for public engagement versus current processes
- Timing of Advisory Planning Commission meetings and public engagement opportunities during development processes
- Possibility of providing more information to the public and more opportunities for input during processes such as land development and local service areas
- Upcoming opportunities for public input on the new covenants for Trilogy development
- The purpose of the Emergency Preparedness Fund

12. Closed Portion

Motion 18-58

Kishi/Sproule

THAT pursuant to section 90(1) a of the *Community Charter* Council close the meeting to the public to consider personal information about an identifiable individual who holds or is being considered for a position as an officer, employee or agent of the municipality or another position appointed by the municipality; law enforcement, if the council considers that disclosure could reasonably be expected to harm the conduct of an investigation under or enforcement of an enactment; and negotiations and related discussions respecting the proposed provision of a municipal service that are at their preliminary stages and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public.

Carried Unanimously

13. Adjournment

Motion 18-59

Kishi/Sullivan

THAT Council adjourn the meeting at 8:35 p.m.

Carried Unanimously

Certified Correct:

Mayor

Corporate Officer

C.O.T.W. MINUTES

4/2018/COTW



The Corporation of the Village of Cumberland

Committee of the Whole Meeting

February 1, 2018 at 9:00 a.m.

Village Council Chambers

Council Present:

Mayor Leslie Baird
Councillor Roger Kishi
Councillor Jesse Ketler
Councillor Gwyn Sproule
Councillor Sean Sullivan

Staff Present:

Sundance Topham, Chief Administrative Officer
Rachel Parker, Deputy Corporate Officer
Michelle Mason, Financial Officer
Rob Crisfield, Manager of Operations
Leah Knutson, Manager of Recreation
Mike Williamson, Manager of Protective Services

Mayor Baird called the meeting to order at 9:05 a.m.

1. Approval of Agenda

1.1 Agenda for the Committee of the Whole meeting, February 1, 2018.

Ketler/Sproule

THAT the Committee approve the agenda for the Committee of the Whole meeting, February 1, 2018 with the addition of a delegation of Michelle Willard, Cumberland Museum and Archives, additional information for items 25(a) and 2.5(b) and new item "Debt Summary".

Carried Unanimously

1.0 Delegation

1.0.1 Michelle Willard, Cumberland Museum and Archives, Museum Expansion and upgrades, Follow up letter to November 27, 2017 Presentation and Request to Village of Cumberland Council and Staff

Sproule/Kishi

THAT the Committee receive the delegation of Michelle Willard, Cumberland Museum and Archives, Museum Expansion and

upgrades, Follow up letter to November 27, 2017 Presentation and Request to Village of Cumberland Council and Staff.

Carried Unanimously

2. Proposed 2018-2022 Financial Plan

Kishi/Ketler

THAT the Committee receive the Proposed 2018-2022 Financial Plan report.

Carried Unanimously

Kishi/Sullivan

THAT the Committee recommend that Council reduce the growth contribution to the Emergency and Public Safety Reserve Fund in 2018 from \$80,000 to \$30,000, and re-allocate \$50,000 to general surplus to be set aside for 2018 projects.

Carried Unanimously

Sullivan/Ketler

THAT the Committee recommend that Council increase *the Managed Forest* assessment class ratio to 5:1 for 2018.

Carried Unanimously

Ketler/Sullivan

THAT the Committee recommend that Council increase the *Light Industrial* assessment class ratio to 3:1 for 2018.

Carried Unanimously

Kishi/Ketler

THAT the Committee recommend that Council reduce the Utility Worker 1 staff position to 6 months in 2018 with the savings allocated to the rate stabilization fund.

Carried Unanimously

Ketler/Kishi

THAT the Committee recommend that Council defer the 2018 budget of \$1,000 for the Affordable Housing brochure for developers to 2019.

Carried Unanimously

Sullivan/Sproule

THAT the Committee recommend that Council cut the 2018 budget of \$1,500 for the Accessibility Select Committee education/conferences in 2018 only.

Carried Unanimously

Sullivan/Sproule

THAT the Committee recommend that Council cut the Accessibility Select Committee promotions budget of \$300.

Carried Unanimously

Sullivan/Sproule

THAT the Committee recommend that Council cut the 2018 budget of \$1300 for Victoria Day parade flags

Carried Unanimously

Ketler/Sullivan

THAT the Committee recommend that Council reduce the 2018 Homelessness and Affordable Housing budget of \$1,500 for education and conferences from \$1,500 to \$500.

Carried Unanimously

Sproule/Kishi

THAT the Committee recommend that Council reduce the heritage statements of significance budget from \$7,500 per year to \$500 per year.

Carried Unanimously

Kishi/Sproule

THAT the Committee recommend that Council remove the 2018 Cumberland Lake Park parking project budget of \$5,000.

Carried Unanimously

Sproule/Sullivan

THAT the Committee recommend that Council approve the short-term borrowing from the Municipal Finance Authority through the Equipment Financing Program in the amount of \$200,000 for the purchase of a Vactor/flusher vehicle for a five year term that must be repaid in five years.

Carried Unanimously

Sproule/Sullivan

THAT the Committee recommend that Council approve the short-term borrowing from the Municipal Finance Authority through the Equipment Financing Program in the amount of \$40,000 for the purchase of a service truck for a five year term that must be repaid in five years.

Carried Unanimously

Sproule/Kishi

THAT the Committee recommend that Council approve the short-term borrowing from the Municipal Finance Authority through the Equipment Financing Program in the amount of \$219,790 for the purchase of a fire engine for a five year term that must be repaid in five years.

Carried Unanimously

Sproule/Sullivan

THAT the Committee recommend that Council defer making decision on the funding request from the Cumberland Museum and Archives and work with the Society on the museum expansion and upgrades feasibility study and on defining future funding.

Carried Unanimously

Ketler/Sproule

THAT the Committee recommend that Council defer consideration of funding for a Leisure Access Program to the 2020 budget process when a part-time Recreation Worker is added to staffing.

In Favour: Mayor Baird
Councillor Ketler
Councillor Kishi
Councillor Sproule

Opposed: Councillor Sullivan

Carried

Sullivan/Kishi

THAT the Committee recommend that Council direct Recreation staff to explore grant opportunities and partnerships for free or subsidized program for adults and seniors.

Carried Unanimously

Kishi/Sullivan

THAT the Committee recommend that Council investigate allocation of \$47,000 from the Parkland Acquisition Reserve Fund towards the purchase of additional parcels of land for the Cumberland Community Forest in 2018.

Carried Unanimously

Kishi/Sullivan

THAT the Committee recommend that Council donate \$1,000 from Host Community Amenity funds to the Kumugwe Society for the Potlach 67-67 art showcase.

Carried Unanimously

Ketler/Sproule

THAT the Committee recommend that Council approve \$25,000 in funding toward the CVRD engineering design study for a bridge across the Inland Island Highway and that the Village not commit to any further funding for the project at this time.

Carried Unanimously

Kishi/Sullivan

THAT the Committee direct staff to prepare the public meeting package for the February 19, 2018 Village Hall meeting and to prepare the 2018-2022 financial plan bylaw.

Carried Unanimously

3. Question Period

None

4. Adjourn

Sproule/Sullivan

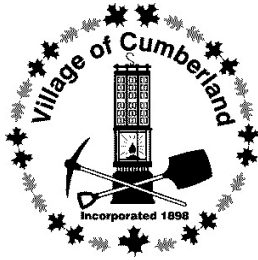
THAT the Committee adjourn at 4:30 p.m.

Carried Unanimously

Certified Correct:

Mayor

Corporate Officer



Corporation of the Village of Cumberland

2673 Dunsmuir Avenue
P.O. Box 340
Cumberland, BC V0R 1S0
Telephone: 250-336-2291
Fax: 250-336-2321
cumberland.ca

File No. 0540-20

Wastewater Advisory Committee Minutes, Meeting #14 Thursday, November 30, 2017, 1 pm to 4 pm Council Chambers

Invitees

Name	Representing	Present?
Matt Ishoy	Chair, Public member at Large	Y
Ken Barth	Public member at large	N
Dennis Cassin	Public member at large	Y
Vig Schulman	Public member at large	N
Mike Tymchuk	Public member at large, Alternate Chair	Y
Anya Macleod	Public member at large	Y
Sean Sullivan,	Council Representative	Y
Jesse Ketler	Alternate Council Representative	N
Nicole Rempel	K'omoks First Nation	N
Sundance Topham	Chief Administrative Officer	Y
Rob Crisfield	Manager of Operations	Y
Paul Nash	LWMP Project Coordinator	Y
Larry Sawchyn	TetraTech, Technical Consultant	Y
Troy Vassos	Troy David Vassos Inc.	Y
Dave Cherry	Vancouver Island Health Authority	N

Item	Description	Owner
14.1	- Call to Order, Meeting was called to order at 1:04 - Approval of Agenda Moved Mike, second Dennis, Carried	Chair

14.2	Approval of Minutes, Business Arising • Review of Minutes Motion to adopt, moved Sean, Seconded Dennis • Review of Action list and Parking Lot These items were passed over to move into the next agenda item • Business Arising None	Chair
14.3	Evaluation and Selection of Discharge Options Paul explained the evolution of the various discharge options, and why Maple Lake Creek remain the discharge option • There is no practical alternative in winter, when dealing with such large flow volumes • In summer, when there is no other flow in Maple Lake Creek, the creek needs the effluent flow • Discharge can be direct to MLC or Indirect via North wetlands Thus, the Technical Consultant makes the following recommendations on Discharge Options; <i>In considering the importance of maintaining summertime flows in Maple Lake Creek, it is recommended that:</i> 1. <i>With the exception of future reuse applications, discharge shall continue to be to the Maple Lake Creek watershed.</i> 2. <i>A second (indirect) discharge location to the Maple Lake Creek watershed via the North Wetland be established.</i> 3. <i>Any future reuse applications take into consideration maintaining minimum dry weather flows in Maple Lake Creek</i> The Committee discussed and agrees with this recommendation Motion: That the Wastewater Advisory Committee accept the Technical Consultant recommendations on Discharge, and recommends adoption of these to Council. Moved Anya, seconded Dennis, CARRIED	Paul

14.4	Review of revised Technical Memo 7A-Rev2 - Treatment Options • Option1 - Upgraded Lagoon a. Phase 1 for Permit Compliance b. Phase 2A for MWR MEP and North Wetland c. Phase 2B for MWR GEP • Option 2 - Baseflow Mechanical for MWR GEP • Option 3 - Full Flow Mechanical for MWR GEP • The phased approach – how Option 1-Phase 1 enables all other lagoon and mechanical options In discussion, it was noted that; 1. with a phased approach followed by the mechanical options (2 & 3) some of the phase one work becomes redundant. 2. All the options provide secondary treatment, and full disinfection to the wet weather flows over 3600 cu.m/day 3. It is impractical to provide full tertiary treatment to all the flows over 3600 cu.m/day	Troy
14.5	Review of revised Technical Memo 7B-Rev2 - Treatment Options Cost Comparisons • Technical comparison of treatment systems • Cost comparisons for phased and single stage projects • Operating Cost Comparisons In discussion, it was noted that; 1. the capital costs are partly dependent on the phasing – there is an extra cost of \$0.8 to \$1.5M for splitting a project into two phases. 2. The operating costs increase with the increasing effluent quality of the various options. This is primarily due to the increasing mechanical complexity of the tertiary treatment options	Larry
1.6	Review of Committee Report – Grant Funding and Tax Implications – How funding and phasing impact the Tax Burden In discussion, it was noted that; • Only Phase 1 can be implemented without grant funding • There are varying opinions on which of the options are most likely to receive grant funding – this needs to be studied further • Phase 1 may be ineligible for some grant programs as while it meets Cumberland’s Permit requirements, it does not treat to current best practice • The tax burden range from \$325 to \$908 is not unreasonable, though the lowest is still preferred	Paul

14.7	Review of Committee Report – LWMP Open House#4 Matt took the Committee through the Open House report. The feedback from the public can be summarized as; 1. The preferred “endpoint” Option is Option1, Phase 2A – Upgraded Lagoon to MEP quality 2. There is a strong – but not unanimous – preference for a phased approach. 3. Some people prefer a complete implementation of phase 1 and 2A, but only if grant funding is received to do so.	Matt
14.8	Evaluation and Selection of Preferred Treatment Option Paul led the Committee through the Evaluation Matrix for the four endpoint Options. The tax burden calculation used was the phased approach, assuming no grant funding for either first or second phases. The full results are in the attached table and are summarized as; • Option 1, Ph2A Upgraded lagoon to MEP, Score 80% • Option 1, Ph2B Upgraded lagoon to EGP, Score 66% • Option 2 Base flow mechanical to GEP, Score 59% • Option 3, Full Flow mechanical to GEP, Score 46% <i>Recommendation to be made to Council on Preferred Long-Term Treatment Option</i> Motion: That, following the results of the evaluation system, the Committee recommends Option 1, Phase2A – Upgraded Lagoon to MEP quality, with discharge to the North Wetland – as the preferred long term Option. Moved Mike, seconded Dennis. CARRIED Note Anya had to leave the meeting before the vote was called but had indicated her vote was for Option 1, Ph2A <i>Recommendation to be made to Council on Preferred Phasing and Grant Pursual Strategy</i> With the long term option decided, the Committee discussed the two major pathways to both phasing and grant funding; 1. Choose the phased approach and apply for grants for Option 1 - Phase 1 only 2. Apply for grants for the complete project (Option 2, Ph2A) and implement just Option 1 - Phase 1 if grants are denied The Committee concluded that more information was needed before a decision could be made.	Paul

	Accordingly, a decision on the phasing and grant funding was deferred to the next meeting pending more information on grant opportunities and eligibility Action item: Paul to prepare a report on grant funding opportunities, and likelihood of success for the various Options, for the next meeting	
14.9	Completing Stage 2 LWMP • Council meeting Dec 11th – WAC to make a Recommendation In discussion on making recommendations, the Committee decided that; 1. It was better for a complete set of recommendations – preferred option and phasing and grant strategy - to go Council. 2. No recommendations would go to the Dec 11th Council meeting, with another WAC meeting to be held in January 2018 to finalize the recommendations • Completing remaining Stage 2 studies ○ Biosolids ○ Integrated Resource Recovery ○ Water Conservation ○ Servicing Comox Lake area ○ Infiltration Reduction These studies are still in progress, and will be discussed at future WAC meetings in 2018. They do not have any influence on the decisions about preferred options or phasing.	Paul
14.10	Review of Committee Report – Implementation Options 1. Direct implementation, or 2. Complete stage 3 LMWP in 2018, then implement <i>Recommendation to be made to Council on Preferred Implementation Pathway</i> The Committee deferred both discussion and decision of this item until after the decisions have been made on the phasing and grant strategy	Paul
14.11	Wrap up Next Meeting – to be held Thursday January 25th, 1-4pm Recommendations to go to council on 13 February Adjournment Motion to Adjourn – Moved Mike, seconded Dennis, Carried Meeting adjourned at 4:25pm	Chair

	Public Q&A There were no members of the public remaining at the time of adjournment	Chair
--	--	-------

Attachments to Minutes of Meeting #14

- Evaluation Results Table

Chair

Corporate Officer

Category	Goal	Category Value	Scoring			
			Option 1, Ph 2A Upgraded Lagoon to MEP Quality	Option 1, Ph2 B Upgraded Lagoon to GEP Quality	Option 2 Base Flow Mechanical to GEP Quality	Option 3 Full Flow Mechanical to GEP Quality
Affordability	Sustainable Tax Burden (incl capital and operating cost)	23	22.9	15.5	16.5	4.6
	Ability to Attract Grant Funding	17	13.7	12.0	10.3	6.9
	Subtotal Affordability	40	36.6	27.5	26.7	11.4
Economic Benefits	Productive use of reclaimed water	7	2.6	4.0	4.0	4.0
	Reduce Energy Use and GHG's	5	5.5	4.9	2.2	2.7
	Attract industry and tourism through innovation	5	3.2	1.1	1.1	1.1
	Artist based beautification	3	1.6	1.6	1.6	1.6
	Subtotal Economic Benefits	20	12.9	11.5	8.8	9.3
Environmental Benefits	Innovation/Environmental leadership	5	3.9	3.9	2.9	3.9
	Support health of waterways with robust treatment	4	3.3	2.9	2.9	3.3
	Use of existing ecosystems to control cost including low tech solution and or bio solutions plus beneficial use of produced biosolids	4	4.1	2.5	2.5	2.5
	Sustainability, Climate Change resilience/adaptation/robustness	4	2.9	2.9	2.5	2.9
	Clean air	2	1.1	1.1	1.1	1.1
	reduce manmade toxins	2	1.3	1.0	1.1	1.0
	Subtotal Environmental Benefits	20	16.5	14.1	12.9	14.5
Social Benefits	Inclusivity of Cumberland to create an identity and or positive legacy adding to the social license	8	8.3	5.0	3.3	3.3
	Inclusive costing/metered sewer	3	2.0	2.0	2.0	2.0

	Purple pipe ready	3	0.5	2.7	2.7	2.7
	Aesthetics	2	1.4	1.1	0.7	0.7
	Public Education	2	1.1	1.1	1.1	1.1
	Garden/Zen/all year green lawns	2	0.4	0.4	0.4	0.4
	Strengthen Comox Valley relationship	0	0.13	0.18	0.18	0.2
Social Benefits	Subtotal Social Benefits	20	13.9	12.4	10.4	10.4
	Total	100	79.8	65.6	58.8	45.7



Corporation of the Village of Cumberland

2673 Dunsmuir Avenue
P.O. Box 340
Cumberland, BC V0R 1S0
Telephone: 250-336-2291
Fax: 250-336-2321
cumberland.ca

Economic Development Steering Committee Minutes

December 12, 2017, 7:00 pm
Council Chambers

Members Present:

Jan Neuspiel, Chair
Kaelin Chambers, Alternate Chair
Darren Adam
Vickey Brown
Shayla Hall
Evan Loveless
Toby Reid
Nick Ward
Tina Willard-Stepan
Ashley Newman
Sean Sullivan, Councillor (for Councillors Ketler and Sproule)

Staff & Guests:

Sundance Topham, CAO
Paul Siggers, EcoPlan

Regrets: Nick Ward; Jesse Ketler, Councillor; Gwyn Sproule, Alternate Councillor.

Mr. Topham called the meeting to order at 7:00pm.

1. Approval of Agenda

1.1 Adam/Brown

THAT the Committee approve the agenda of December 12, 2017.

Carried Unanimously

2. Adoption of Minutes

3. New Business

3.1 About us (introductions)

Steering Committee members, staff, and the consultant introduced themselves and why they are participating in the Economic Development Strategy Steering Committee.

3.2 Project introduction and background

The consultant described the beginning of this project in the previous year's process for selecting an Economic Service Delivery Model for the Village. The group reviewed the Terms of Reference for the Steering Committee. Jan Neuspiel was elected as Chair and Kaelin Chambers as Alternate Chair.

3.3 Brief History of LED

The consultant provided a brief description of what Local Economic Development is and how it has changed over the last half century.

3.4 Our process

The consultant walked the Steering Committee through the strategic planning process proposed for project work. As part of the overview, Steering Committee members briefly explored and discussed elements of the strategic planning process including engagement, vision, objectives, and types of actions that might show up in an Economic Development Strategy. The group's discussion was aided by instant polling on the presentation. It was clarified that results from this polling should not be understood as final elements of the project, only an exercise for aiding discussion of the issues.

3.5 Process: Phase 1 – in detail

The group returned to Phase 1 of the process to discuss engagement activities in more detail.

3.6 Next Steps

The consultant reviewed work and deliverables to be conducted up until the next Steering Committee meeting, which is expected sometime in February of 2018.

4. Delegations

None

5. Unfinished Business

None

6. Correspondence

None

7. Reports

None

8. Upcoming meetings

Expected in early to mid-February 2018. Consultant to provide scheduling options for the Steering Committee.

9. Adjournment

The meeting was adjourned at 9:00pm.

Certified Correct:

Chair

Deputy Corporate Officer



**Corporation of the
Village of Cumberland**

**Advisory Planning
Commission
Meeting Minutes**

Minutes of the Advisory Planning Commission held on Tuesday January 16, 2018 in Council chambers located at 2675 Dunsmuir Avenue, Cumberland BC.

PRESENT: Vickey Brown (Chair) Eric Krejci
 Meaghan Cursons Jaye Mathieu
 Amanda Howe Jason Ross

ABSENT: Evan Loveless

STAFF Sundance Topham, Chief Administrative Officer
 Judith Walker, Senior Planner
 Joanne Rees, Planner

1. CALL TO ORDER AT 11:05AM

2. APPROVAL OF THE MINUTES

Cursons/Mathieu: THAT minutes from the meeting of November 7, 2017 be accepted as amended."

CARRIED

3. APPROVAL OF AGENDA

Cursons/Mathieu: "That the agenda be approved as presented."

CARRIED

4. REFERRALS FROM COUNCIL

**a) Development Permit 2017-07-DP and
 Development Variance Permit 2017-09-DV 3216 Sutton Road**

Cursons/Mathieu: "THAT the Advisory Planning Commission recommends that Council grant the Development Permit and Development Variance Permits for property described as Lot B, District Lot 24, Nelson District, Plan VIP79617 (3216 Sutton Road) substantially in compliance with the attached draft Permits."

CARRIED

**b) Development Permits
 DPA#1 ESA 2016-02,03,04,05-DP (Trilogy)**

Cursons/Ross: "THAT the Advisory Planning Commission recommends that Council grant Environmental Protection Development Permits (2016-02-DP, 2016-03 DP, 2016-04 DP and 2016-05 DP) **ONLY** for the purposes of initial subdivision, acknowledging that future development permits continue to be

Jessica Hextall

From: Eduardo Uranga
Sent: Thursday, February 01, 2018 3:22 PM
To: info
Subject: Delegations to Council

Hello:

I (Eduardo Uranga, the speaker) would like to request the opportunity to present information to Council about the issue and project listed below to Council at the February 13th, 2018 meeting:

- Alternatives to space heating with wood, Smoke from Wood Stoves prevention and implementation of alternate space heating devices, in reference to the proposed bylaw.
- Ethical, sustainable, socially responsible, scientific, technical, engineered and mathematical approach to Liquid Waste Treatment process of evaluation. The current process needs reevaluation.

These issues will each require more than the 15 minutes allocated, and will be addressed independently from each other.

Thanks in advance for your help.

Eduardo Uranga

- -



Virus-free. www.avast.com

Jan 17, 2018

Dear Mayor and Councillors

Re: Woodsmoke

I am writing to implore you with urgency to ban wood burning appliances in all new construction and in all existing buildings which don't currently have a wood burning appliance. This initiative needs to be taken before the Trilogy subdivision on Lot 9A and Coal Valley Estates Phases 7,8,9 and 10 and the 84 unit Stoneleigh Station are built out. It also needs to be in place to prevent woodstoves going into accessory dwelling units, as more and more of these are built in the established neighbourhoods of the village where high PM 2.5 levels already exist.

This winter villagers have suffered dismal air quality. Every time I drive into the village my car's interior fills with smoke. I smell its acrid odour and my eyes burn.

The 24 hour average PM2.5 has been above the objective of 25 mcg/cubic meter during the following periods:

Nov 7,8

Dec 7

Dec 10-13

Dec 20-28

Jan 4-7

In total that is 20 days.

Air quality advisories were issued at least 4 times so far this winter.

In addition to the 24 hour average exceedances, spikes of between 50-70 mcg/cubic meter have been recorded for 19 nights between Dec 1 and Jan 15. These are dangerously high levels of PM2.5, not just for vulnerable individuals but for everyone.

I was dismayed that the recently proposed bylaw was tabled in favor of education and wood stove exchange programs. If Cumberland is to improve its winter air quality a reduction in the total number of wood burning appliances must be achieved. With a fast growing population, even a few new woodstoves per neighbourhood will significantly add to the overall woodsmoke problem, but it is especially unfortunate for homeowners next door to a wood burning household, whose right to breathe clean air in their own home has been violated, leaving them with no recourse except to sell their home. A woodstove installed today will pollute for the next 20 years. Its stated emission ratings are based on ideal conditions that are rarely achieved in actual use, and over its 20 year lifespan its efficiency will degrade and cause ever rising PM 2.5 emissions. Reference

http://www.hearthandhome.com/magazine/2017-04-25/straight_talk.html.

If new homes require a backup source of heat in case of power outages, a natural gas fireplace is a cleaner alternative than a woodstove.

The City of Courtenay is currently well along in developing a bylaw to address the woodsmoke issue in their city. Given that winter time PM2.5 levels in Cumberland are at least as high or higher than levels in Courtenay, as measured in last winter's mobile monitoring survey, (Reference <http://breathecleanair.ca/wp-content/uploads/2017/10/Woodsmoke-Monitoring-2017-Comox-Valley-Report-summary-Matt-Wagstaff-UPDATED.pdf>) there is an urgent need for bylaw enactment here.

Education and woodstove exchange programs are not enough. Switching to new certified stoves is not a long term solution. It will not achieve the expected reduction in PM 2.5 emissions unless only dry wood is burned at hot temperatures. Even households with certified stoves release unacceptable levels of PM 2.5 when they damp down the fire or light the fire.

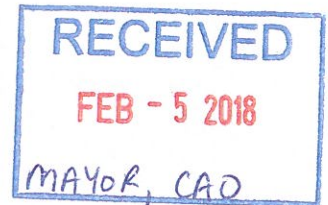
In the city of Libby, Montana \$2.5 million was spent between 2005 and 2008 to replace ALL uncertified stoves with new stoves and only 27% less PM 2.5 resulted. Reference <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3445774/>

Cumberland needs much more than a 27% reduction. The only way to achieve the reduction we need is to reduce the number of wood burning appliances overall. The health and productivity of every current and future resident depends on you taking action now.

Reference CBC's Quirks and Quarks podcast Saturday January 6, 2018 "Low level air pollution costs the economy billions of dollars in lost productivity."

Mary Lynn DesRoches

cc Scott Fraser, MLA
cc Earle Plain, provincial air quality meteorologist
cc Andrew Weaver, Party leader, Green Party of British Columbia



January 31, 2018

Ref: 232608

Dianne Hawkins
Chief Executive Officer
Comox Valley Chamber of Commerce
2040 Cliffe Ave
Courtenay BC V9N 2L3

Dear Ms. Hawkins:

Thank you for your letter and for the additional information provided regarding your request for a Comox Valley governance review. I apologize for the delay in responding.

I appreciate the significant investment made by the Comox Valley Chamber of Commerce in generating public interest in a governance review in the Comox Valley. As a next step, and before considering funding such a review, I would look for municipal and regional district leadership in describing the scope, approach, and local management of the proposed review. I would also look for consensus among the local governments on these details and a commitment to full participation in the planning, execution and reporting of a review process.

As further explanation for my request, the governance study process can be lengthy and involves significant work for local governments as well as the provincial government. Therefore, support for such a review by the involved local governments would need to remain current. Since 2018 is a general local election year, I would anticipate that if a governance review of the Comox Valley is a priority of the existing councils, the scope, approach and local management of the proposed review would also need to be endorsed by any new councils and regional district board. This too would need to be in place in order to request funding from the Province of British Columbia.

Thank you for the information provided. I trust the information I have provided is helpful and I look forward to hearing further how the conversation in the Comox Valley progresses.

Sincerely,

Selina Robinson
Minister

.../2

RECEIVED
Dianne Hawkins
Page 2

pc: Ronna-Rae Leonard, MLA
Courtenay-Comox

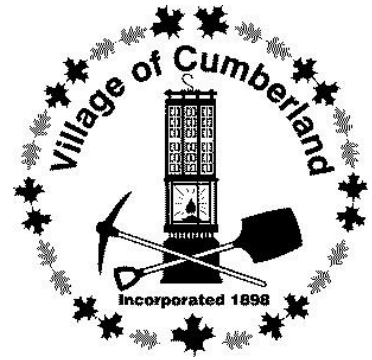
His Worship Mayor Paul Ives
Town of Comox

His Worship Mayor Larry Jangula
City of Courtenay

Her Worship Mayor Leslie Baird
Village of Cumberland

Bruce Jolliffe, Chair
Comox Valley Regional District

COUNCIL REPORT



REPORT DATE: February 8, 2018

MEETING DATE: February 13, 2018

TO: Mayor and Councillors

FROM: Sundance Topham, Chief Administrative Officer

SUBJECT: Trilogy Initial Subdivision – Committee of the Whole Meeting Cancellation

RECOMMENDATION

- i. THAT the Council receive the Trilogy Initial Subdivision – Committee of the Whole Meeting Cancellation report.
- ii. THAT Council cancel the Trilogy Initial Subdivision Committee of the Whole Meeting scheduled for Thursday, February 15, 2018 at 5:30 PM at the Village of Cumberland Council Chambers.

SUMMARY

Council set a Committee of the Whole meeting date for Thursday, February 15, 2018 to review the Trilogy Initial Subdivision documents, including the Development Permits and Replacement Covenants.

Unfortunately the Village did not receive the required documents in sufficient time to hold the meeting, and the meeting needs to be cancelled.

BACKGROUND

The Village is intends to hold a Committee of the Whole meeting to review the Trilogy Initial Subdivision documents, including the Development Permits and Replacement Covenants.

A date of Thursday, February 15, 2018 was scheduled for the meeting. Unfortunately the developer was unable to provide the required documents in time for the Agenda production and distribution, and the meeting needs to be cancelled.

No new date is proposed at this point-in-time, as the Village will be requiring completed documents (replacement covenants), prior to setting any future meeting dates. It is hoped that a proposed new date can be provided to Council at the March 12, 2018 Council meeting.

As the meeting was to include Council review of the Development Permits, new statutory notification for adjacent property owners will be required for any new meeting date.

FINANCIAL IMPLICATIONS

None

OPERATIONAL IMPLICATIONS

The review of development applications are part of the services provided by the Village.

STRATEGIC OBJECTIVE

None

ATTACHMENTS

None

CONCURRENCE

None

OPTIONS

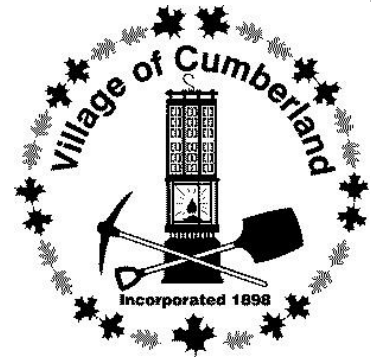
1. Cancel the Trilogy Committee of the Whole meeting scheduled for Thursday, February 15, 2018 at 5:30 PM in Council Chambers.
2. Any other action deemed appropriate by Council.

Respectfully submitted,



Sundance Topham
Chief Administrative Officer

COUNCIL REPORT



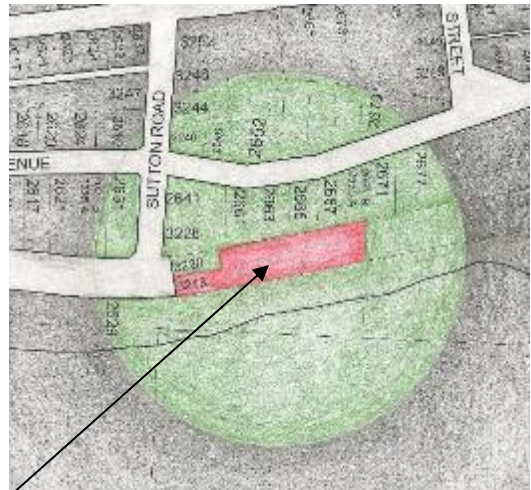
REPORT DATE: January 31, 2018
MEETING DATE: February 13, 2018

TO: Mayor and Council
FROM: Joanne Rees, Planner
SUBJECT: Development Permit and and
Development Variance Permit Applications – 3216 Sutton Road

FILES:	2017-07-DP and 2017-09-DV			
OWNER:	Ellen Strong Klassen			
PID:	026-428-679	FOLIO:	516 2500.030	
LEGAL DESCRIPTION:	Lot B, District Lot 24, Nelson District, Plan VIP79617			
ZONE:	Residential One (R-1)	OCP DESIGNATION	Residential	
PURPOSE OF DP	DPA#1 Environmental Protection Area – Aquatic Ecosystem Area (wetland)			
CONDITION UNDER APPLICATION		PERMITTED BY BYLAW		REQUESTED VARIANCE
For proposed Lot 1	Front	Minimum	3.0metres	1.5metres
	Left and Right Sides		1.5metres	1.2metres
	Rear		4.5metres	4.0metres
	Lot Coverage	Maximum	35%	40%
For proposed Lot 2	Front	Minimum	3.0metres	None
	Left and Right Side		1.5metres	1.2metres
	Rear		4.5metres	4.0metres
	Lot Coverage	Maximum	35%	40%

RECOMMENDATION

- i) THAT Council receive the report “Development Permit and Development Variance Permit Applications – 3216 Sutton Road” dated January 31, 2018.
- ii) THAT Council grant the Development Permit and Development Variance Permits for property described as Lot B, District Lot 24, Nelson District, Plan VIP79617 (3216 Sutton Road) substantially in compliance with the attached draft Permits.



Subject Property

SUMMARY

An application has been received for a DPA#1 Environmental Protection Development Permit to permit a two lot subdivision plus the remainder and a variance to the rear and side setbacks and maximum lot coverage to facilitate an adequate building envelope while protecting the Streamside Protected Enhancement Area (SPEA).

BACKGROUND

History

This property was a 0.46ha (1.13acre) section of the former railway Right of Way that historically linked Mine No. 4 to the shipping port at Union Bay.

In the early 1990's, the Village constructed a sanitary main through the property, which had been installed through the lot without a legal agreement registered on title. When the main was constructed, several of the "upland" owners were concerned about land slippage and an earthen berm was placed at the foot of these properties on top of the sanitary line.

Anecdotal information is that the property was offered to the Village and when acquisition was not pursued, the applicant and spouse purchased the property in May 2005. A small house was moved onto the lot and due to the site constraints, it was necessary to build close to the berm and in order to provide further stabilization, riprap was placed over the berm. In 2006, the Village received a geotechnical report from EBA Engineering Consultants that confirmed that there was no sign of instability or risk of landslide or slide.

Later that year, an application was made for a two lot subdivision which resulted in the creation of Lot A of Plan VIP79617. At this time, the owners agreed to the dedication of the Statutory Right of Way (SRW) for the sanitary main. In addition, this SRW was extended south to accommodate a drainage ditch which has an outlet into the wetland. These SRW's were registered on title as FB190903 in July 2008.

There was discussion of the dedication of an SRW to permit a public trail through the property. Due to a breakdown in the lengthy negotiations, this proposal was abandoned in 2007 and a trail was developed through the wetland to the south connecting to Comox Lake Road.

In September 2016, the new Zoning Bylaw was adopted and it zoned this property Residential One (R-1) when the surrounding neighbourhood was included in the Residential One A (R-1A) zone. If this was zoned R-1A, the maximum permitted Lot Coverage would be 40%.

DEVELOPMENT PERMIT AREA

The subject property is designated as Development Permit Area (DPA) No. 1 Environmental Protection for aquatic ecosystem areas (watercourses, wetlands, and riparian areas) as identified on Map E of the Village of Cumberland Official Community Plan Bylaw No. 990. 2014. The reason for the designation is because the area has significant natural areas that support important plants and animal habitat and that sustain human health and social well-being. This DPA is intended for the protection, conservation, and restoration of sensitive ecosystems that are fragile remnants of specialized ecosystems with high biodiversity.

The Owner wishes to subdivide the lands into two new lots and the remainder, using the density averaging provisions in the *Strata Property Act* (see drawing on a later page). A Development Permit is required for subdivision in this DPA. The Applicant has commissioned a Registered Professional Biologist (RPBio), to provide a Riparian Areas Regulation (RAR) report. This report

has been submitted to the Ministry as is required when development (in this case, subdivision) occurs within 30.0metres of an identified watercourse (includes wetlands) which connects to fish habitat. The RPBio conditionally recommends the subdivision and the associated works.

Midway through this application process (after it was referred to the Advisory Planning Commission), Council began requiring all of the information “up front”. The applicant was required to provide a more detailed bioinventory and a stormwater and erosion control report and this delayed the consideration by the APC.

The constraints on developing this lot, such as the Statutory Right-of-ways, and the setbacks for the Streamside Protection and Enhancement Area (SPEA) and floodproofing, results in small building envelopes. A Variance to the rear setback is requested to increase the limited space available for building.

The following chart presents the DP#1 requirements and how the application meets those regulations as described by the Registered Professional Biologist (RPBio).

DP Language		Application content from RPBio	DP Condition
10.1.5	DPA#1 EP Guidelines—General Requirements		
The primary function of the Environmental Protection Development Permit Area designation is to ensure that natural resources are protected, connectivity restored and maintained, and development impacts mitigated, including by allowing decision makers to have the ability to secure the necessary information and be able to place conditions on development.			
1.	Before any land clearing takes place, and before development design begins, an application for a development permit requires a biological site inventory (bio-inventory) according to the procedures described in <u>Develop with Care 2012—Environmental Guidelines for Urban and Rural Land Development in British Columbia</u> , Appendix B and amendments thereto, prepared by the Ministry of Forest Lands and Natural Resource Operations.	The attached Bio-inventory report has been prepared according to the BC Ministry of Environment's <i>Develop with Care 2014</i> . See Section 1 (Pg. 2 for DWC reference)	None
2.	The bio-inventory should be prepared by a qualified professional biologist together with other professionals of different and relevant expertise, as the project warrants.	RPBio is primary Qualified Environmental Professional (QEP)	None
	If wetlands and riparian areas exist within the development area, hydrologists and hydro-geologists should be consulted to ensure the proper hydrological function is maintained within these ecosystems.	A stormwater and hydrology report prepared by Wedler Engineering dated November 6, 2017 for the existing wetland and riparian area has been received and is attached to the draft Development Permit which addresses the hydrological function.	2(a)(v)
	A professional geoscientist should be consulted if there is erosion potential or slope instability.	No erosion potential was observed according to RAR assessment methods (see Slope Stability page 10).	2(a)(ii)

DP Language		Application content from RPBio	DP Condition
10.1.5	DPA#1 EP Guidelines—General Requirements		
	The consultant or team of consultants should have an understanding of wildlife biology—especially for species at risk, geomorphology, environmental assessment, and development planning in British Columbia, specific expertise in the wildlife species, wildlife habitat, and ecosystems of the West Coast region is highly preferred.	The consultant has this expertise	None
3.	The bio-inventory shall:		
	a) Be in accordance with <u>Develop with Care 2012: Environmental Guidelines for Urban and Rural Land Development in British Columbia</u> (DWC) or most current edition, and with reference to Appendix B: Bio-inventory Terms of Reference.	The bio-inventory was prepared in accordance with DWC (2014). Appendix B of DWC is referenced in Section 3 (pg. 6) of the Bio-inventory.	2(a)(iv)
	b) Locate the parcel relative to watershed area(s) and describe the hydrological features of the parcel—including water shedding, collecting and conveyance areas.	Description of watershed and wetland features are provided in Section 1.3 of Bio-inventory (pg. 2-3) and property description in Apr. 24, 2016 RAR report.	2(a)(iv)
	c) Examine the natural environmental features within the parcel—including rare and threatened plant communities, endangered species listed under the Provincial Wildlife Act and the Federal Species At Risk Act (SARA) and any identified critical habitats for those species, and other important habitat features.	No listed species identified during preliminary or detailed bio-inventory site visits. See Section 4.3 of Bio-inventory (pg. 12).	2(a)(iv)
	d) Provide a description and map(s) showing the boundaries of Environmentally Sensitive Areas—including 30.0metres from the natural boundary of terrestrial areas, and 30.0metres from the natural boundary of watercourses, wetlands and lakes, and 30.0metres from the top of the bank of a watercourse, where a bank is within 15.0metres of the natural boundary of the watercourse). Determine the restricted development and buffer zones on the parcel through an explanatory, reference or legal survey plan prepared by a BC Land Surveyor that shows these boundaries (refer to Section 4, Table 4.1 <u>Develop With Care</u> for recommended target buffer distances for biodiversity conservation).	See RAR site plan and surveyor's site plan	2(a)(ii) & 2(a)(i)

DP Language		Application content from RPBio	DP Condition
10.1.5	DPA#1 EP Guidelines—General Requirements		
e)	Examine the impact of the proposed development on the soils, vegetation, watercourses, wildlife, and hydrology in all restricted development and buffer zones; and provide development pattern and servicing recommendations to minimize these impacts.	Biophysical and wildlife attributes discussed in Section 1 of the RAR and Section 4 of the Bio-inventory (pg. 8-12).	2(a)(ii)& 2(a)(iv)
f)	Examine pre-development water quality and quantity on the site and provide mitigation and enhancement strategies to maintain pre development water quality and quantity for the restricted development zones and buffer areas.	A stormwater and hydrology report has been received prepared by Wedler Engineering dated November 6, 2017 and is attached to the draft Development Permit.	2(a)(v)
g)	Examine the impact of the proposed development on the larger watershed area(s) including watercourses, habitat connectivity, water quality and quantity upstream and downstream, and possible cumulative hydrological impacts that may result; and provide development pattern and servicing recommendations to minimize them.	Development outside the RAR SPEA is not expected to result in any direct impacts to the wetland or larger watershed. A stormwater and hydrology report has been received prepared by Wedler Engineering dated November 6, 2017 and is attached to the draft Development Permit.	2(a)(ii) & 2(a)(v)
h)	Recommend appropriate timing of works associated with development in order to minimize impacts to wildlife during migration, breeding, birthing, and rearing seasons.	Breeding bird nesting window (March 1 - August 31) described in Bio-inventory Sections 2.3 (pg. 5) and Section 5 (pg. 12-13).	2(a)(iv)
4.	The detailed bio-inventory is used to create the site plan. The site plan and development design must include:		
a)	Detailed drawings or plans clearly describing the proposed structures and the materials and type of construction to be employed, including a cross section of the proposed structure and its layout on the ground;	Combined RAR site plan and surveyor's site plan have been provided. This application is in support of development while details of proposed structures will be provided in future residential designs not available at the time of writing.	None
b)	A detailed description of existing structures near the proposed structure or area of work;	Combined RAR site plan and surveyor's site plan meet these criterion	None
c)	A detailed drawing or plan clearly describing any area of the removal of rock, gravel, or soil;	Figure 3 in Bio-inventory shows areas inhabited by invasive plant species to be removed that in some cases will also include surrounding removal of soils.	2(a)(iv)
d)	The reason and purpose of the work;	Subdivision and development	None

DP Language		Application content from RPBio	DP Condition
10.1.5	DPA#1 EP Guidelines–General Requirements		
	e)	The name of the contractor, if any, who will do the work;	To be determined None
	f)	Time required for completion in calendar days;	Unknown None
	g)	Any further information required by the Village to ensure compliance with this bylaw, including construction design or structural details of any part of the proposed works;	None noted None
	h)	A description of how environmental protection DPA requirements will be met, and how any issues identified in the bio-inventory will be mitigated, and how recommended mitigation measures will be achieved;	Mitigation measures described in Section 4 and Environmental Monitoring in Section 5 of RAR. Summary of recommendations provide in Section 5 of Bio-inventory (pg. 12-13). 2(a)(ii) & 2(a)(iv)
	i)	Any replanting prescription for vegetation in disturbed areas that is prescribed by the bio-inventory report;	Invasive species removal and replanting detailed in CEL Memo Summary of recommendations provide in Section 5 of Bio-inventory (pg. 12-13). 2(a)(iii) & 2(a)(iv)
	j)	A copy of any applicable federal and provincial approvals.	None required None
5.	As a condition of the development permit and in accordance with the bio-inventory for the project, the Village may require monitoring of the development by a qualified professional such as a professional engineer or biologist.		Post construction site inspection is recommended in RAR report. Additional effectiveness monitoring may be required by the QEP hired to manage invasive species removal. 2(i)
6.	Should damage occur to an environmentally sensitive area during development, the Village shall require, at the developer's cost:		
	a)	A Professional assessment and report on the damage incurred along with recommended mitigations;	Yes. Risk of damage to ESAs is low as no work will occur below highwater mark of the wetland. None
	b)	Full mitigation and rehabilitation of the impacted ESA.	Yes. Rehabilitation of the wetland SPEA by removing invasive species and replacing with native vegetation is recommended and is considered a low risk activity. 2(d)

DP Language		Application content from RPBio	DP Condition
10.1.5	DPA#1 EP Guidelines—General Requirements		
7.	Development design must reflect the objectives and guidelines of the <u>Standards and Best Practices for Instream Works</u> , <u>Land Development Guidelines for the Protection of Aquatic Habitat</u> , <u>Stormwater Management: A Guidebook for British Columbia</u> , <u>Develop with Care Environmental Guidelines for Urban and Rural Land Development in British Columbia</u> (Section 3 - Guidelines for Ecosystems and Species Protection and Section 4), <u>Access Near Aquatic Areas: A Guide to Sensitive Planning, Design and Management</u> and other best management practices guides produced by the provincial government.	Lot layout outside RAR SPEA is shown on the site plan. A stormwater and hydrology report has been received prepared by Wedler Engineering dated November 6, 2017 and is attached to the draft Development Permit.	2(a)(i) & 2(a)(v)
8.	Plan, design, and implement land development and subdivision in a manner that:		
	a) Supports the maintenance and restoration of natural system functions including watercourse, and groundwater recharge; hydrology	There will be no encroachment towards wetland. If there is a prolonged period (more than 1 week) between invasive species removal/native vegetation replanting and permanent fence installation a temporary fence (e.g. snow fence) should be installed along the driveway edge to delineate the protected area during development (Section 5 of Bio-inventory - pg. 12-13). A stormwater and hydrology report has been received prepared by Wedler Engineering dated November 6, 2017 and is attached to the draft Development Permit.	2(a)(iv) & 2(a)(v)
	b) Preserves natural features including soil, watercourses, groundwater, and native shrubs, groundcover and tree cover;		
	c) Maintains connectivity and linkages with adjacent sensitive ecosystems and other habitat areas and minimizes fragmentation;		
	d) Protects endangered, threatened, or vulnerable species or plant communities by avoiding disturbance to sites where rare plants are growing and where rare natural plant communities occur;	No rare species identified on the subject property (Section 4.3 of Bio-inventory - pg. 12-13).	2(a)(iv)
	e) Maintains critical habitat structures such as old trees, snags, trees with cavities, and ephemeral wetlands.	These ESAs will be protected within the boundaries of the wetland and its SPEA (Section 4.1.2 of Bio-inventory - pg. 9).	2(a)(iv)
9.	Retain mature vegetation wherever possible and incorporate it into the design of the project.	Protection of trees described in Section 4.4 of RAR and amendment in CEL memo (June 25, 2017)	2(d)

DP Language		Application content from RPBio	DP Condition
10.1.5	DPA#1 EP Guidelines—General Requirements		
10.	Demonstrate that a diligent effort has been made in site design to:		
	a)	Preserve both the natural vegetation and trees; or	2(a)(ii), 2(a)(iv) & 2(d)
	b)	Restore historical forest densities and hydrological function.	
		Measures to preserve natural vegetation within the SPEA is described in Section 4 of the RAR, and enhance SPEA vegetation in Bio-inventory Section 5 (pg. 12-13).	
		Native species restoration is recommended within SPEA on south side of existing driveway (Bio-inventory Sections 4.2.1 pg. 10 & Section 5 pg. 12-13).	
11.	Prevent disturbance of nesting sites and breeding areas. Animals must have access to the habitat that supports their reproduction in order to ensure future generations.		2(a)(iv)
	Recommendations for working outside breeding bird nesting window or requiring a QEP pre-clearing bird nest assessment within nesting window described in Bio-inventory Section 2.3 (pg. 5) and Section 5 (pg. 12-13).		
12.	Schedule work during times when impacts to wildlife will be minimal, including:		
	a)	Outside of known wildlife migration seasons;	2(a)(iv)
	b)	Outside of breeding, birthing, and rearing seasons (refer to Section 4 of 2012 <u>Develop with Care</u> Manual for breeding season least risk windows).	
		Diurnal mammalian migration anticipated year-round. Migratory bird nesting window described in Bio-inventory Section 2.3 (pg. 5) and Section 5 (pg. 12).	
13.	Preserve existing and potential connections to adjacent Terrestrial, Aquatic and Connectivity Areas by maintaining native shrub, groundcover and tree cover between habitats.		2(a)(iii) & 2(d)
	Vegetation enhancements recommended in CEL memo (June 25, 2017)		
14.	Prevent foreign material from entering into any restricted development areas, including—without limitation—greases, oils, gasoline, sediments, and other contaminants during and after the construction phase of the proposed development.		2(g)
	Management of Fuels and Hazardous Materials described in Section 4.9 of RAR		
15.	Design lighting on developments to provide the minimum necessary for safety purposes and to avoid light intrusion throughout the parcel.		2(k)
	Yes		
16.	Any fencing should be designed according to the guidelines described in <u>A Landowners Guide to Wildlife Friendly Fences: How to Build Fence with Wildlife in Mind</u> , Montana Fish Wildlife and Parks.		2(f)
	Fencing recommendations provided in Bio-inventory Section 5 (pg. 13).		

DP Language		Application content from RPBio	DP Condition
10.1.5	DPA#1 EP Guidelines–General Requirements		
17.	Manage rainwater in accordance with the Water Balance Model or the most recent integrated watershed management or rainwater policy and design manual. This includes managing rainwater on site and maintaining pre-development drainage flows.	A stormwater and hydrology report has been received prepared by Wedler Engineering dated November 6, 2017 and is attached to the draft Development Permit.	2(h)
18.	Encroachment into the DPA by all development activities will not exceed that indicated in the site plan approved in the development permit. All development activities will avoid or minimize disturbance in the DPA beyond the building footprint. This may mean adjusting conventional practices with respect to locating machinery and stockpiles relative to excavations, use of hand labour as opposed to machinery, etc.	Ways to avoid encroachment into SPEA described in Section 4.5 of RAR and fencing recommendations in Bio-inventory Section 5 (pg. 12-13).	2(f)
19.	Prior to any development activity, the boundaries of restricted development and buffer zones identified in the bio-inventory will be clearly marked with a bright orange or other highly visible temporary fence with a minimum height of 1.2metres and supported by poles a maximum distance of 2.5metres from one another. This fence will remain in place throughout clearing, site preparation, construction, or any other form of disturbance.	Temporary fencing recommendations in Bio-inventory Section 5 (pg. 13).	2(f)
20.	Ensure that the roots of trees are protected during construction. The roots of mature trees typically extend from 1–3 times the height of the tree from the tree’s trunk and are found within 30.5a–38.1centimetres of the soil surface. Damage to these roots (especially in mature trees) can impede the tree’s ability to obtain water and nutrition and can cause it to fall or blow over. Communicate tree protection plans to everyone involved in the project.	Protection of trees described in Section 4.4 and in CEL memo (June 25, 2017)	2(d)
21.	Any trail or pathway development must:		None
	a)	Minimize the impacts of recreational use on restricted development zones and adjacent natural areas and systems;	
	b)	Adhere to the Village’s trail and pathway design and construction practices for ESADP Areas;	
	c)	Be designed to prevent motorized vehicle use to the maximum extent possible.	

DP Language		Application content from RPBio	DP Condition
10.1.5	DPA#1 EP Guidelines–General Requirements		
22.	When establishing watercourse and riparian buffer zones, consider the needs of all species and not just fish. For example, SPEAs established using the Riparian Areas Regulation methodology focus on the needs of salmon and trout and may not adequately protect other species such as amphibians, birds, and small mammals.	The prescribed SPEA setbacks will provide ample protection for all wildlife species described in Bio-inventory Section 4 (pg. 8-12).	2(a)(iv)

DP Language			Application content	DP Condition
10.1.6.1	DPA#1 EP Supplemental Guidelines– Aquatic Ecosystem Areas			
1.	The following requirements apply to all development permit applications in all aquatic ecosystem areas (watercourses, wetlands, and riparian areas).			
	a)	When a site contains or is adjacent to a watercourse where fish are present or fish habitat is provided, the applicant shall, at their expense, retain the services of a registered professional Biologist (RPBio), or other Qualified Environmental Professional (QEP) to prepare an assessment report pursuant to <i>Riparian Areas Regulation (RAR)</i> . RAR is only necessary if the proponent plans to develop within 30metres of the high water mark or top of ravine bank of a stream or other waterbody that connects to fish habitat.	RAR assessment complete. Submitted by CEL on Apr. 24, 2016.	None
	i)	The Village should receive notification from the provincial ministry responsible for the environment that the Department of Fisheries and Oceans and the provincial ministry have been notified of the development proposal and provided with an acceptable copy of an assessment report prepared by a RPBio, or other QEP.	The assessment was uploaded to online RAR Notification System (File # 4000). Notice received by Village on May 23, 2017.	None
	ii)	Where the assessment report proposes a Harmful Alteration, Disruption or Destruction (HADD) to fish habitat pursuant to Section 35(2) of the <i>Fisheries Act</i> (Canada), the development permit shall not be issued unless Fisheries and Oceans Canada subsequently approve the HADD.	No HADD proposed and probability of unintentional low if al measures to avoid impacts in RAR (Section 4 pg. 10-13) and Bio-inventory recommendations (Section 5 pg. 12-13) are adhered to.	None

DP Language				Application content	DP Condition
10.1.6.1		DPA#1 EP Supplemental Guidelines– Aquatic Ecosystem Areas			
		iii)	Where the assessment report describes an area designated as Streamside Protection and Enhancement Area (SPEA), the Development Permit shall not allow any development activities within the SPEA except in accordance with the assessment report.	The Bio-inventory prescribes maintaining the existing driveway, removing invasive plant species, and restoring native vegetation within the SPEA (Section 5 pg. 12-13)	2(a) & (d)
		iv)	The conditions in the RAR shall form part of the Development Permit.	Yes	2(a)(ii)
	b)	When a site contains, or is adjacent to, a known watercourse where the presence or absence of fish is unknown:			
		i)	All development within the DPA adjacent to those watercourses, not subject to the RAR, shall require an evaluation by a registered professional biologist or other QEP who shall prepare a report assessing the environmental components of the proposal. The measures and recommendations of the registered professional biologist report may form the terms of the development permit.	The RAR assessment was prepared by an RPBio	None
		ii)	The report should generally include the following information:		
		1)	A detailed site plan identifying the environmentally sensitive area within the site, location of existing and proposed buildings and structures, new lot lines, and an assessment of existing natural vegetation;	Included in RAR page 8	2(a)(ii)
		2)	The criteria used to define the boundaries of the environmentally sensitive area;	Included in RAR pg 6&7	2(a)(ii)
		3)	An inventory of wildlife species and related habitat;	Vegetation and fisheries resources were described in RAR Section 1 (pg. 3) and fisheries/general wildlife in Bio-inventory Section 4 (pg. 8-12)	2(a)(ii) & 2(a)(iv)
		4)	An impact statement describing effects of proposed development or subdivision on natural conditions or any neighbouring sensitive ecosystem as identified by the best available and most up to	Impacts from subdivision and development are planned to occur outside of the SPEA and no impacts to ESA's are anticipated. Furthermore, measures to protect and enhance the SPEA are recommended in the RAR	2(a)(ii)

DP Language				Application content	DP Condition
10.1.6.1	DPA#1 EP Supplemental Guidelines– Aquatic Ecosystem Areas				
			date information including the province's Sensitive Ecosystem Inventory and the Comox Valley Regional Districts' Sensitive Habitat Atlas;	(Section 4 pg. 10-13) and Bio-inventory (Section 5 pg. 12-13).	
		5)	Guidelines for mitigating habitat degradation including limits of proposed restricted development zone.	The south side of the existing driveway should delineate the limit of encroachment with the exception of invasive species removal and planting native species. See Bio-inventory (Section 5 pg. 12-13)	2(d) & 2(f)
	c)	For all sites adjacent to any Aquatic Ecosystem Area:			
		i)	Existing native vegetation and soil should be retained and restored within the riparian assessment area;	Yes. See Bio-inventory (Section 5 pg. 12-13)	2(d)
		ii)	Minimum parcel sizes for subdivision parcels, including bare land strata lots, should be met exclusive of the SPEA.	Confirmed by Surveyor	2(a)(i)
2.	Site Analysis				
	a)	All projects proposed should, as a prelude to site planning and design, demonstrate an understanding of the following site conditions:			
		i)	Location in one of the eight principal watersheds (First Supply Creek, Morrison Creek, Piercy Creek, Millard Creek, Roy Creek, Maple Lake Creek, Perseverance Creek and Comox Lake) including identification of upstream (or upslope) and downstream (or downslope) land uses and the evaluation of the potential conflicts therein.	Watershed location and up and downstream channel conditions are described in Bio-inventory Section 1.3 (pg. 2-3)	2(a)(iv)
3.	Site Planning				
	a)	All development proposals should demonstrate that site selection and planning have given consideration to:			
		i)	<u>Develop with Care 2012–Environmental Guidelines for Urban and Rural Land Developments in British Columbia</u> and amendments thereto, prepared by the Ministry of Forest Lands and Natural Resource Operations;	The attached Bio-inventory report has been prepared according to the BC Ministry of Environment's <i>Develop with Care 2014</i> . See Section 1 (Pg. 2 for DWC reference)	None

DP Language			Application content	DP Condition	
10.1.6.1		DPA#1 EP Supplemental Guidelines– Aquatic Ecosystem Areas			
		ii)	Opportunities and constraints for on-site stormwater management including factors such as natural storage and soil infiltration.	A stormwater and hydrology report has been received prepared by Wedler Engineering dated November 6, 2017 and is attached to the draft Development Permit.	2(a)(v)
	b)	All development proposals shall provide a stormwater management plan that:			
		i)	Follows source control (on-site) principles and practices, and minimizes the use of conventional pipe and pond techniques, and avoids direct discharges to streams and other water-bodies;	A stormwater and hydrology report has been received prepared by Wedler Engineering dated November 6, 2017 and is attached to the draft Development Permit.	2(h)
		ii)	Takes advantage of on-site opportunities to recycle water to soil, wetlands, and forests;		
		iii)	Uses site adaptive principles in facility placement and design, site grading, tree removal, impervious cover, and the scale and types of measures used to capture, direct, and dispose of stormwater.		
4.	The Village encourages proposals that offer to register a covenant on the title of the lands. The covenant will be registered before any development, including subdivision, and is intended to protect the aquatic ecosystem and the nearby vegetation and to ensure that it remains in a natural and vegetated state and/or free of development. The covenant will be registered in favour of the Village, other public agencies including the Province, or non-governmental organizations, such as a private land trust committed to the management of watercourses or streamside areas.			The Village may choose to place a covenant on the portion of the 15m wetland SPEA south of the existing driveway as the parcel where the wetland resides is identified as a <i>Proposed Municipal Park Area</i> (OCP Map J). The wetland SPEA is protected under the provincial RAR and additional municipal protection can be established based on discretion of landowner and the Village.	Not recommended
5.	The applicant must provide an erosion and sediment control plan that reflects measures prescribed in the <u>Land Development Guidelines for the Protection of Aquatic Habitat</u> (1992: note Section 3), <u>Stream Stewardship: a Guide for Planners and Developers</u> (1994: note pages 30–34), or other standards or guidelines adopted or approved by the Village. This plan will form part of the development permit.			Measures to mitigate erosion and sedimentation are included in RAR Section 4.6 (Pg.11-12) A stormwater and hydrology report has been received prepared by Wedler Engineering dated November 6, 2017 and is attached to the draft Development Permit.	2(a)(ii) & 2(a)(v) & 2(i)

DP Language		Application content	DP Condition
10.1.6.1	DPA#1 EP Supplemental Guidelines– Aquatic Ecosystem Areas		
6.	As a general rule, clearing of land, grubbing, grading, and other activities that expose expanses of soil will be completed during the dry months of the year, usually June through September.	Invasive species removal will likely include soil excavation that is recommended for Apr.-May (Bio-inventory Section 5 pg. 12-13). Other land clearing such as residential foundation excavations should be timed during dry weather periods that dominate the summer (June-Sept.)	None
7.	Sediment containment and erosion control measures will be installed prior to any development activity.	Follow measures described in RAR Section 4.6 (Pg.11-12)	2(i)
8.	Development will be avoided on slopes greater than 30 percent (approximately 7°) due to the high risk of erosion and bank slippage.	No steep slopes were observed on property.	None
9.	Existing trees and vegetation within the Aquatic Ecosystem Areas will not be disturbed except where allowed under the Development Permit.	Vegetation management recommendations are summarized in Section 5 of the Bio-inventory (pg. 12-13)	2(d)
10.	To ensure their long-term health, all existing trees that are to be retained will be clearly marked prior to development, and temporary fencing will be installed at the drip line to protect them during clearing, grading, and other development activities.	The south side of the existing driveway delineates the existing vegetated SPEA area that must be protected. Fencing recommendations are summarized in Section 5 of the Bio-inventory (pg. 12-13)	2(f)
11.	The following are allowed within Aquatic Ecosystem Areas buffer zones:		
	a) Pruning or removal of trees deemed hazardous by a registered professional arborist, while retaining wildlife trees and snags (dead, upright trees, or stumps) if safe	Yes	2(d)
	b) Pruning of undergrowth within 1.0metre of existing or proposed public trails to avoid injury to users, but no disturbance of vegetation within 3.0metres of the natural boundary of the watercourse;	Existing gazebo structure and trail in eastern end of the property predate the RAR (grandfathered), pose a low risk to the habitat function of the wetland and its SPEA, and are not recommended to be decommissioned.	None
	c) Supplementing existing vegetation with planted stock as needed to landscape bare or thin areas.	SPEA rehabilitation planting is recommended following invasive species removal along the southern edge of the existing driveway. See Bio-inventory Section 5 (pg. 12-13).	2(d)

DP Language		Application content	DP Condition
10.1.6.1	DPA#1 EP Supplemental Guidelines– Aquatic Ecosystem Areas		
12.	Replanting of disturbed areas or the supplementing of existing vegetation with planted stock in thin or bare areas of a buffer zone will be required in accordance with the following:		
	a)	Replanting will use trees, shrubs, and ground cover native to the area and selected to suit soil, light, and groundwater conditions of the site and to promote habitat or erosion control functions as necessary;	Rehabilitation planting including shrubs/trees in the wetland SPEA is described in Section 5 of the Bio-inventory (pg. 12-13). 2(d)
	b)	Individual trees will be replaced based on the recommendations of environmental reports;	No trees are recommended for removal or that exist within proposed development footprint. Retention of a single English oak and planting of trees to rehabilitate the wetland SPEA is described in Section 5 of the Bio-inventory (pg. 12-13). 2(d)
	c)	Species native to the area should be used in the restoration area. If needed, trees should be placed to enhance bank stability and provide cover to a watercourse;	Section 5 of the Bio-inventory (pg. 12-13). 2(d)
	d)	A shrub layer will be provided for a minimum of 33 percent of the restoration area; shrubs will be planted at an average density of 1.0metre apart and a minimum #2 pot size at time of planting;	The restoration area and replacement native plant number is to be confirmed following completion of invasive species removal. See Section 5 of the Bio-inventory. 2(d)
	e)	Groundcover may be substituted for shrubs; if used, groundcover will consist of brush layers or planted groundcover species at a maximum average spacing of 0.5metres with plants of minimum 10.0centimetre pot size at time of planting;	Native plant species/numbers are to be confirmed following completion of invasive species removal. See Section 5 of the Bio-inventory (pg. 12-13) for an estimate. 2(d)
	f)	For wooded areas, clearing should not exceed 10 percent of the Aquatic Ecosystem Area, should be confined to the outer portions of the Aquatic Ecosystem Area, and must not be on slopes greater than 50 percent (27°). The same replacement ratio, average tree density, and site features as in the previous Guideline apply;	The invasive species clearing and native vegetation restoration area is estimated at 110 metres ² . See Section 5 of the Bio-inventory (pg. 12-13) 2(a)(iv)
	g)	Areas not covered by trees, shrubs, or groundcover will be seeded with native herbaceous plants, grasses, or legumes;	Proposed landscaping plan should accompany lot development designs at Building Permit 2(l)

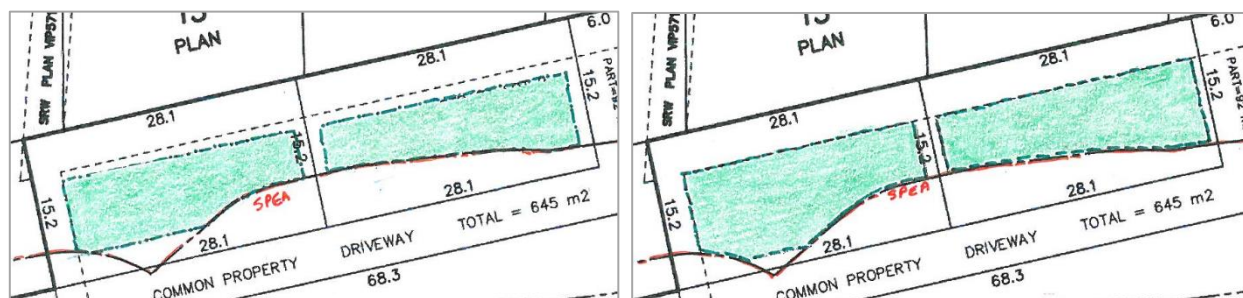
DP Language		Application content	DP Condition
10.1.6.1	DPA#1 EP Supplemental Guidelines– Aquatic Ecosystem Areas		
	h)	All vegetation will be protected from intrusion by motor vehicles with a curb or other suitable protective barrier if roads, driveways, or parking areas abut the buffer zone;	Driveway to be maintained in existing condition 2(d)
	i)	All planted stock will be maintained for a minimum of two years; within that time, any unsuccessful stock will be replaced at the owner's expense.	See Bio-inventory Section 5 (pg. 13) 2(a)(iv) & 2(d)
13.	To replace portions of an Aquatic Ecosystem Area buffer zone that are permanently removed, remaining portions may be enhanced by re-vegetating bare or thin areas, or by widening the buffer zone in other portions of the site not affected by the development.		Removing invasive species from the Statutory Right of Way (outside prescribed SPEA setback) along the northern property boundary is recommended. See Bio-inventory Section 5 pg. 12 2(a)(iv) & 2(d)
14.	Fencing to restrict access of livestock to Aquatic Ecosystem Areas will be installed where needed. Any fencing should be designed according to the guidelines described in <u>A Landowners Guide to Wildlife Friendly Fences: How to Build Fence with Wildlife in Mind</u> , Montana Fish Wildlife and Parks.		Livestock are not present on property. Fencing recommendations are made in Bio-inventory Section 5 pg. 13. None
15.	Land development activities must be planned, designed, and implemented in a manner that does not disturb or fragment wetland ecosystems including:		
	a)	Wetland vegetation and structure;	Proposed subdivision/development plan is outside wetland area.
	b)	Rare or uncommon animals, wetland plants, or plant communities;	No rare or at risk species were observed on the property. See Bio-inventory Section 4.3 pg. 12.
	c)	Wildlife habitats such as breeding and nesting sites;	Potential avian nesting sites (including wildlife snags) are within the boundaries of the wetland and its SPEA. With the exception of invasive species removal and native vegetation planting (see Bio-inventory Section 5 pg. 12-13) there is no proposed development within wildlife habitat areas 2(a)(iv)
	d)	Soils and soil conditions.	See <u>Proposed 3 Lot Strata Subdivision – 3216 Sutton Road, Cumberland BC Hydrology and Stormwater Management Report</u> dated November 6, 2017 2(a)(v)

DEVELOPMENT VARIANCE PERMIT

The proposed lots are small in order to develop the limited land outside of the SPEA (see the attached drawing as Schedule A to the draft Development Variance Permit. The property is bounded on two sides with a Statutory Right of Way.

	Without Variances	With Requested Variances
Setbacks Building Area	25.1m wide X 7.7m deep	25.7m wide X 10m deep
Building Envelope Area	193.3m ²	257.0m ²
Lot Coverage	150.2m ²	171.6m ²

Pictorial representation of the effect of a Variance to the Building Envelope (noted in green)



Building envelope without Variance

Building envelope with Variance

In supporting these Variances, staff are promoting works outside the SPEA and wetland area.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS

The applicant has placed the required sign on-site, they advertised and held a public meeting on May 15, 2017. The results of the meeting are attached. The purpose of the applicant holding a public meeting is to give them opportunity to advise the neighbours of their development plans and to be able to answer questions.

Pursuant to the requirements of the *Village of Cumberland Procedures and Fees Bylaw No. 1008, 2014*, notice of Council consideration of a Development Permit must be mailed or otherwise delivered to owners of adjacent properties a minimum of 10 days before the Council considers the application. The required notice was mailed on May 15, 2017 to the neighboring properties within 75.0metres of the subject property.

At the time of writing this report, staff received one personal visit from a neighbour, three emails which are attached to this report and a petition against the issuance of a Permit which is also attached.

REFERRALS

On January 16, 2018, the Advisory Planning Commission considered this application. They made the following recommendation:

THAT the Advisory Planning Commission recommends that Council grant the Development Permit and Development Variance Permits for property described as Lot B, District Lot 24, Nelson District, Plan VIP79617 (3216 Sutton Road) substantially in compliance with the attached draft Permits.

FINANCIAL IMPLICATIONS

None

OPERATIONAL IMPLICATIONS

The review and processing of Development Permit applications are part of the services provided by the Planning Department.

STRATEGIC OBJECTIVE

None

ATTACHMENTS

1. Summary of Public Meeting and submissions
2. Draft Development Permit which contains:
 - a) Schedule A Site Drawing;
 - b) Schedule B Riparian Areas Report dated March 29, 2016;
 - c) Schedule C Current Environmental Memo dated July 25, 2017;
 - d) Schedule D being the Bio-inventory Assessment prepared by Current Environmental dated October 17, 2017; and
 - e) Schedule E Proposed 3 Lot Strata Subdivision – 3216 Sutton Road, Cumberland BC Hydrology and Stormwater Management Report dated November 6, 2017;
3. Draft Development Variance Permit.

CONCURRENCE

Rob Crisfield, Manager of Operations

**OPTIONS**

- i) Grant the Permits as presented.
- ii) Deny the Permits as presented (need to give reasons).
- iii) Any other action deemed relevant by Council.

Respectfully submitted,



Joanne Rees
Planner

Sundance Topham
Chief Administrative Officer

Ellen Strong Klassen
3216 Sutton Rd

Application for a Development Permit

Page 8

Summary of Neighbourhood Meeting

1.	Neighbourhood meeting held in regards to:	Proposed subdivision at 3216 Sutton Rd	
2.	Meeting Date and Time:	May 15, 2017 @ 8 pm	
3.	Meeting Location:	Masonic Hall, Cumberland	
4.	Advertising:	Newspaper (attach tear sheet)	Date published: May 4, 2017
		Notices Mailed	Date mailed: May 4, 2017
		Notices Hand delivered	Date delivered: —
5.	Numbers of attendees	Attach sign in sheet	☒ Yes 16 attendees
6.	Summarize the comments received	• back access to property #13 will be gone • turning left on that corner is dangerous • drainage by 12" pipe coming from behind #14 needs to be dealt with properly (see attached) • new houses there will negatively affect views of #13 + 14 + VPT 9617 • new building could compromise retaining wall of #11 + 12 (the wall is eroding already) • aesthetics of new homes could negatively affect property values of neighbours • adding fill could alter property height, thus reducing views even further • neighbours want to be kept informed of progress • "strata" zoning is worrisome. (Does it mean —)	
7.	Attach copies of written comments received	☒ Yes none received	

Signature of Applicant or Agent certified that the information is accurate and complete.

Signature

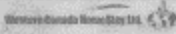
complaints were heard that the invitations were received late in the week - only 3 days before the meeting.

that multifamily dwellings/mobile homes will be allowed?)

BCClassifieds.com

ONLINE bcclassifieds@blackpress.com
IN PRINT 1.866.865.4460

...in your community, online and in print  Black Press

COMMUNITY ANNOUNCEMENTS	EMPLOYMENT/EDUCATION	EMPLOYMENT/EDUCATION	EMPLOYMENT/EDUCATION	PERSONAL SERVICES
COMING EVENTS	HELP WANTED	HOME STAY FAMILIES	TRADES, TECHNICAL	COUNSELLING
50th Grad Reunion Gladstone Secondary School Class of 1967 Date: June 24, 2017 in Burnaby B.C. For further information contact Dorcas: doreensutherland67@gmail.com or 604-437-1253	FLAGGER - TCP Required for Wacor Holdings. Must have a BC certified traffic control ticket. Campbell River / Courtenay areas. \$15.00/hr. Please apply by email: admin@wacor.ca	 HOMESTAY FAMILIES NEEDED for Japanese boys for July 26 th - August 12 th Stipend paid. Louise 250-334-1501	 Journeyman Technician Have you wanted to work in a coastal town where you can play just as hard as you work? If you've even thought about it then we've got the job for you. MacCarthy GM (Prince Rupert) is offering a competitive wage and extensive benefit package to anyone willing to relocate to our beautiful city. If this job sounds like every- thing you've been waiting for email your resume to: Kevin MacCarthy, General Manager at: kmccarthy@maccarthygm.com No phone calls please.	Registered Clinical Counsellor Irene Champagne now accepting appointments for Counselling Therapy. Grief and loss, Trauma recovery, Depression and Anxiety, Relationship distress, Couple's issues, Weight & Lifestyle issues. Go to: www.laquerencia.webs.com for more information or call the clinic (250) 468-7245
INFORMATION	Griffin Pub	MEDICAL/DENTAL		FINANCIAL SERVICES
INVITATION TO NEIGHBOURHOOD MEETING To renew a proposed Development Permit on property at 3216 Sutton Rd, Cumberland BC. The meeting will be held on Monday, May 15, 2017 at 8 p.m. at the Cumberland Masonic Hall located at 2667 Dunsmuir St, Cumberland, BC.	* SERVER Part-time required with squirrel experience. Apply in person with resume: The Griffin Pub, 1185 Kilmory Rd. Comox, BC	Registered Nurse Required for busy pediatric practice 2 days per week. Duties include allergy testing, allergy shots and immunizations. Please e-mail resume: aldermedis@shawbiz.ca or apply in person to: Alder Medical Centre 277 Evergreen Road, Campbell River Attention: Anne or Monica		 \$750 Loans & More NO CREDIT CHECKS Open 7 days/week 8am - 8pm 1-855-527-4368 Apply at: www.credit700.ca
	 COURIER SERVICES A Division of IAGE-CPRI Inc. Immediate opening for			

Public Submissions Received by staff

Sent: Thursday, June 15, 2017 7:18 PM

Subject: RE: Klassens property

What is your qualifications and degrees to be a senior planner, as you don't seem to understand that all documentation, newspaper articles, letter from the lawyer holds the village of Cumberland responsible for any erosion.

Berm is not even part of the equation.

1996 we put 33 dump truck loads of packing soil on the public road(VILLAGE THOUGHT THEY OWNED) to stabilize the embankment At the rear of our house, we got permission by staff. We added rows of hedges and railway ties at the bottom to help with stabilization of the embankment. So the settlement of the berm is from the removal of the 33 loads of packing soil, multiple large tress, rows of hedges, and railway ties all removed by the Klassens without permits, which in affect caused the erosion and instability to the embankment. I grew up on a farm, I'm not stupid, I also have a family member who is the Assistant to the Assistant Deputy Minister of Environment in Victoria. So I think I have the appropriate knowledge required to state the bank is eroding. 2006 was when the disturbance occurred and we requested a copy of the letter to see who this geotechnical study was actually performed by. No core samples were done in the embankment. My husband was an oil rig worker and has seen many core samples done in his life time. Core samples are required to show stability and types of soils of the core. Mr Klassen also removed soil after he was instructed by the village not to remove anymore, he was also told to stabilize the embankment by the

village. Mr Klassen deposited a few big rocks on the hill, but they are not sufficient to maintain the soil stability. Erosion has occurred since 2006 as the soil in our backyard is disappearing, the trees are sliding, repairs to our properties are required (two loads of top soil, and landscaping is required to rebuild our back yard) and proper stability to the embankment. The village is responsible to fix these issues, as per the lawyers letter. How about fixing issues that are outstanding from the derelict builder before allowing continuation of destruction to the adjoining properties. Also Mrs Klassen plans on moving her supposed shed behind our embankment, that again will disturb the soil, is this what you classify landscaping!

Maybe you should read the history of how the Klassens moved the houses in, built foundations, removed trees and embankments when the village office was closed for the weekends. No permits were issued prior to, and no stop work order were ever followed.

Can you understand why we are all upset!!

You should look up your records and get your facts straight, the village responsible for the issues not the _____.

From: Joanne Rees [<mailto:jrees@cumberland.ca>]

Sent: June-13-17 9:40 AM

Subject: RE: Klassens property

In 2006, the Village commissioned a geotechnical study of the berm at the bottom of the slope at the rear of your property. According to the Engineer: *no sign of instability of the berm was observed."*

Further, the engineer provided the following comments regarding the stability of the berm;

- *The berm slopes are not oversteepened, the slope heights are not significant, no slopes exist immediately above or below the berm, and no sign of instability was observed. Therefore, the berm is not considered to be unstable or at high risk of instability*
- *It is possible that some settlement of the berm has occurred as the fill was likely placed in an uncontrolled manner and the fill may contain or be founded on organics that would decay over time. Generally, the berm is expected to be constructed primarily of granular material based on the exposures observed;*
- *Any settlement issues on neighbouring properties are not expected to be connected to the berm*

Given this information, the Village can assure you that there will be no excavation permitted (other than landscaping) within the 4.0metre wide Statutory Right-of-way.

Sent: Tuesday, June 06, 2017 7:46 PM

Subject: RE: Klassens property

I know you have the letter from my lawyer, read the comox valley article.

Sent: Monday, June 05, 2017 9:22 PM
Subject: Klassens property
Importance: High

I would like to remind you of the outstanding issues with the embankment behind our houses on Derwent St that the village allowed the _____ to develop. There is a letter on file from our lawyer (which you have on file, as stated in the Comox Valley Record Aug 11, 2006) that states that the village is responsible for any issues that arise from the erosion of the embankment. The _____ back treeline is now sliding down the embankment, the _____ have added truck loads of dirt yearly to keep their back yard. But here we go again, the village seems to push everyone else aside to help the Klassen's, we pay taxes too. Fix the issues that have already occurred from the Back door permits for the Klassens. Stop allowing the destruction of other properties for one family (Klassens), fix the outstanding issue first. I also have a letter from Aug 12, 1996 stating that any excavation near or over the sewer line is prohibited, so why can Mrs Klassen be allowed to continue.



Corporation of the
Village of Cumberland

DEVELOPMENT PERMIT

TO: Ellen Strong Klassen

OF: PO Box 628, Cumberland, BC V0R 1S0

This Development Permit (2017-07-DP) is issued subject to compliance with all of the bylaws of the Village of Cumberland applicable thereto, except as supplemented by this Permit for the purposes of creating a two lot bare land strata subdivision.

1. This Development Permit applies to and only to those lands within the Village of Cumberland described below:

Legal Description: Lot B, District Lot 24, Nelson District, Plan VIP79617

Folio: 516 02500.030 **PID:** 026-428-679

Civic Address: 3216 Sutton Road

2. The land described herein shall be developed strictly in accordance with the following terms and conditions and provisions of this Permit:

- a) Development design and implementation shall be substantially in conformance with:

- i) Schedule A being the lot layout as shown on the Site Plan;
- ii) Schedule B being the Riparian Areas Report (RAR) prepared by Current Environmental and dated March 29, 2017; (referred to as the **RAR**)
- iii) Schedule C being the memo from Current Environmental dated June 25, 2017; (referred to as the **CEL Memo**)
- iv) Schedule D being the Bio-inventory Assessment – 3216 Sutton Road prepared by Current Environmental dated October 17, 2017; (referred to as the **Bio-Inventory**)
- v) Schedule E being the Proposed 3 Lot Strata Subdivision – 3216 Sutton Road, Cumberland BC Hydrology and Stormwater Management Report dated November 6, 2017 (referred to as the **Stormwater Plan**).

- b) No encroachment towards the wetland will be permitted unless described in Section 4.6 of the RAR and the Bio-Inventory and site plan provided as Schedule A of this report.

- c) On the entirety of the lots, only permeable surface treatments be used (for driveways, sidewalks, patios, etc).

d) Planting and Vegetation

Compliance with the following requirements:

- i) Protection of existing trees:
 - 1) Create machine access routes that avoid tree roots , storage of excavation/building material away from trees with at least 15m of wood chip mulch to avoid root compaction is described in Section 4.4 of the RAR and CEL Memo.
 - ii) Vegetation enhancements shall be as recommended in CEL Memo;
 - iv) Replanting prescription for vegetation in disturbed areas shall be as prescribed by the Bio-inventory;
 - v) Invasive species removal and replanting as detailed in CEL Memo and Bio-inventory will be carried out between April and May;
 - vi) All planted stock will be maintained for a minimum of two years; within that time, any unsuccessful stock will be replaced at the Owner's expense;
 - vii) Pruning or removal of trees which are deemed hazardous by a registered professional arborist, while retaining wildlife trees and snags (dead, upright trees, or stumps) if safe;
 - viii) Replanting will use trees, shrubs, and ground cover native to the area and selected to suit soil, light, and groundwater conditions of the site and to promote habitat or erosion control functions as necessary;
 - ix) A shrub layer will be provided for a minimum of 33% of the restoration area; shrubs will be planted at an average density of 1.0metre apart and a minimum #2 pot size at time of planting;
 - x) Groundcover may be substituted for shrubs. If groundcover is used, it will consist of brush layers or planted groundcover species at a maximum average spacing of 0.5metres with plants of minimum 10.0centimetre pot size at time of planting; and
 - xi) To ensure their long-term health, all existing trees that are to be retained will be clearly marked prior to development, and temporary fencing will be installed at the drip line to protect them during clearing, grading, and other development activities.
- e) Should damage occur to an Environmentally Sensitive Area (ESA) during development, the Village shall require, at the developer's cost:
- i) A Professional assessment and report on the damage incurred along with recommended mitigative measures; and
 - ii) Full mitigation and rehabilitation of the impacted ESA.

- f) Measures to avoid encroachment into SPEA described in Section 4.5 of RAR in particular, fencing is recommended to protect the SPEA located between existing driveway and wetland SPEA in accordance with Landowners Guide to Wildlife Friendly Fences: How to Build Fence with Wildlife in Mind, Montana Fish Wildlife and Parks. If there is a prolonged period (more than 1 week) between invasive species removal/native vegetation replanting and permanent fence installation a temporary fence (e.g. snow fence) should be installed along the driveway edge to delineate the protected area during development
- g) Compliance with the Management of Fuels and Hazardous Materials recommendations as described in Section 4.9 of the RAR.
- h) Compliance with the Stormwater Management recommendations a contained in the Proposed 3 Lot Strata Subdivision – 3216 Sutton Road, Cumberland BC Hydrology and Stormwater Management Report dated November 6, 2017. Confirmation of compliance to be determined at Building Permit.
- i) Compliance with measures to mitigate erosion as contained in the Proposed 3 Lot Strata Subdivision – 3216 Sutton Road, Cumberland BC Hydrology and Stormwater Management Report dated November 6, 2017.
- j) Post construction site inspection is required as recommended in RAR, a copy of the completed post-inspection shall be provided to the Village.
- k) Design lighting on developments to provide the minimum necessary for safety purposes and to avoid light intrusion throughout the parcel.
- l) A landscaping plan from the Builder of proposed strata Lots 1 and 2 will be required at Building Permit stage.

3. **Security**

- a) A cost estimate of completing any required landscape plan is required. This estimate shall provide the following detailed (itemized) information:
 - i) Softscaping such as, but not limited to plants, bed preparation, etc.;
 - ii) Equipment to be installed such as but not limited to irrigation system, playground, etc.,
 - iii) Hardscaping such as but not limited to sidewalks, fencing, etc., and
 - iv) Labour costs required for the total cost of the construction and implementation of the plan.
- b) The amount shall be 120% of the cost estimate for the approved landscape plan and shall be received before the Permit is issued.
- c) An inspection shall be carried out upon completion of the plan and if compliant, a refund of 75% shall be made.
- d) The remaining 25% will be held back for one year at which time the Owner will request an inspection. If the plantings are to the satisfaction of the Village, the holdback will be returned to the person who paid it. If any of the plants have not survived, they shall be replaced by the Owner per the approved landscape plan,

or failing this, the Village may use the holdback to replace the plants. Any amount of the security not used for the purpose it was intended will be returned to person who paid it.

4. **Expiry**

Subject to the terms of the permit, if the Owner of this Development Permit does not substantially start any construction with respect to which the Permit was issued within 2 years after the date it is issued, the Permit lapses.

5. **Timing and Sequencing of Development**

- a) Works shall take place outside of the bird breeding window of March 1 to August 31 unless otherwise approved by an Registered Professional Biologist.
- b) Land clearing/disturbance shall be limited to dry weather periods that dominate the summer (June to September).

6. **List of Reports or Plans attached as Schedules**

- a) Schedule A being the lot layout as shown on the Site Plan;
- b) Schedule B being the Riparian Areas Report (RAR) prepared by Current Environmental and dated March 29, 2017;
- c) Schedule C being the memo from Current Environmental dated June 25, 2017;
- d) Schedule D being the Bio-inventory Assessment – 3216 Sutton Road prepared by Current Environmental dated October 17, 2017;
- e) Schedule E being the Proposed 3 Lot Strata Subdivision – 3216 Sutton Road, Cumberland BC Hydrology and Stormwater Management Report dated November 6, 2017;

7. **Contaminated Sites Regulation**

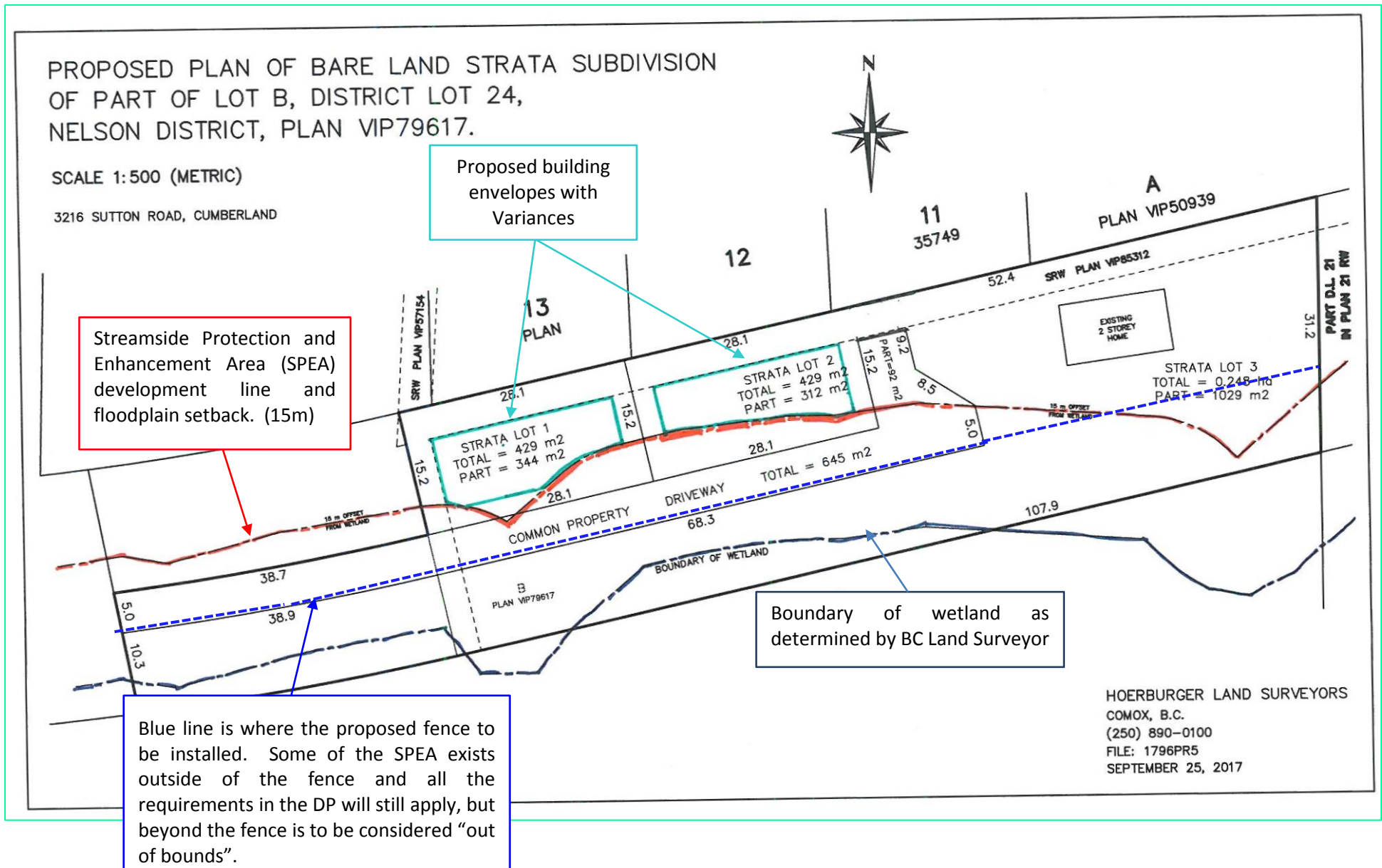
This Permit is issued pursuant to the requirements of the *Environmental Management Act*, whereby the Owner has completed a “Site Declaration” for the subject property.

8. This Permit is **not** a Building Permit.

CERTIFIED as the **DEVELOPMENT PERMIT** issued by resolution of the Council of the Corporation of the Village of Cumberland on _____, 2018 and granted on _____, 2018 (*the Council issues the permit, and senior staff shall grant the permit when all the conditions have been met. (such as the landscaping security, etc)*)

Corporate Officer

Schedule A - Site Drawing.



Schedule B – Riparian Area Report

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Riparian Areas Regulation: Assessment Report

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

Date March 29, 2016

I. Primary QEP Information

First Name	Warren	Middle Name	H.
Last Name	Fleenor		
Designation	Biologist	Company	Current Environmental
Registration #	1385	Email	wfleenor@shaw.ca
Address	244 4 th St. Unit H		
City	Courtenay	Postal/Zip	V9N1G6
Prov/state	BC	Country	Canada
		Phone #	250-871-1944

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

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

III. Developer Information

First Name	Ellen	Middle Name	
Last Name	Strong-Klassen		
Company	n/a		
Phone #		Email	estrongklassen@gmail.com
Address	3216 Sutton Road		
City	Cumberland	Postal/Zip	V0R1S0
Prov/state	BC	Country	Canada

IV. Development Information

Development Type	Subdivision		
Area of Development (ha)	0.096	Riparian Length (m)	155
Lot Area (ha)	0.449	Nature of Development	New
Proposed Start Date	May 1, 2016	Proposed End Date	April 30, 2017

V. Location of Proposed Development

Street Address (or nearest town)	3216 Sutton Road		
Local Government	Village of Cumberland	City	Cumberland
Stream Name	Sutton Road		
Legal Description (PID)	026-428-679	Region	Vancouver Island
Stream/River Type	Wetland	DFO Area	South Coast
Watershed Code	920-545800-21500		
Latitude	49	37	1.2
Longitude	125	1	58.8

Schedule B – Riparian Area Report

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

Table of Contents for Assessment Report

	Page Number
1. Description of Fisheries Resources Values	3
2. Results of Riparian Assessment (SPEA width)	6
3. Site Plan	8
4. Measures to Protect and Maintain the SPEA	
1. Danger Trees.....	10
2. Windthrow.....	10
3. Slope Stability.....	10
4. Protection of Trees.....	11
5. Encroachment	11
6. Sediment and Erosion Control.....	11
7. Floodplain.....	12
8. Stormwater Management.....	12
9. Fuels and Hazardous Materials.....	13
5. Environmental Monitoring	14
6. Photos	15
7. Assessment Report Professional Opinion	17

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

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

The wetland immediately south of the subject property at 3216 Sutton Road is part of a tributary system (WC: 920-553164-209901-513645) that flows in an easterly direction via a series of wetlands and channels downstream to connect with Maple Creek, a tributary of the Trent River. According to the BCMOE FIDQ database¹, known fish presence in the Maple Lake/Creek system includes Rainbow Trout and Cutthroat Trout. The wetland adjacent to the subject property appears to be regulated in part by beaver dam activity and fish presence is unknown. Water levels appear to fluctuate seasonally and with beaver activity.

The wetland is a forested swamp with thick emergent vegetation that includes skunk cabbage, red osier dogwood, reed canary grass, willow sp., red elderberry, and ninebark (Photo 1). The south bank of the wetland is shaded by a maturing second or third growth forested slope, while the north bank falls within the municipal boundaries of the Village of Cumberland and is largely developed, including the existing driveway on the subject property (Photo 2). The north bank of the wetland is located close to an existing driveway on the subject property and contains a number of invasive species and garden escapees including morning glory, Himalayan blackberry, lambs ear, phlox, knotweed, and yellow archangel (Photo 3). Knotweed is a highly invasive plant and must be managed with extreme care to minimize spread of the plant to other areas. The treatment or removal of knotweed should be completed under the supervision or assistance of a QEP. Of particular importance is the proper disposal of the removed vegetation material. This material must taken to an appropriate disposal facility (e.g. Pigeon Lake Landfill; incineration is also an option) to ensure it is not spread to other areas.

Development Proposal

The subject property at 3216 Sutton Road currently supports a 2 storey residence near the northeast corner of the property with access provided from Sutton Road in the west via an approximate 4 m wide gravel driveway (Figure 1). The subdivision proposal is to create 2 additional lots measuring 429 m² each (~0.08 ha total) from the 0.44 ha property where the remainder would be 0.36 ha (Figures 1 & 2).

The proposed development includes subdivision followed by construction/installation of two single family residences, one on each new lot, and bringing services to each lot. The existing cabin and greenhouse (Figure 1) will be relocated outside of the SPEA onto the remainder of the existing lot. Subdivision is proposed as a strata where all future permanent residential development would be limited to the area outside the 15 m wetland SPEA measured from HWM (Figures 1 & 2). Future development of the proposed lots will include improvements to the 15 m SPEA where invasive species (listed above) will be removed and replaced with native vegetation where appropriate; and stormwater from the house rooflines will be detained on site prior to release offsite to reduce the cumulative impacts of increased urbanization. Any future landscaping in the SPEA following residential development will use only suitable native species.

Future residential development should include high standards for on-site stormwater treatment and retention that should include infiltration galleries prior to release offsite towards the wetland.

¹ <http://a100.gov.bc.ca/pub/fidq/viewSingleWaterbody.do>

Schedule B – Riparian Area Report

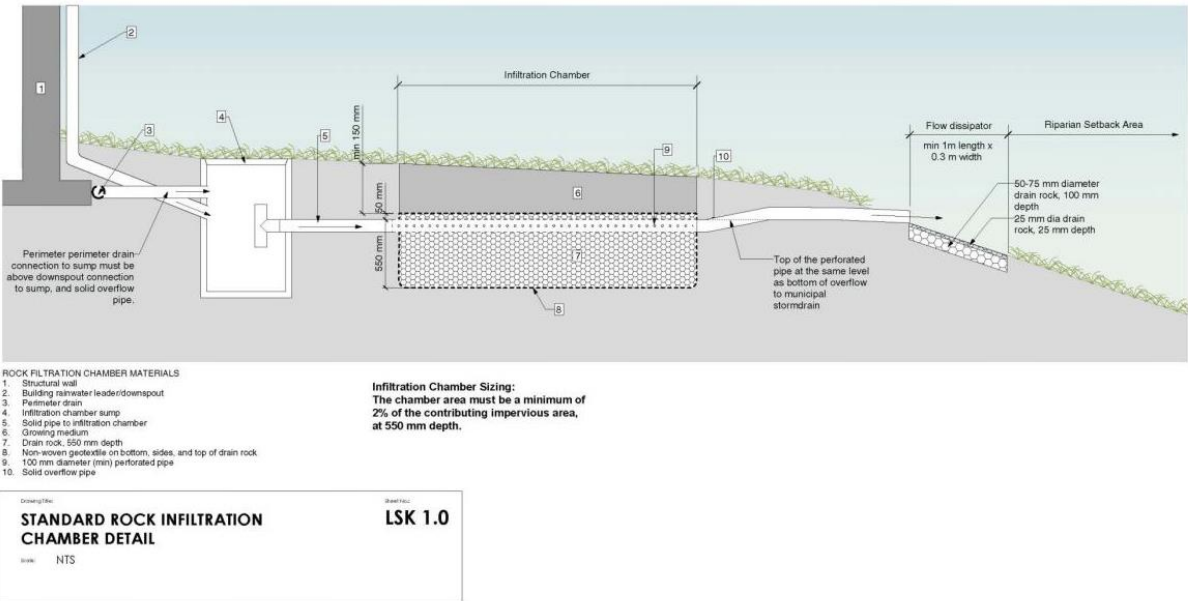
FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

An example of a typical stormwater retention feature is presented on the following page.

Stormwater planning should be done with input from a Qualified Environmental Professional (QEP) to help ensure that no increased hydrological or water quality impacts from development occur. The existing gravel driveway will be retained in its current configuration and not be resurfaced to avoid the addition of impermeable surfaces that can negatively affect stormwater retention.

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



Schedule B – Riparian Area Report

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

2. Results of Detailed Riparian Assessment

Refer to Chapter 3 of Assessment Methodology

Date: Mar. 29, 2016

Description of Water bodies involved (number, type)

1

Stream

Wetland

Lake

Ditch

Number of reaches

Reach #

1

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 upstream		
downstream	n/a	n/a
Total: minus high /low mean		
	R/P	C/P
Channel Type	x	

I, Warren Fleenor, 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 Ellen Strong-Klassen ;

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, Warren Fleenor, 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 Ellen Strong-Klassen ;

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

n/a

Schedule B – Riparian Area Report

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Zone of Sensitivity (ZOS) and resultant SPEA

Segment No:	1					
LWD, Bank, and Channel Stability ZOS (m)	15					
Litter fall and insect drop ZOS (m)	15					
Shade ZOS (m) max	n/a	South bank	Yes		No	X
Ditch	Justification description for classifying as a ditch (manmade, no significant headwaters or springs, seasonal flow)				n/a	
SPEA maximum	15 m					

I, Warren Fleenor, hereby certify that:

- I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
- I am qualified to carry out this part of the assessment of the development proposal made by the developer Ellen Strong-Klassen;
- 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.

Section 3. Site Plan



FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Section 4. Measures to Protect and Maintain the SPEA

1. Danger Trees	
This assessment is in support of the proponent's proposed subdivision and development of the subject property that will require earthworks within the 30 m RAA. There will be no vegetation clearing within the 15 m SPEA; however, earthworks and residence construction/installation outside the SPEA have the potential to disturb existing trees on the property. As a result, a danger tree assessment should be done <u>by a certified ISA arborist and measures implemented to protect trees identified for retention following development activity</u>. The arborist must consider potential changes to tree stability in light of the proposed development work and over the long-term. The results of arborist's assessments will be included in a QEPs post-construction report.	
I, <u>Warren Fleenor</u>, hereby certify that: e) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; f) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ellen Strong-Klassen</u>; g) 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	
This assessment is in support of the proponent's proposed subdivision and development of the subject property that will require earthworks within the 30 m RAA. There will be no vegetation clearing within the 15 m SPEA; however, earthworks and residence construction/installation outside the SPEA have the potential to disturb existing trees on the property. As a result, a windthrow assessment should be done <u>by a certified ISA arborist and measures implemented to protect trees identified for retention following development activity</u>. The arborist must consider potential changes to tree stability in light of the proposed development work and over the long-term. The results of arborist's assessments will be included in a QEPs post-construction report.	
I, <u>Warren Fleenor</u>, hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ellen Strong-Klassen</u>; c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation	
3. Slope Stability	
No triggers for slope stability were found on the subject property during the field assessment as per Section 3.7.3 (Slope Stability) of the RAR Assessment Methods. The subject property lies on generally flat ground, there are no obvious erosion issues associated with the assessed wetland that is currently inhabited by well established vegetation.	
I, <u>Warren Fleenor</u>, hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ellen Strong-Klassen</u>; c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation	

Schedule B – Riparian Area Report

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

4. Protection of Trees	
This assessment is in support of the proponent's proposal to subdivide the subject property and construct/install residences within the 30 m Riparian Assessment Area. During development all of the vegetation, including trees and undergrowth, within the SPEA that are not considered a "danger tree" as assessed by a qualified arborist shall not be impacted in any way by future activities of development on the subject property. This includes protection from mechanical damage, soil disturbance, or soil compaction to prevent destabilizing trees or causing tree or other vegetation mortality. <u>No larger excavations that may endanger the root systems of trees or other vegetation within the SPEAs will be permitted.</u> Other measures will include the following: 1. Create/use machine access routes that avoid tree roots, storage of excavation/building material away from trees within the SPEA, flagging the SPEA boundary, and covering tree roots in access areas with at least 15 cm of wood chip mulch (or similar material) to avoid root compaction. 2. Trenching through the rooting zone of mature trees will be prevented. 3. Establish root protection zones around significant larger trees in the 30 m Riparian Assessment Area. Root protection zones should be calculated by multiplying the diameter of the tree by 18. This value is the radius of the area of land surrounding the trunk of a tree that is to be avoided. 4. Ensure that pollutants and other contaminants cannot enter soils within the tree protection zone. 5. Construction activities outside but adjacent to the SPEA will be limited to surficial "grubbing" only.	
I, <u>Warren Fleenor</u>, hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ellen Strong-Klassen</u>; c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation	
5. Encroachment	
Subdivision and house construction/installation may proceed within the 30 m Riparian Assessment Area (RAA) <u>but outside the SPEA</u>. For any future development within the RAA the setback area will be clearly delineated using flagged stakes prior to the commencement of work. No encroachment within the SPEA south of the existing gravel driveway will be permitted, including machinery, foot traffic, or spoilage material. <u>A QEP must be notified 7 days prior to the commencement of construction</u> to delineate the SPEA and ensure other measures to protect the SPEA are in place (Section 5).	
I, <u>Warren Fleenor</u>, hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ellen Strong-Klassen</u>; c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation	
6. Sediment and Erosion Control	
Residential development will enact specific measures to control sediment during construction that will include: a) The SPEA is to be clearly delineated using stakes or flagging; b) Maintain/do not disturb all vegetation within the SPEA with the exception of recommended invasive species removal;	

Schedule B – Riparian Area Report

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

c) No machinery is to enter the SPEA south of the existing gravel driveway at any time; d) Where there is a potential for silt runoff in the proximity of existing waterbodies, control devices will be installed prior to construction activities commencing; e) Filter fabric dams, rock check dams, and silt fencing will be used as needed on a site-specific basis to control erosion. Filtration should be accomplished using filter fabric keyed into substrates and banks, and elevated using stakes or straw bales. Silt fencing is not an acceptable mitigation technique to control erosion in flowing ditches; however it is useful for containing slumping areas and for use as baffles to slow water velocities. f) Excavation will be stopped during intense rainfall events or whenever surface erosion occurs affecting the watercourse. h) Soil stockpiles will only be placed on the north side of the existing gravel driveway in a location where erosion towards the wetland cannot occur and will not impede any drainage. i) Soil stockpiles with the potential to erode into the wetland are to be covered with poly sheeting. Other techniques, such as terracing or surface roughening can greatly reduce surface erosion on steeper slopes. j) Permanent exposed soil areas and erosion-prone slopes that may potentially erode towards the wetland are to be seeded immediately, or covered with geotextile. k) Clearing will take place immediately prior to excavation and earthworks to minimize the length of time that soils are exposed. Vegetation in adjoining areas will not be disturbed. l) Site re-vegetation measures are required to stabilize soils and reduce erosion. The measures, including hydroseeding, are to be implemented as directed by the biologist as construction is completed.	
I, <u>Warren Fleenor</u>, hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ellen Strong-Klassen</u> ; c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation	
7. Stormwater Management	
Residential development should include high standards for on-site stormwater treatment and retention that should include infiltration galleries prior to release offsite towards the wetland. This is to minimize cumulative hydrological and water quality impacts of increased residential density on aquatic environments. Stormwater planning should be done with input from a Qualified Environmental Professional (QEP) to help ensure that no increased hydrological or water quality impacts from development occur. The existing gravel driveway will be retained in its current configuration and not be resurfaced to avoid the addition of impermeable surfaces that can negatively affect stormwater retention.	
I, <u>Warren Fleenor</u>, hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>Ellen Strong-Klassen</u> ; c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation	
8. Floodplain Concerns (highly mobile channel)	
Floodplain concerns are not an issue as the wetland appears to have a well defined high-water	

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

mark where maturing rooted vegetation inhabits the banks. There are indications of historical tree die-off evidenced by standing dead snags along the water's edge to the south that suggests fluctuating water levels that may be a product of beaver dam activity in the watershed. However, wetland water levels are sufficiently distant from the existing residence that they are of negligible concern.

I, Warren Fleenor, 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 Ellen Strong-Klassen;
- 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

9. Fuels and Hazardous Materials

The accidental release of petroleum, oils, hydraulic fluids, lubricants, concrete additives, anti-freeze or other hazardous materials onto land surfaces or into waterbodies is an offence under Section 36(1)(a) & (3) of the Federal *Fisheries Act* and may result in degradation of habitat quality and could be a threat to human health. Environmental protection procedures for handling and storage of fuels and hazardous materials shall include the following items:

- a) A spill kit of appropriate capacity will be on hand at all times during construction.
- b) All identified spills will be cleaned up immediately, and contaminated soils and vegetation will be removed for appropriate disposal.
- c) Refuelling of equipment is to occur only at designated fuelling stations and located at least 15 m from the wetland.
- d) All fuel, chemicals, and hazardous materials will be clearly marked.
- e) Pumps and jerry cans are to be placed on poly sheeting and sorbent pads to contain spills.
- f) All equipment maintenance with the potential for accidental spills (e.g., oil changes, lubrications) will be done on a designated area at least 15 m from the wetland. Tarps should be laid down prior commencement of work to facilitate clean up.
- g) In the event of a spill, the following guidelines should be followed:
 - Spills need to be immediately reported to the biologist. Spills to the receiving environment are to be reported to the BC Provincial Emergency Program (1-800-663-3456) if they exceed the reportable limits (e.g. 100 litres of fuel or oil).
 - Apply sorbent pads and booms as necessary.
 - Dispose of all contaminated debris, cleaning materials, and absorbent material by placing in an approved disposal site.

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Section 5. Environmental Monitoring

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

This assessment is in support of the proponent's request to subdivide their property into three lots, rather than proposing construction within the 30 m riparian assessment area. As mentioned, a QEP must be notified 7 days in advance of any construction on the subject properties. The following tasks must be completed during any future development by the QEP:

1. Ensure the 15 m wetland setback area is clearly delineated;
2. Review work plan;
3. Ensure appropriate mitigation measures are/will be in place;
4. Review all Measures to Protect the SPEA stated in this report and ensure appropriate equipment to satisfy the measures are on-site or available;
5. Set up a contact system should a biologist or qualified environmental professional (QEP) be required on site in the event of sediment/erosion issues or some other type of risk to aquatic habitats that may arise during construction.

Immediately upon completion of the construction work, the proponent is to contact a QEP for a post-construction site inspection. Any deficiencies noted by the QEP are to be addressed by the proponent. A final post-construction report is to be submitted by the QEP to the BC RAR Notification System.

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Section 6. Photos



Photo 1. View to the south taken from the north bank of the wetland near the centre of the subject property showing dense emergent vegetation community and forested southern bank in the background. June 3, 2015.



Photo 2. View to the west taken from near the southwest corner of the existing residence showing the current state of the property including the wetland (left of image), gravel driveway (center), and the small cabin on the proposed eastern lot subdivision that will be relocated onto the remainder of the subdivided lot outside of the SPEA (right).

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report



Photo 3. View to the east taken from the gravel driveway near the approximate center of the property showing a patch of knotweed -one of a few patches of invasive vegetation on the property.

FORM 1

Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Section 7. Professional Opinion**Assessment Report Professional Opinion on the Development Proposal's riparian area.**Date March 29, 20161. I/We Warren FleenorPlease 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 Ellen Strong-Klassen, 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.]

Memorandum



To: Joanne Rees, Planner
 From: Warren Fleenor, R.P.Bio
 Dusty Silvester, R.B.Tech
 Cc: Ellen Strong-Klassen (Proponent)

Date: June 25, 2017
 Pages: 2
 Project: 688

RE: RIPARIAN AREAS REGULATION ASSESSMENT (MAR. 2016) -
 3216 SUTTON RD., CUMBERLAND

Joanne,

This document prepared by Current Environmental Ltd. (CEL) provides clarification on measures described in CEL's Riparian Areas Regulation (RAR) assessment (dated March 29, 2016). These are provided in accordance with points discussed during our June 13, 2017 site visit and meeting. No significant changes to the original RAR report submitted on March 29, 2016 are required.

1. Section 4 (item 4 - *Protection of Trees*) in RAR report:
 - a. No trees reside within the proposed developable areas, measured outside the 15 m SPEA from the wetland (i.e. north of the existing driveway). As a result, no specific measures for tree protection are required within these areas.
2. Section 4 (item 7 - *Stormwater Management*) in RAR report:
 - a. The recommendation for maintaining the permeable surface of the existing driveway access from Sutton Road should be applied to any new driveway installations needed to provide access to each of the two proposed lots and existing residence.
3. Section 1 in RAR Report:
 - a. Invasive plant removal/treatment within the SPEA must be managed carefully so as to avoid inadvertently distributing invasive plant material elsewhere in the SPEA. As well, avoid broadcasting herbicide (if used to treat knotweed) into the sensitive wetland SPEA.
 - i. As discussed in the RAR report, "Knotweed is a highly invasive plant and must be managed with extreme care to minimize spread of the plant to other areas"; and "The treatment or removal of knotweed should be completed under the supervision or assistance of a QEP".
 - b. Invasive plant species will be removed and replaced with native vegetation where appropriate.
 - i. Appropriate native plant species used for replacement of invasives include: swordfern, red-osier dogwood, willow spp., red elderberry, and nine-bark.
 - ii. Native plants should be installed in the fall (i.e. October) to reduce exposure to dry/hot summer conditions in order to enhance survival. Depending on soil conditions some amendments may be required including slow release fertilizer, top-soil, and mulch. Suitable amendments should be prescribed by a landscape professional or QEP.

Memorandum



- iii. Native plants should be purchased from a plant nursery and not transplanted from elsewhere in the SPEA.
- iv. Minimum 80% survival of planted native stock is required to meet criterion for successful replacement.
- v. Spring 2018 invasive management (i.e. additional removal effort) may be required to ensure that 2017 plant removal was successful.
- vi. Ideally, invasive removal and native replacement should be managed throughout by a landscaping professional to ensure that these measures have been implemented appropriately.
- vii. In order to reduce the chance of future yard waste inputs into the SPEA, signage should be considered on permanent SPEA demarcation fencing to inform all local residents of the sensitivity of the area and of ongoing remediation efforts.

We trust that the above points of expansion and clarification meet the Village of Cumberland's requirements as discussed during our June 13, 2017 meeting. If any additional information is required please don't hesitate to contact the undersigned.

Thank you,

Current Environmental Ltd.

A handwritten signature in blue ink, appearing to read "W. Fleenor".

A handwritten signature in blue ink, appearing to read "D. Silvester".

Warren Fleenor, R.P.Bio. & Dusty Silvester, R.B.Tech.

Bio-inventory Assessment
- 3216 Sutton, Cumberland, BC -



Oct. 17, 2017

Prepared for:
Ellen Strong-Klassen (Proponent)
&
Village of Cumberland

Prepared by:
Current Environmental
Dusty Silvester, R.B.Tech. & Warren Fleenor, R.P. Bio.
558 England Ave.
Courtenay, BC V9N 2N3
p/f: 250.871.1944





Table of Contents:

1	Introduction.....	2
1.1	Background	2
1.2	Proposed Work	2
1.3	Property Description	2
2	Legislation and Regulations.....	3
2.1	Village of Cumberland Development Permit Areas	4
2.2	Watercourses	4
2.3	Bird Nests	5
2.4	Species at Risk and Other Wildlife	6
2.5	Noxious Weed Control	6
3	Survey Methods.....	6
3.1	Background/Existing Information	6
3.2	Aquatic Habitats and Species	7
3.3	Terrestrial Habitats and Species.....	7
3.4	Raptor/Breeding Bird Nest Sites	7
3.5	Species at Risk	8
4	Results	8
4.1	Wetland.....	8
4.1.1	Amphibians.....	9
4.1.2	Avians	9
4.2	Terrestrial Habitat and Wildlife Corridor	10
4.2.1	Non-native vegetation.....	10
4.2.2	Wildlife	11
4.3	Species at Risk	12
5	Summary of Recommendations	12
6	Closure.....	13
7	Disclaimer	14
8	Figures	15
9	Photos.....	18
	Appendix A - Schedule A of the <i>Weed Control Regulation</i> of the BC <i>Weed Control Act</i>	21
	Appendix B - Village of Cumberland Environmental DPA #1 Checklist	24



1 INTRODUCTION

The landowner at 3216 Sutton Road, Cumberland has retained Current Environmental Ltd. (CEL) to provide a bio-inventory, guidance on anticipated land-use constraints, and enhancement opportunities related to the subdivision and development of the subject property bearing legal description: *Part of Lot B, District Lot 24, Nelson District, Plan V1P79617*. Pursuant to the Village of Cumberland's *Development Permit Area (DPA) #1: Environmental Protection*¹, this bio-inventory assessment has been prepared by a Registered Professional Biologist according to the BC Ministry of Environment's *Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia*².

1.1 BACKGROUND

A series of documents has been produced by CEL on behalf of the subject property owner that have been submitted to the Village in support of a subdivision/development permit, including:

- a) A detailed *Riparian Areas Regulation* (RAR) assessment (April 24, 2016) that has also been uploaded to the online RAR notification system (RARNS Assessment #4000).
- b) Memorandum (June 25, 2017) submitted to the Village of Cumberland to clarify some of the measures outlined in the original RAR assessment.
- c) Draft Version of Village DPA #1 Environmental Protection Checklist (Aug. 2, 2017).
 - i. An updated version of Item c) has been appended to this document (Appendix B).

1.2 PROPOSED WORK

Proposed work on the property will include developing two new 429 m² lots (858 m² total) from the existing ~3.5 ha Lot B. A new residence will be established on each lot, with footprints measuring 149 m² and 132 m² respectively (Figure 1). Access to the new lots will be shared with the existing gravel driveway servicing the two storey home present at 3216 Sutton Road. The proposed development envelope is located immediately north of a wetland with a 15 m Streamside Protection and Enhancement Area (SPEA). During high flow conditions the subject wetland connects approximately 2.3 km downstream (eastwards) of the subject property to Maple Creek via a series of wetlands and channels (Figure 2).

Based on existing information, proposed development on the subject property will include measures to protect the wetland and its SPEA from encroachment as well as mitigate any other potential impacts related to construction. The presence of invasive plant species on the property, in particular within the wetland SPEA along the southern edge of the driveway, is of notable concern and is discussed below in Section 5. These measures and others are described in this report as well as the April 24, 2016 RAR assessment.

1.3 PROPERTY DESCRIPTION

The subject lot at 3216 Sutton Road is a residentially zoned property located in a Village *Residential Infill Area* (OCP Future Land Use Map A) and was historically contained within the boundaries of the *Wellington Colliery Rail-line*. The subject property is a water-shedding site containing a two storey residence, small cabin, and woodshed while

¹ <https://cumberland.ca/wp-content/uploads/2012/05/DPA1-Environmental-Protection.pdf>

² <http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare/>



the land slopes gently towards a 0.9 ha forested wetland that resides along the 150 m southern property boundary. The wetland and its riparian area are within the Village's DPA #1 - Environmental Protection (OCP Map E) as well as having been identified as a *Proposed Municipal Park Area* (OCP Map J). As mentioned above, the subject wetland connects downstream as a tributary to the Maple Lake/Creek system (Watershed Code: 920-545800-21500) which ultimately flows into the Trent River (WC: 920-545800).

Stormwater flow from proposed impermeable structures (i.e. residential rooflines) will be directed through detention facilities that will be designed by a qualified engineer. During ground-level reconnaissance, a 25 cm Ø CSP culvert discharging into the subject wetland was identified. The source of the waters conveyed through this pipe are unknown; however, it likely moves flows from the upslope edge of the property, or even neighbouring properties to the north, under the gravel driveway, into the wetland. The wetland itself is considered a collecting site that also conveys flows from upstream (west) via a culvert under the Cumberland Forest access road gate towards Maple Creek in the east.

2 LEGISLATION AND REGULATIONS

Federal, Provincial, and Municipal environmental regulations will govern project development. Compliance with these regulations will be a mandatory condition of any environmental permits issued for the project. Table 1 summarizes Federal and Provincial Acts and Municipal bylaws applicable to project components that will take place within or near Environmentally Sensitive Areas (ESA), such as the wetland along the southern property boundary and its associated SPEA.

Table 1. Summary of Federal/Provincial Acts and Municipal Bylaws that govern environmental protection requirements of project components in and around ESAs.

Project Component	Affected Resource	Applicable Legislation/Regulation/Bylaw	Applicable Permitting
- Vegetation clearing - Invasive species removal	- Soils - Riparian habitat - Wildlife inc. avians & amphibians	- Federal Migratory Birds Protection Act - Federal Species at Risk Act - BC Water Sustainability Act - BC Weed Control Act - BC Wildlife Act - Municipal Bylaw No. 990, 2014	- Village of Cumberland Development Permit Area No. 1
- Earthworks: - Grubbing - Excavating	- Riparian habitat - Aquatic habitat - Wildlife - Soils	- BC Fish Protection Act - BC Weed Control Act - BC Wildlife Act - BC Water Sustainability Act - Municipal Bylaw No. 990, 2014	

The Village of Cumberland Official Community Plan (OCP)³ and Best Management Practices (BMP) for land development necessitate the production of a biological site inventory (bio-inventory) to identify potential disturbances to sensitive ecosystems and species as a result of proposed development activities. The following ecosystem elements were evaluated for this assessment in consideration of regulatory requirements for proposed work in the Village of Cumberland:

³ <https://cumberland.ca/wp-content/uploads/2012/05/Bylaw-990-OCP-consolidated-6Sep16.pdf>



1. Proximity to aquatic habitat (primarily amphibian/avian habitats);
2. Raptor/breeding bird nesting sites;
3. Terrestrial wildlife use and habitats, including vegetation communities and wildlife corridors;
4. The occurrence of rare or endangered species and vegetation communities at risk.

2.1 VILLAGE OF CUMBERLAND DEVELOPMENT PERMIT AREAS

Based on a review of the Village of Cumberland Official Community Plan (OCP) Bylaw 990 (2014), OCP Development Permit Area (DPA) #1 Map E, and a discussion with Village planning staff, it appears that the Village will require documentation in support of assessment under DPA #1 that includes:

- a. Detailed Riparian Areas Regulation assessment prepared by a qualified professional biologist;
 - i. Submitted by CEL on Apr. 24, 2016.
- b. Bio-inventory assessment report prepared by a qualified professional biologist;
 - i. This report, submitted by CEL on Oct. 17, 2017.
- c. Hydrological and stormwater assessment reports prepared by a qualified engineer, hydrologist, or hydrogeologist;
- d. Slope stability report prepared by a geoscientist (pending directive from the Village and/or other professional).

Relevant sections of the Village DPA#1 EP Guidelines Checklist (Appendix B) are limited to *General Requirements* and *Aquatic Ecosystem Areas*. No ESA's were identified within *Terrestrial Ecosystem Areas*, including *Connectivity Areas*, and are not included in this report.

Confirmation of all DPA requirements should be clearly defined by Village staff to the proponent since a development permit file for the project has been initiated. This report should not be considered definitive information on the scope of DPA's that will be required for the project, and will ultimately be determined at the Village's discretion.

2.2 WATERCOURSES

In addition to protection afforded by the Village of Cumberland OCP DPA #1 (Section 2.1) watercourses, wetlands, and their riparian areas are also designated for environmental protection under the BC *Fish Protection Act's Riparian Areas Regulation*. Accordingly, a detailed RAR assessment has been produced for the subject property, as described in a) of Section 2.1 above.

Furthermore, Section 11 of the Provincial *Water Sustainability Act* requires an Approval be granted by the Ministry of Forests Lands and Natural Resource Operations (MFLNRO) for "changes in and about a stream" defined as⁴:

- a) any modification to the nature of the stream including the land, vegetation, natural environment or flow of water within the stream, or
- b) any activity or construction within the stream channel that has or may have an impact on a stream.

Notifications are relevant to low-risk changes, such as culvert upgrades, that will have a minimal impact on the environment and third parties; while larger, more complex works, such as channel modifications require an *Approval*. Applying for a Section 11 notification under the *Water Sustainability Act* is the proponent's responsibility and the applicant must "address channel stability, flood levels as well as fish and wildlife resource values as

⁴ <http://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-licensing-rights/working-around-water>



appropriate". Depending on the Project's ultimate stormwater design (to be provided in a separate engineer/hydrologists' report) a Section 11 Notification may be required. These may take up to 140 days to process.

Best Management Practices outlined in the *Users' Guide to Working in and Around Water*⁵ should be implemented as the Project aims to meet and/or exceed the provincial and federal requirements for habitat protection.

2.3 BIRD NESTS

The *Migratory Bird Convention Act* (MBCA) protects individuals and populations of migrating birds, including their eggs and nests. Among a number of prohibitions, this act requires there be no disturbance to the nests or eggs of migratory birds without a permit from the Minister, and there be no addition of substances "in waters or an area frequented by migratory birds or in a place from which it may enter such waters or such an area — that is harmful to migratory birds."⁶

Section 34 of the provincial *Wildlife Act*⁷ specifies that:

A person commits an offence if the person, except as provided by regulation, possesses, takes, injures, molests or destroys

- (a) a bird or its egg,
- (b) the nest of an eagle, peregrine falcon, gyrfalcon, osprey, heron or burrowing owl, or
- (c) the nest of a bird not referred to in paragraph (b) when the nest is occupied by a bird or its egg.

Raptor nests covered under the Act are protected year round whether they are active or not, while breeding birds' nests are only protected while inhabited by a bird or its egg/young.

During urban and rural land development, provisions should be made to maintain adequate vegetative buffers to protect raptor and active breeding bird nesting sites. According to the *Wildlife Tree Stewardship Atlas*, "protection of the tree and buffer are necessary for the continuing use and productivity of these species and to prevent the abandonment of the nest or failure of the tree".⁸

Due diligence dictates that a pre-clearing avian nest survey should be undertaken by a QEP prior to the removal of any trees or other vegetation if those works are timed during the breeding bird nesting window (March 1 - August 31)⁹. Based on existing information no tree removal is anticipated during the proposed subdivision/development; however, invasive species removal of understory vegetation within the project footprint is recommended (Section 5).

⁵ BC Ministry of Environment. May, 2008.

⁶ Migratory Bird Convention Act. <<https://www.ec.gc.ca/Nature/default.asp?lang=En&n=7CEBB77D-1>> & <<http://laws-lois.justice.gc.ca/eng/acts/M-7.01/>>

⁷ BC Wildlife Act. Accessed from: <http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96488_01#section34>.

⁸ Federation of BC Naturalists. *Wildlife Tree Stewardship Atlas*. Community Mapping Network. Accessed from <<http://cmnmaps.ca/wits/>>.

⁹ Develop with Care. (2014). *Environmental Guidelines for Urban and Rural Land Development in British Columbia*. <<http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare/>>.



2.4 SPECIES AT RISK AND OTHER WILDLIFE

Species and communities of concern are listed in provincial red and blue lists administered by the BC Ministry of Environment¹⁰ and the federal Species at Risk Public Registry¹¹. Wildlife management considerations result in the conservation of wildlife, habitat, and sustainable human interactions pursuant with the *Wildlife Act* of British Columbia. Note that the protection of most Species at Risk on private lands in Canada is voluntary with the notable exceptions of provisions implemented by local governments for their protection; Schedule 1 listed aquatic species, and listed migratory bird species which are protected under the *Migratory Birds Convention Act*.¹²

2.5 NOXIOUS WEED CONTROL

The BC *Weed Control Act*¹³ contains a "duty to control noxious weeds" where Section 2) requires that "an occupier must control noxious weeds growing or located on land and premises [...] occupied by that person". Noxious weeds are defined as a "weed designated by regulation" - a list of regulated weeds is provided in Appendix A while those listed as noxious are identified in the comments column of Table 2 in Section 4.2.1 below.

The Village of Cumberland *Prevention of Public Nuisances Bylaw No. 870* requires that the presence of noxious weeds listed under the provincial regulation be managed according to the provisions under the *Weed Control Act*. The use of any herbicides/pesticides by a QEP in the management/removal of invasive species must occur within the legislated framework of the Village of Cumberland *Pesticide Use Control Bylaw No. 838 (2006)*, as well as general BMPs for the proper handling and disposal of noxious and invasive plant materials.

Although not dictated in the *Act*, it is recommended that all weed species (noxious, invasive, nuisance, etc.) listed in Table 2 that occur within the protected area of the SPEA and the proposed subdivision envelopes (Figure 3) be removed according to best management practices, by a qualified professional, for appropriate disposal off site (Section 5).

3 SURVEY METHODS

Develop with Care 2014 ("DWC") provides guidance for preliminary and detailed site inventories. A preliminary DWC site-assessment was completed during the process of RAR data collection on June 3, 2015, while a detailed DWC site bio-inventory was completed on Oct. 4, 2017 and forms the basis for this report.

Additional methods used to determine the occurrence and distribution of ESAs for this bio-inventory are provided here.

3.1 BACKGROUND/EXISTING INFORMATION

Existing information on ESAs on or near the subject property were obtained from the following sources:

1. Conservation Data center (CDC);
2. Wildlife Tree Stewardship Atlas (WITS);

¹⁰ Ministry of Environment (2006). *Endangered Species and Ecosystems*. Conservation Data centre. Government of BC. Retrieved from <<http://a100.gov.bc.ca/pub/eswp/>>.

¹¹ Government of Canada. (2012). *Species at Risk Public Registry*. Accessed from: < http://www.sararegistry.gc.ca/default_e.cfm>.

¹² <http://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=96C43121-1>

¹³ http://www.bclaws.ca/civix/document?id=consol21/consol21/00_96487_01



3. Sensitive Ecosystem Inventory (SEI);
4. Sensitive Habitat Inventory and Mapping (SHIM);
5. Village of Cumberland Development Permit Area #1 Map "E";
6. Species at Risk Act (SARA) database;
7. Species at Risk & Local Government database;
8. Ministry of Environment BC Species and Ecosystems Explorer;
9. Fisheries Inventory Data Query (FIDQ);
10. Aerial photographs.

3.2 AQUATIC HABITATS AND SPECIES

Criteria for determining and describing aquatic ESAs and determining setbacks from identified features were based primarily on the BC *Riparian Areas Regulation Assessment Methods v. 3.3*¹⁴, the Resources Inventory Committee of British Columbia *Reconnaissance (1:20,000) Fish and Fish Habitat Inventory: Standards and Procedures Version 1.1*¹⁵, Village of Cumberland OCP Development Permit Area #1 Map "E"¹⁶, and from the project biologist's previous experience in liaising with local government and Federal and Provincial agency staff.

3.3 TERRESTRIAL HABITATS AND SPECIES

Survey methods for terrestrial elements or ESA's included those outlined in *Environmental Objectives, Best Management Practices and Requirements for Land Developments*¹⁷, *Environmental Best Management Practices for Urban and Rural Land Development in British Columbia*¹⁸, and the *Field Manual for Describing Terrestrial Ecosystems*¹⁹.

3.4 RAPTOR/BREEDING BIRD NEST SITES

Background research and ground-level surveys conducted by Current Environmental (CEL) were done in accordance with methods adapted from *Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia*²⁰; Resource Information Standards Committee (RISC) *Inventory Methods for Raptors*²¹; *Bald Eagle Monitoring Guidelines*²²; and *Instructions for Conducting the Breeding Bird Survey (BBS)*²³.

Specific survey methods include:

1. Researching nest tree locations and historical survey information using the WITS Atlas⁶;

¹⁴ http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/assessment_methods.pdf

¹⁵ Resource Information Standards Committee. (1999). *Reconnaissance (1:20,000) Fish and Fish Habitat Inventory: Standards and Procedures*. Retrieved from <<http://www.ilmb.gov.bc.ca/risc/pubs/aquatic/sitecard/sitecard.pdf>>.

¹⁶ <https://cumberland.ca/wp-content/uploads/2012/05/OCP-Appendix-B-Maps.pdf>

¹⁷ BC Ministry of Environment Lands and Parks, 2001

¹⁸ BC Ministry of Environment, Draft 2005

¹⁹ BC Ministry of Environment Lands and Parks and BC Ministry of Forests – Research Branch, 1998

²⁰ BC Ministry of Environment. (2013). *Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia*. Guidelines and Best Management Practices. Accessed from <http://www.env.gov.bc.ca/wld/documents/omp/raptor_conservation_guidelines_2013.pdf>.

²¹ Resource Information Standards Committee. (2001). *Inventory Methods for Raptors – Version 2.0*. Standards for Components of British Columbia's Biodiversity No. 11. Ministry of Sustainable Resource Management. Environmental Inventory Branch of the Terrestrial Ecosystems Taskforce. Retrieved from <https://www.for.gov.bc.ca/hts/risc/pubs/tebiodiv/raptors/version2/rapt_mi_v2.pdf>.

²² United States Fish and Wildlife Service. (2007). *Bald Eagle Monitoring Guidelines*. North Florida Ecological Services Office. Retrieved from <<https://www.fws.gov/northflorida/BaldEagles/Documents/2007-BE-Monitoring-Guidelines-without-figures.htm>>.

²³ <http://ec.gc.ca/recom-mbs/default.asp?lang=en&n=5EE0ADBA-1>



2. Determining that no previously unknown raptor nests, or active breeding bird nests, reside within the project footprint by ground level reconnaissance on Oct. 4, 2017;
3. Ascertaining the proximity of the nearest validated raptor nesting sites to the subject property using Geographic Information System (GIS) tools.

3.5 SPECIES AT RISK

An office-based assessment of Species at Risk occurrences on the subject property was completed using the *CDC Mapped Known Locations of Species and Ecological Communities at Risk*²⁴, *BC Species and Ecosystems Explorer*²⁵, and the *Federal Species at Risk Public Registry*²⁶.

The on-site assessment of Species at Risk was completed concurrent with the other inventory efforts mentioned above and was based primarily on methods outlined in *Develop with Care (2014)*²⁷ and *Environmental Best Management Practices for Urban and Rural Land Development*²⁷.

4 RESULTS

The primary ESA identified in the study area is an approximate 0.9 ha forested wetland that parallels the southern property boundary for its entire ~150 m length. Additional ESA's exist within the confines of the wetland and its riparian area that include aquatic and avian habitats, and its general function as a wildlife migration corridor and greenway connectivity area (Figures 2 & 3).

4.1 WETLAND

The 0.9 ha forested wetland located along the southern subject property boundary is part of a wetland/channel drainage complex that flows west to east through a depression located between the slopes of Cumberland Community Forest land to the south and the Village to the north (Figure 2). The tributary channel passes through a culvert under the Cumberland Forest access road gate, immediately west of the subject property, and continues 2.3 km to the east towards Maple Creek which ultimately flows into the Trent River.

Maple Lake, the primary headwaters of Maple Creek is known to support populations of rainbow trout, steelhead, and cutthroat trout, while the Trent River contains chum (*Oncorhynchus keta*), coho (*O. kisutch*), pink salmon (*O. gorbuscha*), rainbow/steelhead (*O. mykiss*), and cutthroat trout (*O. clarkii*)²⁸. During the Oct. 4, 2017 site assessment the subject wetland was dry with moist soils and will not support fish populations during the dry summer months.

Based on native vegetation community composition, the subject wetland can be categorized as F103 (Pacific willow - Red-osier dogwood - Horsetail) flood association which is indicative of a regularly flooded riparian site.²⁹ In addition to possibly providing direct fish utilization during the wet winter months, the subject wetland does supply

²⁴ <http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/explore-cdc-data/known-locations-of-species-and-ecosystems-at-risk>

²⁵ <http://a100.gov.bc.ca/pub/eswp/>

²⁶ http://www.sararegistry.gc.ca/species/default_e.cfm

²⁷ BC Ministry of Water, Land and Air Protection. Draft 2004. Section 6. Special Wildlife and Species at Risk. Accessed from <<http://www.far.gov.bc.ca/hfd/library/documents/bib56812.pdf>>.

²⁸ Fish Inventories Data Queries. Single Waterbody Query. Accessed from: <<http://a100.gov.bc.ca/pub/fidq/infoSingleWaterbody.do>>

²⁹ MacKenzie, W. & Moran, J. (2004). *Wetlands of British Columbia: A Guide to Identification*. Land Management Handbook No. 52. Resource Branch BC Ministry of Forests. Victoria, BC. pp. 294.



volumetric storage and slow release of overland flows that enhance food production for downstream fish, functions to moderate hydrological effects (i.e. velocity and volume), and water quality buffering that help maintain the overall health and productivity of the Maple Creek tributary. As well, volumetric buffering serves to minimize downstream flooding of lands.

The subject wetland contains a variety of native vegetation species dominated by facultative wetland plants red-osier dogwood (*Cornus stolonifera*), hardhack (*Spiraea douglasii*), common cattail (*Typha latifolia*), skunk cabbage (*Lysichiton americanus*), and willow (*Salix* spp.) below the high-water mark (HWM) (Photos 1 & 2). Species located along the wetland fringe are variable. The southern bank is dominated by hemlock (*Tsuga heterophylla*), Sitka spruce (*Picea sitchensis*), and western red cedar (*Thuja plicata*) conifers with an understory of swordfern (*Polystichum munitum*) and salal (*Gaultheria shallon*). The northern bank, adjacent to the subject property, includes a canopy of big leaf maple (*Acer macrophyllum*), bitter cherry (*Prunus emarginata*), black cottonwood (*Populus balsamifera trichocarpa*), and red alder (*Alnus rubra*) with an understory of red-osier dogwood (Photo 1) and a high density of invasive species occurrences (Section 4.2.1).

4.1.1 Amphibians

The wetland may provide suitable amphibian breeding habitat while nearby riparian forests would support important amphibian rearing/foraging habitat. The life-cycles of numerous amphibian species require laying egg masses in standing water during early spring while, once hatched the juveniles are able to proceed into their terrestrial foraging life stage as waters recede later in the spring and through the summer. Pacific chorus frogs (*Pseudacris regilla*) were heard vocalizing during the site visit and represent one amphibian species supported by the subject wetland that may also include the provincially blue-listed red-legged frog (*Rana aurora*), northwestern salamander (*Ambystoma gracile*), long-toed salamander (*Ambystoma macrodactylum*), and roughskin newt (*Taricha granulosa*).

4.1.2 Avians

Wetlands where water levels fluctuate seasonally depending on precipitation often support higher biodiversity than what might be observed in nearby terrestrial forested areas (Zedler, 2003)³⁰. Likewise, species richness is often higher because of interactions with riparian forest habitats. Higher seasonal water levels can reduce predation on a number of bird species that might use a wetland for foraging or breeding purposes. Avian uses of wetland habitats are also closely linked to the foraging, resting, and nesting practices of many migratory bird species (Silveira, 1998)³¹. Bird nesting considerations during site development are discussed further in Section 5.

Several snags, or standing dead trees, observed within the wetland and along its vegetated fringe are providing feeding habitat for cavity excavating avians, and nesting habitat for cavity nesting species. The sizes and shapes of cavities vary, and may have been created by primary cavity excavator species such as pileated woodpeckers, northern flickers, and hairy woodpeckers. A hairy woodpecker was observed excavating a wetland snag during Oct. 4, 2017 site reconnaissance. Cavities such as these provide critical nesting habitat for a number of secondary cavity user species such as Northern Saw-whet and Northern Pygmy Owls. These wildlife trees are considered important ESAs and should be maintained wherever possible. All wildlife trees observed near the subject property were

³⁰ Zedler, P. (2003). *Vernal Pools and the Concept of "Isolated Wetlands"*. Wetlands. Vol. 23, No. 3. Pp. 597-607.

³¹ Silveira, J. (1998). *Avian Uses of Vernal Pools and Implications for Conservation Practice*. Pages 92-106 in: C.W. Witham, E.T. Bauder, D. Belk, W.R. Ferren Jr., and R. Ornduff (Editors). *Ecology, Conservation, and Management of Vernal Pool Ecosystems – Proceedings from a 1996 Conference*. California Native Plant Society, Sacramento, CA.



within the wetland boundaries, not on the subject property, and will be protected therein through the progress of work and from future development (Photo 3).

4.2 TERRESTRIAL HABITAT AND WILDLIFE CORRIDOR

The vegetation community found on the subject property immediately inland from the high-water mark of the wetland has been historically disturbed by residential use including the existing driveway, landscaping, and deposition of yard waste. Native species composition of the wetland fringe adjacent to the subject property is described in Section 4.1 above while non-native species are discussed below in Section 4.2.1.

The proposed subdivision footprints have been historically cleared and contain a young shrubby cover dominated by invasive Scotch broom, tansy, and knotweed (Photo 4). A single English oak is present towards the northern edge of the proposed eastern subdivision lot, adjacent to the statutory right-of-way that runs along the northern property boundary. This tree should be maintained if possible for species diversity and aesthetics more so than habitat function (Figure 3). Recommendations for the control of invasives on the upland terrestrial portions of the lot are provided in Section 5.

4.2.1 Non-native Vegetation

The majority of the wetland fringe understory adjacent to the existing gravel driveway servicing the property has been impacted by encroachment from non-native plant species (Table 2; Figure 3). The presence of these non-natives is of utmost concern to the ecological integrity of the site as some of the species present are known to be highly competitive and if left unabated will form dense monocultures with high likelihood of spreading to other nearby ESAs. Noxious weeds include non-native plant species that lack insect predators, plant pathogens, or native competitors to keep their spread in check. As a result, they are often able to grow aggressively and can out-compete native species, cause habitat destruction, and become difficult to control.

For example, the BC *Weed Control Act* listed noxious weed giant knotweed, is present on the property, and as described in CELs Mar. 29, 2016 RAR, is known to be "a highly invasive plant and must be managed with extreme care to minimize spread of the plant to other areas. The treatment or removal of knotweed should be completed under the supervision or assistance of a QEP. Of particular importance is the proper disposal of the removed vegetation material. This material must be taken to an appropriate disposal facility (e.g. Pigeon Lake Landfill; incineration is also an option) to ensure it is not spread to other areas." The critical importance of proper handling and disposal of this and other invasive and noxious species present on the property cannot be overemphasized. Recommendations for soliciting the assistance of a QEP certified in the use of noxious weed control measures is provided in Section 5.

During ground-level reconnaissance on Oct. 4, 2017 it was noted that an improperly executed attempt at knotweed removal on the subject property has taken place in a number of locations where the stalks were cut and stockpiles of the plants were left on the ground; there was also some indication that burning the stockpiles was attempted but not completed effectively (Photos 5-6; Figure 3). Cutting and leaving stalks in areas where they had not previously occurred commonly results in further spread of the plant as it will easily sprout and take root vegetatively from the stalk material. The improper removal and disposal of knotweed highlights the need to involve professionals in the eradication of this and other noxious/invasive plants on the property.

The "Comments" column in Table 1 below differentiates the threat level the observed non-native species may pose according to: a) their being legislated as *noxious* under the BC *Weed Control Act*, or b) designated by an invasive plant council or the province as nuisance or invasive species requiring targeted but not legally



mandated control measures³². As mentioned, the BC *Weed Control Act* contains directives outlining "duty to control noxious weeds" as a result of the serious negative impacts that can result from the unmitigated spread of these plants.

Table 2. Invasive plant species observed along the wetland fringe/driveway interface at 3216 Sutton Road during Oct. 4, 2017 site reconnaissance.

Common Name	Scientific Name	Comments ³²	Regulated by BC <i>Weed Control Act</i>
Comfrey	<i>Symphytum officinale</i>	Exotic	No
Common tansy	<i>Tanacetum vulgare</i>	Noxious	Regional (not Van. Isl.)
Giant knotweed	<i>Fallopia sachalinensis</i>	Noxious, invasive	Yes
Great burdock	<i>Arctium lappa</i>	Noxious	Regional (not Van. Isl.)
Himalayan balsam	<i>Impatiens glandulifera</i>	Invasive	No
Himalayan blackberry	<i>Rubus armeniacus</i>	Invasive	No
Morning glory	<i>Convolvulus arvensis</i>	Nuisance	No
Scotch broom	<i>Cytisus scoparius</i>	Highly invasive	No
Yellow archangel	<i>Lamium galeobdolon</i>	Invasive	No

According to the Invasive Species Council of BC (ISCBC) website³³, the Coastal Invasive Species Committee (CISC) attended areas near the Village in 2013 to remove knotweed from specified locations. In addition, a site near the yellow access gate to the Cumberland Forest, adjacent to the subject property, was identified as an area of concern because of the presence of invasive *Lamium* (yellow archangel) - which is also present on the subject property (Figure 3). The article also indicates that a Village staff report stated "knotweed has not been observed in the Cumberland Community Forest" and appropriate management of knotweed on the subject property will be necessary to maintain protection of the Community forest, neighbouring properties, and the riparian areas of the wetland tributary to Maple Creek.

Recommendations for the removal and maintenance of noxious/invasive plants are provided in Section 5.

4.2.2 Wildlife

Indications of site use by wildlife were evident throughout the wetland area, as well as the terrestrial wetland fringe. Bear scat, deer tracks, and mustelid tracks were observed on or near the subject property and indicate that wildlife migrate through, and forage in, the area as a result of the wetland's location between the urbanized area of the Village and the steeper forested areas to the south.

Based on the above observations and lack of deer bedding locations, it appears that the wetland and subject property is used primarily as a migration corridor. It is recommended that the fence-line that is to be erected along the edge of the existing driveway, for the protection of the wetland SPEA, be wildlife friendly and not be built in a manner that might impede migration of small to large mammals transiting the area. This includes periodic breaks in the fencing and a minimum clearance of 0.6 m between the bottom of fence and ground surface to allow passage of most species.

³² http://ibis.geog.ubc.ca/biodiversity/eflora/databases/Invasive_Species_Checklist_2012.pdf

³³ <http://bcinvasives.ca/news-events/recent-highlights/cumberland-joins-crusade-to-fight-noxious-knotweed>



4.3 SPECIES AT RISK

The Conservation Data center (CDC) maintains an active database of species and ecological communities at risk for each Forest District in British Columbia. Detailed records are maintained for species and ecological communities that are of special concern (blue list) or at risk of extirpation and extinction (red list). The CDC online mapping resource³⁴ did not show the presence of any listed species near the subject property. Furthermore, no species at risk were identified on the subject property or within the forested wetland along the southern property boundary during field reconnaissance efforts on June 3, 2015 or Oct. 4, 2017.

5 SUMMARY OF RECOMMENDATIONS

The following recommendations have been made based on existing information and the observations made during ground-level reconnaissance efforts on Oct. 4, 2017. These recommendations are intended to bring the subject property into compliance with relevant legislation (i.e. *BC Weed Control Act*) and to help augment the present and future ecological integrity and function of the existing property and proposed lots based on the subdivision/development proposal. These recommendations include:

- 1) All weed species (noxious, invasive, nuisance, etc.) within the protected area of the 15 m SPEA north of the wetland, within the proposed subdivision envelopes, and within the statutory right-of-way along the northern property boundary must be removed according to best management practices, under the supervision of a QEP, for appropriate disposal off site.
 - a. A qualified QEP should be certified to handle noxious weeds and utilize herbicides/pesticides (under the purview of the Village of Cumberland *Pesticide Use Control Bylaw No. 838 (2006)*), and operate under BMPs for the proper handling and disposal of noxious and invasive plants.
 - b. The Courtenay office of the Coastal Invasive Species Committee (CISC)³⁵ is understood to meet these criteria and could be retained to handle the remediation of areas affected by invasive plants on the subject property.
 - c. A multi-year monitoring and treatment plan may be required to effectively remove all of the noxious/invasive species present on the subject property.
 - d. Some funding assistance may be available through the "Knot on my Property" program funded in part by the provincial government.³⁶
- 2) Preferred timing for invasive species removal is in the spring months (April-May) when new vegetative growth is evident but before annual growth is at its maximum. This period, however, coincides with the DWC breeding bird nesting window (March 1 - August 31). The nesting is a period of heightened sensitivity with respect to vegetation removal that will require a QEP conduct a nest survey prior to any vegetation removal to avoid impacts to nesting birds protected under the federal *Migratory Bird Convention Act* and the *BC Wildlife Act*.
- 3) Any exposed soils within the wetland SPEA (specifically on the south side of the gravel driveway) should be replanted with a suitable assemblage of native species following invasive plant remediation efforts, but prior to fence installation. Re-planting exposed soils with a suitable assemblage of native species intended to compete with invasive plant species, and that will augment habitat values to terrestrial species and avians, is recommended.

³⁴ <http://maps.gov.bc.ca/ess/sv/cdc/>

³⁵ Don Hare, Executive Director, Coastal Invasive Species Committee. Office phone: 250-710-2010; Email: info@coastalisc.com

³⁶ <http://knotonmyproperty.com/>



- a. The assemblage of native species should be selected based on their ability to compete with invasive plant species, consistent with existing native species that are prospering on-site, and that will augment habitat values to terrestrial species and avians.
 - i. Plant species that meet the above criteria include, but are not limited to, red-osier dogwood, Sitka spruce, coastal western hemlock, swordfern, and salmonberry.
 - b. The number/density of plants required for replanting will depend on the ultimate area of exposed soils following invasive removal. A common density is one plant per square meter for shrubs and 5-6 meter spacing for trees. A rough estimate based on the area currently inhabited by invasives within the wetland SPEA along the driveway edge is 110 m² which would equate to approximately 100 replacement plants.
 - c. As per DPA #1 Guidelines (Appendix B), "All planted stock will be maintained for a minimum of two years; within that time, any unsuccessful stock will be replaced at the owner's expense".
- 4) Installation of a fence-line along the edge of the existing driveway for the protection and delineation of the protected wetland SPEA should be wildlife friendly and built in a manner that does not impede migration of small to large mammals transiting the area.
- a. The fence is to be very visible and allow wildlife to easily jump over or pass under; alternatively periodic breaks in the fence can be provided to allow passage. It is recommended that a short (maximum 1 m height) split rail cedar fence be considered or if wire fencing is preferred it should have a 0.6 m gap under it and include open sections through which wildlife can pass. Increased visibility using a top-rail or smooth, coloured poly-wire can help ungulates and birds avoid or navigate fences.
 - b. If there is a prolonged period (> 1 week) between invasive species removal/native vegetation replanting and permanent fence installation, a temporary fence (e.g. snow fence) should be installed along the driveway edge to delineate the protected area during development.
 - a. As per DPA #1 Guidelines (Appendix B), temporary fencing will be "a minimum height of 1.2 metres and supported by poles a maximum distance of 2.5 metres from one another. This fence will remain in place throughout clearing, site preparation, construction, or any other form of disturbance."

6 CLOSURE

We trust that environmental features and potential constraints affecting subdivision/development in the study area have been sufficiently defined and described. Please contact the undersigned if you have any questions.

Yours truly,

Dusty Silvester, R.B.Tech.

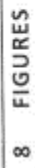
and

Warren Fleenor, R.P.Bio.



7 DISCLAIMER

This report was prepared exclusively for Ellen Strong-Klassen and the Village of Cumberland by Current Environmental. The quality of information, conclusions and estimates contained herein is consistent with the level of effort expended and is based on: i) information available at the time of preparation; ii) data collected by the authors and/or supplied by outside sources; and iii) the assumptions, conditions and qualifications set forth in this report. This report is intended to be used by Ellen Strong-Klassen and the Village of Cumberland only, subject to the terms and conditions of its contract or understanding with Current Environmental. Other use or reliance on this report by any third party is at that party's sole risk.



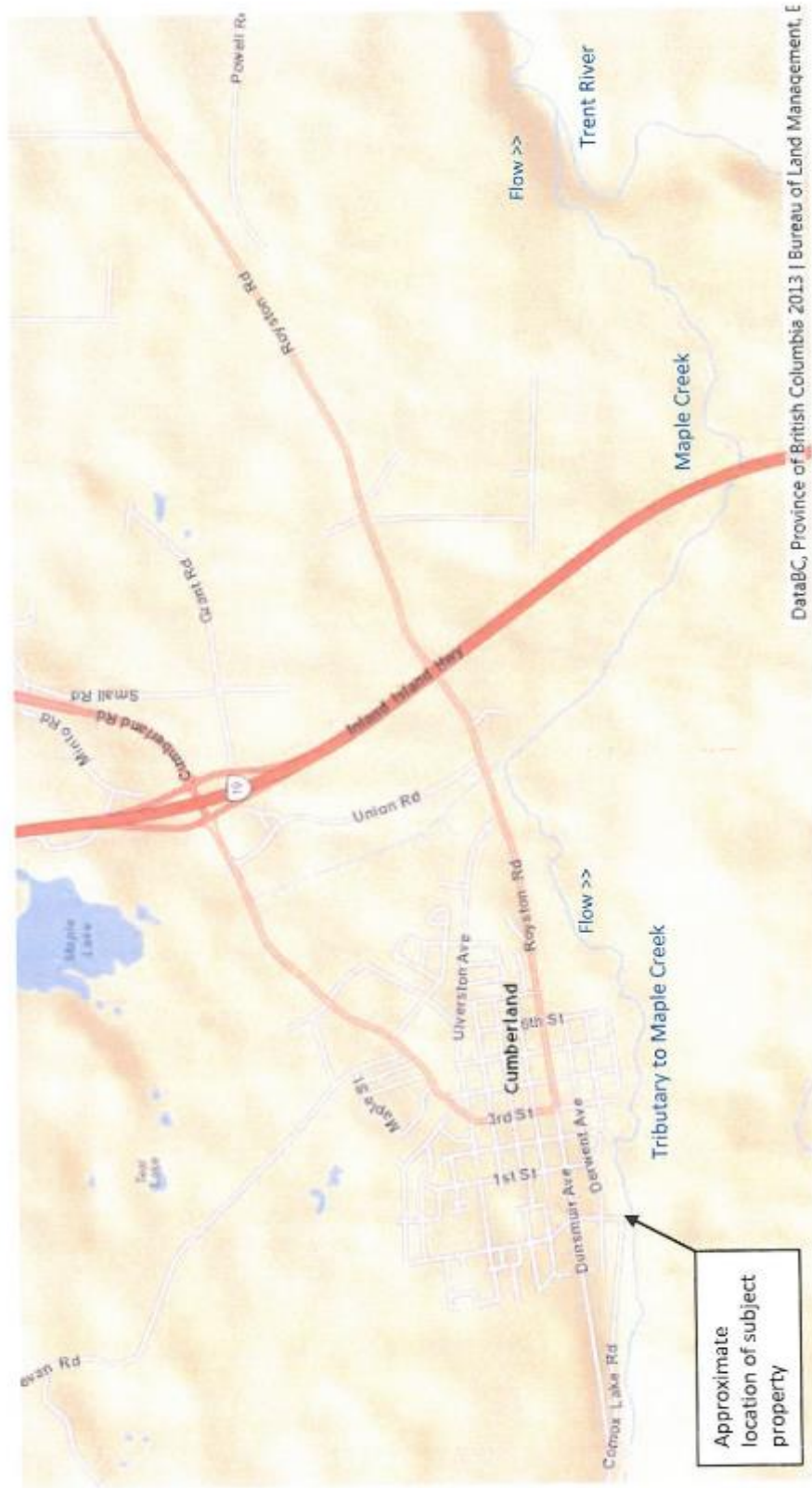


Figure 2. Overview map showing the approximate location of the subject property in relation to the tributary of Maple Creek and its downstream connectivity to the Trent River. Adapted from iMapBC <<https://maps.gov.bc.ca/ess/hm/imap4m/>>

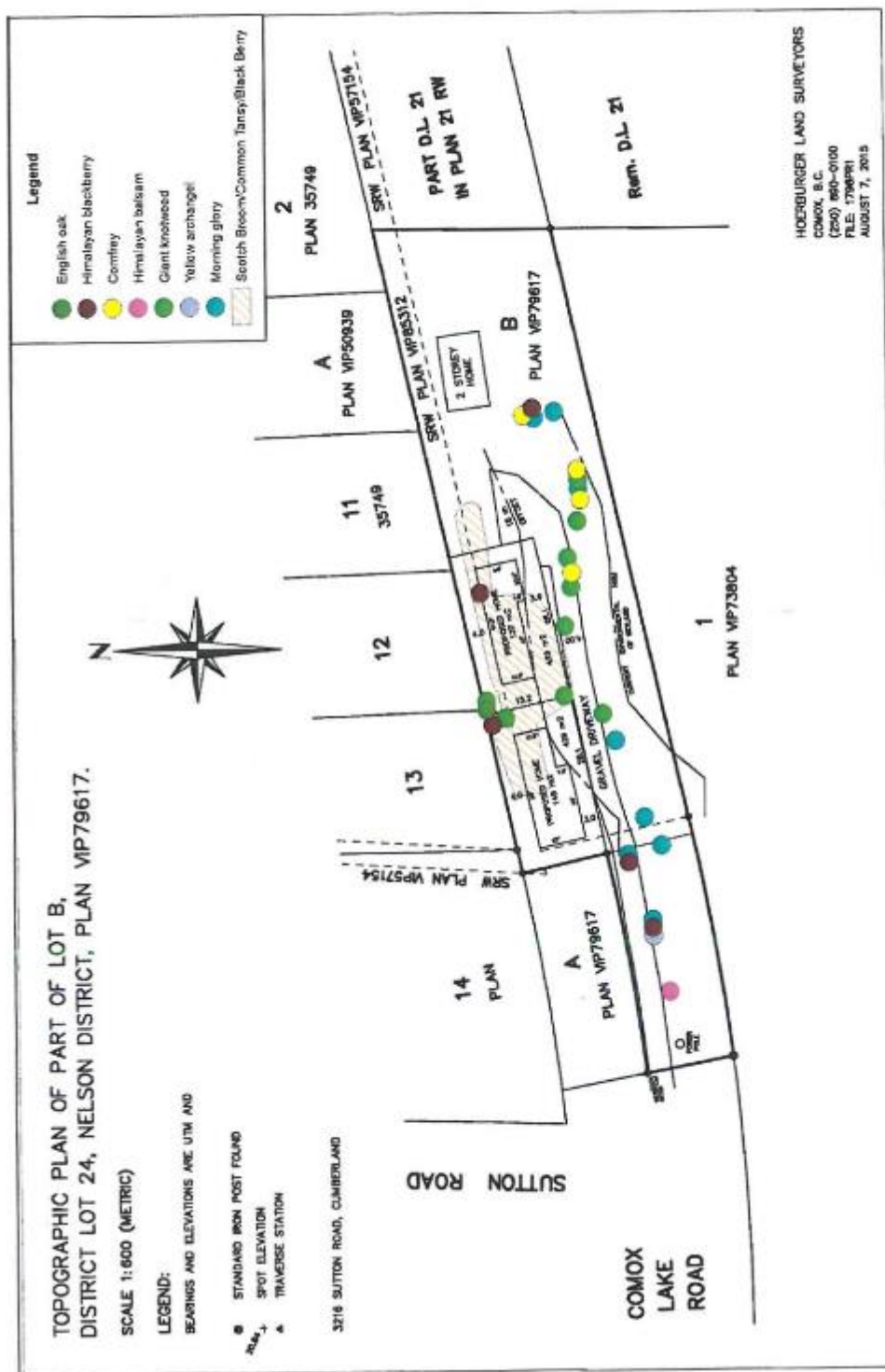


Figure 3. Annotated site plan of the subject property showing locations of observed non-native plants recommended for remediation.

9 PHOTOS



Photo 1. View to the southeast taken from the existing driveway near the centre point of the subject property showing the typical vegetation composition of the wetland located along the southern property boundary.



Photo 2. View to the south of the subject wetland taken from near the western end of the property at 3216 Sutton Road showing the presence of nitro- and hydrophytic vegetation indicative of a nutrient rich, water collecting site within the wetland complex.



Photo 3. View to the north taken from the southern side of the subject wetland showing an example of snags within the wetland that provide important feeding and nesting opportunities for a variety of bird and wildlife species.



Photo 4. Upland terrestrial portion of the site where proposed lots and new development will take place. Note disturbed nature and prevalence of invasive species. The branches of an English oak are showing at left of image.



Photo 5. View northeast taken from near the SRW along the northern property boundary showing the inappropriate cutting, stockpiling, and disposal of giant knotweed that threatens further spread of this provincially listed noxious weed.



Photo 6. View west taken from the existing driveway showing inappropriate cutting, stockpiling, and burning of giant knotweed that threatens further spread of this provincially listed noxious weed.

APPENDIX A - SCHEDULE A OF THE WEED CONTROL REGULATION OF THE BC WEED CONTROL ACT

Accessed from: <http://www.bclaws.ca/Recon/document/ID/freeside/10_66_85>

Schedule A

[en. B.C. Reg. 156/93, s. 2; am. B.C. Regs. 209/96, s. 1; 51/99; 189/2001; 143/2011.]

Part I – Provincial Weeds

Weeds classed as noxious within all regions of the province:

Annual Sow Thistle	(<i>Sonchus oleraceus</i>)
Bohemian Knotweed	(<i>Fallopia x bohemica</i>)
Bur Chervil	(<i>Arthriscus caucalis</i>)
Canada Thistle	(<i>Cirsium arvense</i>)
Common Crupina	(<i>Crupina vulgaris</i>)
Common Reed	(<i>Phragmites australis</i> subspecies <i>australis</i>)
Common Toadflax	(<i>Linaria vulgaris</i>)
Dalmatian Toadflax	(<i>Linaria dalmatica</i>)
Dense-flowered Cordgrass	(<i>Spartina densiflora</i>)
Diffuse Knapweed	(<i>Centaurea diffusa</i>)
Dodder	(<i>Cuscuta</i> spp.)
English Cordgrass	(<i>Spartina anglica</i>)
Flowering Rush	(<i>Butomus umbellatus</i>)
Garlic Mustard	(<i>Allaria petiolata</i>)
Giant Hogweed	(<i>Heracleum mantegazzianum</i>)
Giant Knotweed	(<i>Fallopia sachalinensis</i>)
Giant Mannagrass/Reed Sweetgrass	(<i>Glyceria maxima</i>)
Gorse	(<i>Ulex europaeus</i>)
Himalayan Knotweed	(<i>Polygonum polystachyum</i>)
Hound's-tongue	(<i>Cynoglossum officinale</i>)
Japanese Knotweed	(<i>Fallopia japonica</i>)
Jointed Goatgrass	(<i>Aegilops cylindrica</i>)
Leafy Spurge	(<i>Euphorbia esula</i>)

Milk Thistle	(<i>Silybum marianum</i>)
North Africa Grass	(<i>Ventenata dubia</i>)
Perennial Sow Thistle	(<i>Sonchus arvensis</i>)
Purple Loosestrife	(<i>Lythrum salicaria</i>)
Purple Nutsedge	(<i>Cyperus rotundus</i>)
Rush Skeletonweed	(<i>Chondrilla juncea</i>)
Saltmeadow Cordgrass	(<i>Spartina patens</i>)
Scentless Chamomile	(<i>Matricaria maritima</i>)
Smooth Cordgrass	(<i>Spartina alterniflora</i>)
Spotted Knapweed	(<i>Centaurea maculosa</i>)
Tansy Ragwort	(<i>Senecio jacobaea</i>)
Velvet Leaf	(<i>Abutilon theophrasti</i>)
Wild Oats	(<i>Avena fatua</i>)
Yellow Flag Iris	(<i>Iris pseudacorus</i>)
Yellow Nutsedge	(<i>Cyperus esculentus</i>)
Yellow Starthistle	(<i>Centaurea solstitialis</i>)

Part II – Regional Weeds

The following additional weeds listed are designated as noxious weeds within the boundaries of the corresponding regional districts:

Blueweed (<i>Echium vulgare</i>)	Cariboo, Central Kootenay, Columbia-Shuswap, East Kootenay, Okanagan-Similkameen, Thompson-Nicola
Burdock (<i>Arctium</i> spp.)	Bulkley-Nechako, Cariboo, Columbia-Shuswap, Fraser-Fort George, Kitimat-Stikine, North Okanagan, Okanagan-Similkameen, Peace River, Thompson-Nicola
Cleavers (<i>Galium aparine</i>)	Peace River
Common Bugloss (<i>Anchusa officinalis</i>)	Kootenay-Boundary
Common Tansy (<i>Tanacetum vulgare</i>)	Bulkley-Nechako, Central Kootenay, Columbia-Shuswap, East Kootenay, North Okanagan
Field Scabious (<i>Knautia arvensis</i>)	Bulkley-Nechako, Kootenay-Boundary, Thompson-Nicola
Green Foxtail (<i>Setaria viridis</i>)	Peace River
Hoary Alyssum (<i>Berteroa incana</i>)	Kootenay-Boundary
Hoary Cress (<i>Cardaria</i> spp.)	Columbia-Shuswap, North Okanagan,

	Thompson-Nicola
Kochia (<i>Kochia scoparia</i>)	Peace River
Marsh Plume Thistle (<i>Cirsium palustre</i>)	Bulkley-Nechako, Fraser-Fort George
Meadow Knapweed (<i>Centaurea pratensis</i>)	Columbia-Shuswap
Night-flowering catchfly (<i>Silene noctiflora</i>)	Peace River
Orange Hawkweed (<i>Hieracium aurantiacum</i>)	Bulkley-Nechako, Cariboo, Central Kootenay, Columbia-Shuswap, East Kootenay, Thompson-Nicola
Oxeye Daisy (<i>Chrysanthemum leucanthemum</i>)	Cariboo, North Okanagan, Peace River, Thompson-Nicola
Perennial Pepperweed (<i>Lepidium latifolium</i>)	East Kootenay, Thompson-Nicola
Plumeless Thistle (<i>Carduus acanthoides</i>)	Central Kootenay
Puncturevine (<i>Tribulus terrestris</i>)	Okanagan-Similkameen
Quackgrass (<i>Agropyron repens</i>)	Peace River
Russian Knapweed (<i>Acroptilon repens</i>)	North Okanagan
Russian Thistle (<i>Salsola kali</i>)	Peace River
Scotch Thistle (<i>Onopordum acanthium</i>)	North Okanagan
Sulphur Cinquefoil (<i>Potentilla recta</i>)	Columbia-Shuswap, North Okanagan, Okanagan-Similkameen, Thompson-Nicola
Tartary Buckwheat (<i>Fagopyrum tataricum</i>)	Peace River
White Cockle (<i>Lychnis alba</i>)	Peace River
Wild Chervil (<i>Anthriscus sylvestris</i>)	Fraser Valley
Wild Mustard (<i>Sinapsis arvensis</i>)	Peace River

Wedler Engineering LLP
211-2459 Cousins Avenue
Courtenay, BC V9N 3N6



November 6, 2017

File Ref: V18-0309/A

Village of Cumberland
2673 Dunsmuir Avenue
Cumberland, BC V0R 1S0

Attention: Joanne Rees, Planner

**Reference: Proposed 3 Lot Strata Subdivision - 3216 Sutton Road, Cumberland, BC
Hydrology and Stormwater Management Report**

As requested by the Village of Cumberland in their correspondence to our client, dated September 5, 2017, this letter is intended to fulfill the requirement for "A completed Stormwater Management Plan".

The following requirements relevant to hydrology and stormwater management were listed in the Development Permit (DP) checklist attached to the letter:

- *Examine the impact of the proposed development on the soils, vegetation, watercourses, wildlife, and hydrology in all restricted development and buffer zones; and provide development pattern and servicing recommendations to minimize these impacts.*
- *Examine pre-development water quality and quantity on the site and provide mitigation and enhancement strategies to maintain pre-development water quality and quantity for the restricted development zones and buffer areas.*
- *Examine the impact of the proposed development on the larger watershed area(s) including watercourses, habitat connectivity, water quality and quantity upstream and downstream, and possible cumulative hydrological impacts that may result; and provide development pattern and servicing recommendations to minimize them.*
- *Manage rainwater in accordance with the Water Balance Model or the most recent integrated watershed management or rainwater policy and design manual. This includes managing rainwater on site and maintaining pre-development drainage flows.*

The "Water Balance Model" is an online tool for determining the impacts of certain stormwater management practices on the stormwater performance of a proposed development. From the Water Balance Model Website:

The web-based "Water Balance Model powered by QUALHYMO" integrates the site with the watershed and the stream. This scenario comparison tool underpins Beyond the Guidebook, a provincial initiative to advance implementation of green infrastructure policies and practices throughout British Columbia.

As such, the "Water Balance Model" does not, in itself, present any best management practices, being simply a tool for assessing the impact of said practices. Therefore, the "Beyond the Guidebook" publication is referenced in the preparation of this letter.

"Beyond the Guidebook 2010: Implementing a New Culture for Urban Watershed Protection and Restoration in British Columbia" does not include individual project site solutions or guidelines. Rather, it details how a greater policy shift can be achieved to greener infrastructure and better stream health in the receiving waters of urban centres. This publication does reference Department of Fisheries and Oceans Guidelines for stream health and environmental protection. Furthermore, it references a 2008 publication "Beyond the Guidebook: The New Business as Usual – Create Liveable Communities and Protect Stream Health – Establish Watershed-Specific Runoff Capture Performance Targets". This publication, per its title, focuses on watershed level targets, and provides little guidance as to site specific goals, beyond reducing runoff, and limiting post-development flows to pre-development flows.

Finally, the "Beyond the Guidebook" publication references a June 2008 publication "Beyond the Guidebook: The New Business as Usual – Create Liveable Communities and Protect Stream Health – Rainwater Management: An Introduction to the Guidebook for British Columbia". This publication does list performance targets that are applicable to a site specific design.

The following measures are recommended in the June 2008 publication:

- *Rainfall Capture - keep rain on site by means of 'rainfall capture' measures such as rain gardens and infiltration soakaways*
- *Runoff Control - delay overflow runoff by means of detention storage ponds which provide 'runoff control'*
- *Flood Mitigation – reduce flooding by providing sufficient hydraulic capacity to 'contain and convey'*

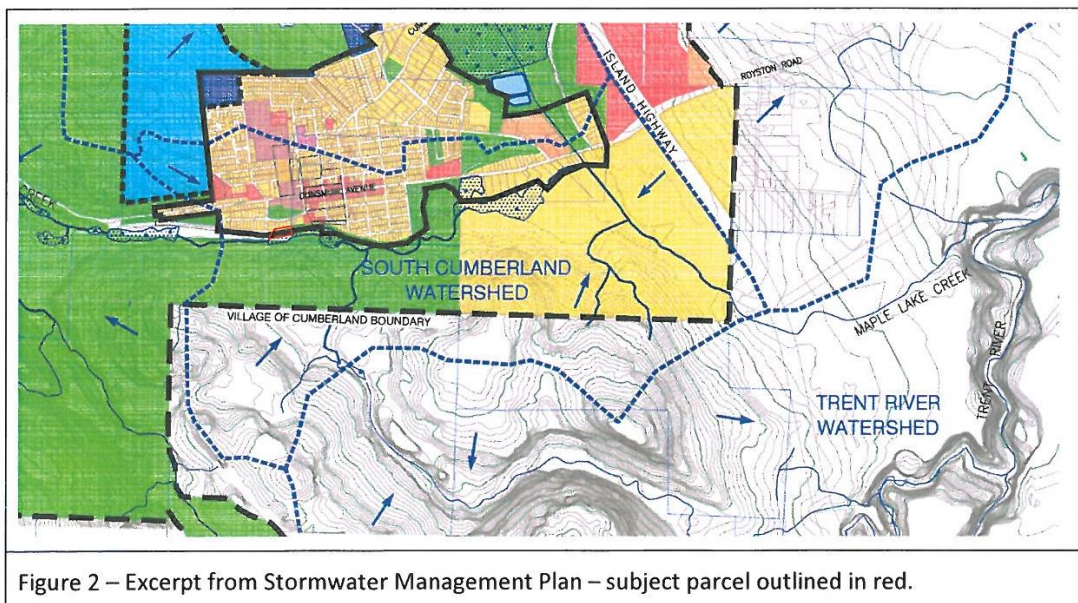
As such, this report will address on-site rainfall capture and some run-off control for the subject property in order to minimize the impacts from the proposed development.

Pre-Development Site Condition and Hydrology

The parcel area is approximately 0.4 Ha in size, including the panhandle at the west end of the lot. Rain falling on the site would be absorbed to the capacity of the in-situ soils, and then sheet flow off into the wetland area to the south. Water in this wetland flows east, eventually being conveyed to Maple Lake Creek, and then the Trent River. Surficial geology consists of fluvial sediments (sand and gravel) which is typical of this area. Figure 1 is an excerpt from the Vancouver Island Surficial Map produced by the Ministry of Environment.

The site is contained within the catchment of the "South Cumberland Watershed" per the 2010 Stormwater Drainage Master Plan. Figure 2 shows the subject parcel relative to the larger sub-catchments of the Village and surrounding area. The total area of the catchment is +/- 520 ha, with 350 ha of the area within Village limits. 95 Ha of that area is settled urban and sub-urban lands within the Village core. Figure 3 shows the subject parcel in relation to the smaller sub-catchments in the Village.





Klassen | Stormwater Management-3 Lot Strata Subdivision
November 6, 2017

File Ref: V18-0309/A

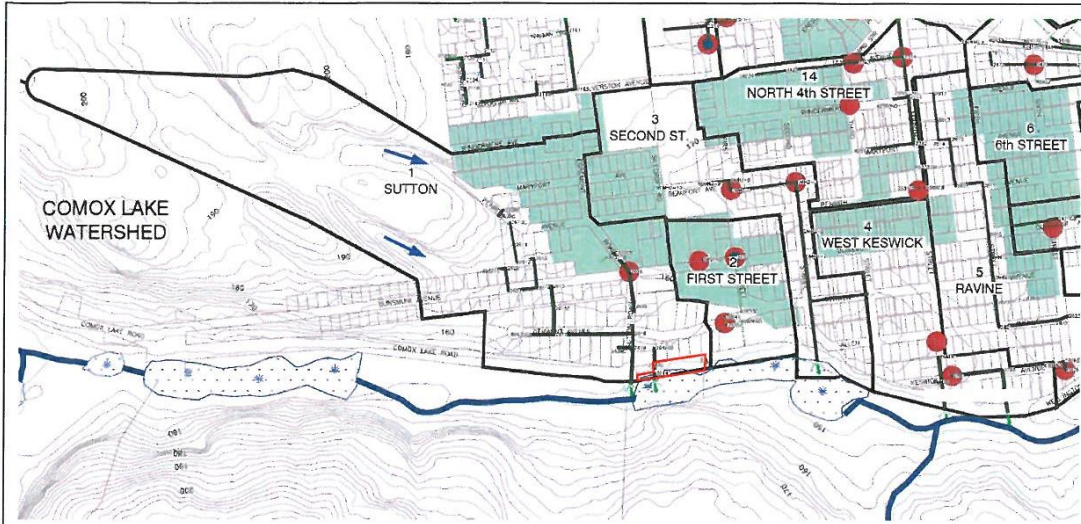


Figure 3 – Excerpt from Stormwater Management Plan – subject parcel outlined in red.

The site was developed to its current state in the late 1990's. Historical aerial photos were reviewed to determine when works on the site were completed. Figure 2 presents 4 historical aerial photos demonstrating the development work over time.

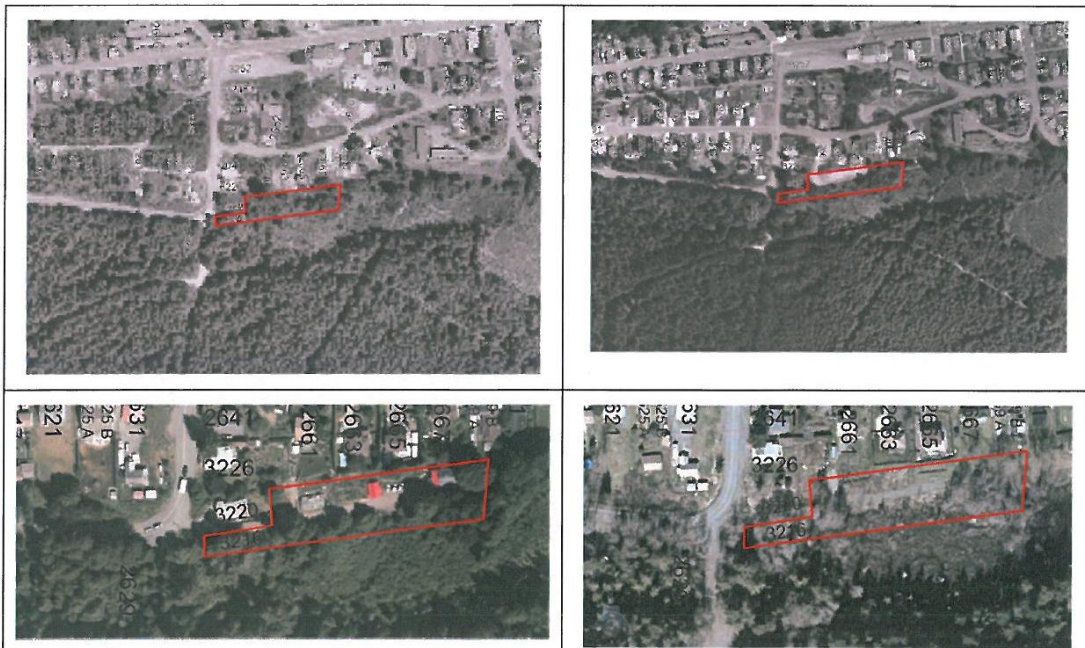


Figure 4 – Historical aerial photos. Top left is 1994, top right is 1996. Bottom right is 2004. Bottom left is 2012. Subject parcel outlined in red.



Schedule E Stormwater Report

Klassen | Stormwater Management-3 Lot Strata Subdivision
November 6, 2017

File Ref: V18-0309/A

Two distinct pre-development conditions are examined for the purpose of comparison: the site as it was prior to any clearing, and the site as it is in its current state.

Per Figure 4 above, the site was undeveloped in any way prior to 1996. At that time, the site would have had a runoff coefficient (C) of 0.1¹. Due to the size of the property relative to the proposed development, a weighted C factor has been calculated using the impermeability of the distinct areas of the site assuming 0.9 for buildings and hard surfaces, 0.6 for gravel, and 0.1 for undeveloped / forested areas. This approach results in a runoff coefficient of 0.27 for the property in its current state.

The runoff from the site has been calculated using the rational method². Time of concentration (T_c) is estimated using the "Airport Method". Prior to any development works being completed on this site, the T_c would have been 21.74 minutes. In the current condition, T_c would be 17.97 minutes.

The 2 year, 5 year, and 25 year storm recurrence intervals have been calculated using the Puntledge IDF curve. The pre-development and current peak flow generated by the site are laid out in Table 1 below.

	Tc	I2	I5	I25	C	A	Q2	Q5		Q25	
Condition	minutes	mm/hr	mm/hr	mm/hr		ha	m³/s	l/s	m³/s	l/s	m³/s
Pre-dev	21.74	17	29	46	0.10	0.40	0.0019	1.89	0.0032	3.23	0.0051
Current	17.97	18	30	50	0.27	0.40	0.0055	5.49	0.0092	9.15	0.0153
Post-dev	16.74	19	31	52	0.33	0.40	0.0070	6.99	0.0114	11.40	0.0191

Table 1: Rational Method Peak Flow Calculations

Post-Development Site Conditions and Hydrology

Table 1 also includes the peak flows for the post development state of the site based on the plans for the strata subdivision. Figure 5 is a site plan showing the proposed two new houses to be added after subdivision.

Two new structures will be added, however minimal additional hard surfacing is proposed and the driveway will remain gravel. After the construction of the new houses, the runoff coefficient has been calculated as increasing to 0.33. The only runoff source of concern would be roof leaders from the proposed structures. Otherwise, other than a relatively small decrease in T_c and a corresponding increase in total flow (5.49 l/s to 6.99 l/s for a 5 year recurrence interval storm), the stormwater runoff patterns for this site will be largely unchanged.

When reviewing this site it is important to consider the impact on the adjacent wetland from existing Village stormwater outfalls at the west end of the subject parcel. These outfalls direct storm runoff flows many orders of magnitude greater than what the subject parcel will when the development is completed. As such, the changes proposed to the subject parcel will have very minimal impacts on the "larger watershed area(s) including watercourses, habitat connectivity, water quality and quantity upstream and downstream..." and furthermore there will be minimal "...cumulative hydrological impacts".

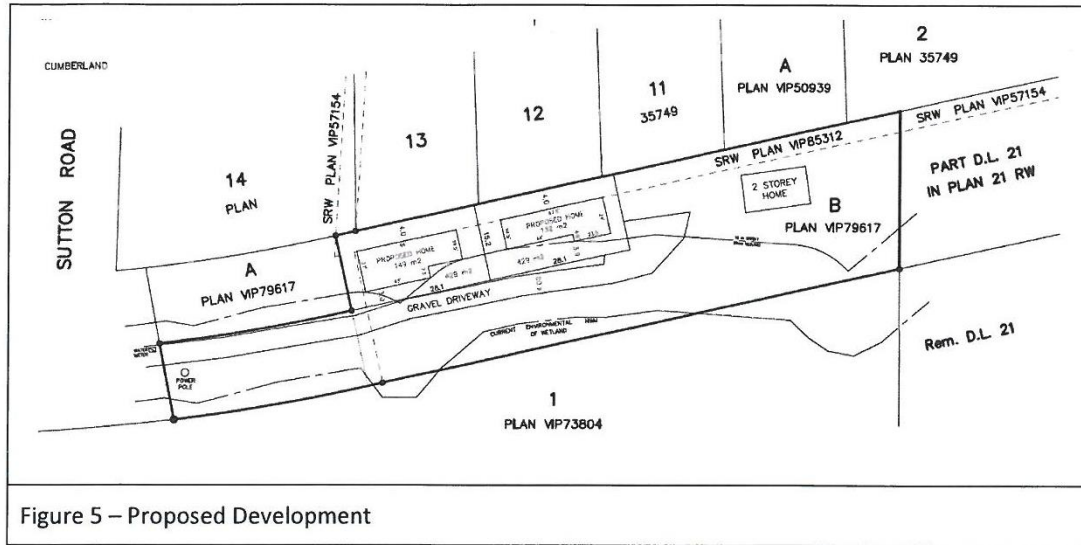
¹ MMCD "Design Guidelines 2014", 4.7.1 Runoff Coefficients, "Woodlands".

² MMCD "Design Guidelines 2014", 4.7 – Rational Method



Klassen | Stormwater Management-3 Lot Strata Subdivision
November 6, 2017

File Ref: V18-0309/A



Proposed Runoff Mitigation Strategies

The following strategies are recommended for mitigating the increase in runoff from this site after the proposed subdivision is completed:

- All rain water leaders from existing and proposed structures be drained to in ground soak-aways or "rock pits".
- The gravel driveway have a french drain built along the south side to intercept and infiltrate surface flows from most storms (up to the 1 in 2 year recurrence interval, which would account for 90% of storm runoff in any given year).

The above facilities have been sized using the modified rational method. This methodology estimates the volumetric difference between the pre-development storm hydrograph and an allowable release rate. The total volume of detention needed is assigned to each of the three structures (30% of the total each) with the remaining 10% assigned to the French drain proposed to run along the side of the driveway.

Using the pre-development flow rate as a release rate, a detention volume of 9.18 m³ is required to maintain flows at the pre-development level once all site development is complete. This would equate to 2.75 m³ for each of the three structures roof water leaders and 0.92 m³ for the driveway French drain. The driveway side French drain can be a simple rock lined ditch with rock to the surface. The trench should be a maximum of 0.3 m deep by 0.3 m wide, and be constructed as shown in Figure 6.

Roof water leader rock pits should be as detailed in Figure 7. Overflow should be directed to the driveway-side French drain, and then overland to the wetland, as this is consistent to how the site would respond pre-development, with runoff flowing overland once the in-situ soils were saturated and any small depression storage in the prior wooded area full. Where overflow pipes connect to the French drain, they will be tee'd into perf pipe running in the bottom of the trench 2 m either side of the connection point.



Klassen | Stormwater Management-3 Lot Strata Subdivision
November 6, 2017

File Ref: V18-0309/A

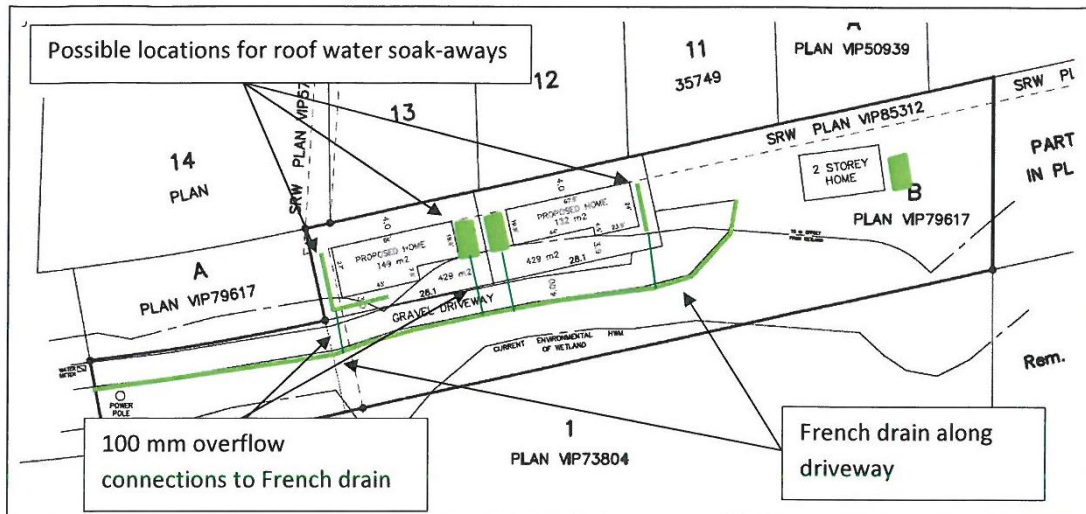


Figure 6 – Layout of Stormwater Detention Facilities – final location / sizing for roof water soak-aways to be determined at building permit. The soak-away for the existing house will have to overflow on the surface

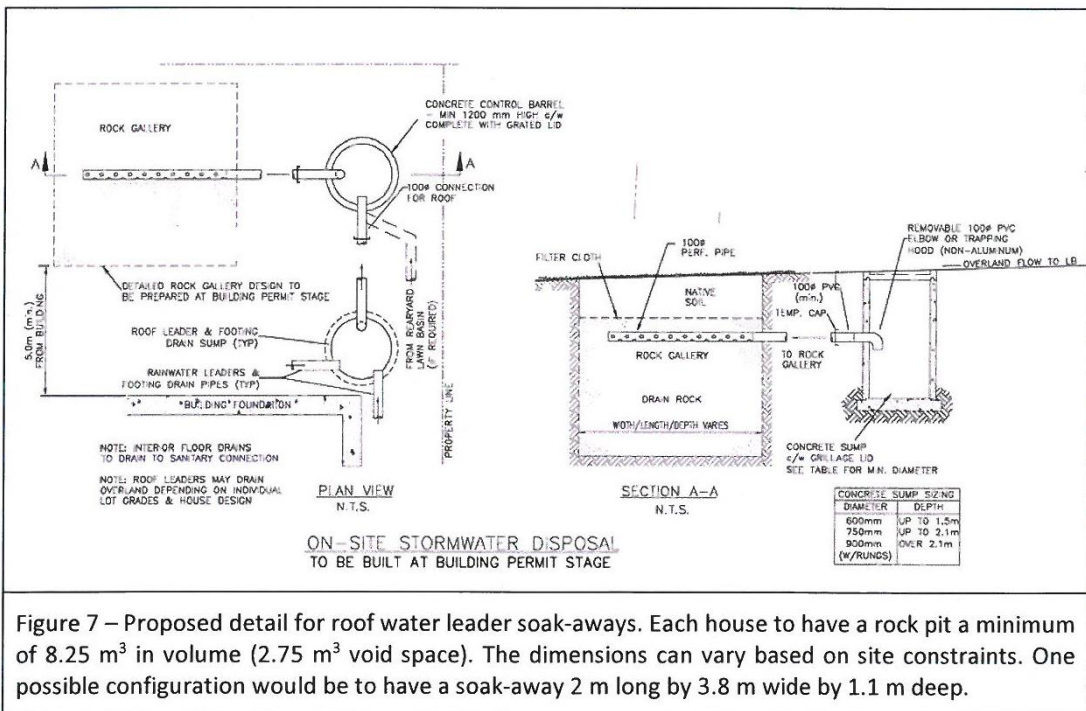


Figure 7 – Proposed detail for roof water leader soak-aways. Each house to have a rock pit a minimum of 8.25 m³ in volume (2.75 m³ void space). The dimensions can vary based on site constraints. One possible configuration would be to have a soak-away 2 m long by 3.8 m wide by 1.1 m deep.

Proposed erosion and sediment control measures for during construction

The following measures are recommended for the construction stage of any possible development of the property:

- Construct permanent or temporary fencing around sensitive features and their buffers.
- Retain as much natural vegetation as possible. Minimise the size of the cleared area required for construction.
- Prevent any disturbance within the root zone (drip line) of established trees.
- Retain the natural soils and put them back onsite during landscaping.
- Reduce soil compaction by avoiding machinery use except where necessary.
- Cut-off potentially sediment laden surface water with interception ditches or compost filled geotextile tubes.
- Build and maintain a sedimentation pond that captures all run-off from cleared areas.
- Cover any areas that will be left unplanted with straw to reduce soil stripping.
- Stage construction and stripping to avoid having large areas of the site excavated.

The details of the measures that will be employed, and how they would be staged, will depend on the form and nature of eventual development. A detailed Erosion and Sediment Control Plan should be prepared with any building permit submissions for the property.



Klassen | Stormwater Management-3 Lot Strata Subdivision
November 6, 2017

File Ref: V18-0309/A

Conclusion

The following requirements are addressed by this report:

- *Examine the impact of the proposed development on the soils, vegetation, watercourses, wildlife, and hydrology in all restricted development and buffer zones; and provide development pattern and servicing recommendations to minimize these impacts.*
 - Impacts on existing hydrology at the macro level are minimal. Impact at the micro / site level can be easily mitigated as described in this report.
- *Examine pre-development water quality and quantity on the site and provide mitigation and enhancement strategies to maintain pre development water quality and quantity for the restricted development zones and buffer areas.*
 - Given the small size of developed area compared to lot size and upstream sources of water conveyed to the adjacent wetland, water quality issues from this site are considered minimal, as are quantity impacts on the receiving waters. Calculations of pre-development and current flow rates have been provided.
- *Examine the impact of the proposed development on the larger watershed area(s) including watercourses, habitat connectivity, water quality and quantity upstream and downstream, and possible cumulative hydrological impacts that may result; and provide development pattern and servicing recommendations to minimize them.*
 - Impacts on the larger watershed area are minimal given the small size of the subject parcel in comparison to the overall watershed. The location of this parcel immediately downstream of storm outfalls for areas of the Village much larger in size than this parcel is an important factor to consider when assessing any larger impact given the small amount of flow from the site.
- *Manage rainwater in accordance with the Water Balance Model or the most recent integrated watershed management or rainwater policy and design manual. This includes managing rainwater on site and maintaining pre-development drainage flows.*
 - Onsite stormwater detention and construction stage erosion and sediment control measures are recommended.

As such, all impacts on water quality and quantity as a result of the proposed strata subdivision and addition of two houses to the subject property can be easily mitigated.

Yours truly,

Wedler Engineering LLP

Per:



Andrew Gower, FEC, P.Eng., PE, CCA
Partner • Project Engineer
agower@wedler.com

CC: Rob Crisfield, Village of Cumberland; Ellen Klassen (all via email)





Corporation of the
Village of Cumberland

**DEVELOPMENT
VARIANCE PERMIT**

TO: Ellen Strong Klassen

OF: PO Box 628, Cumberland, BC V0R 1S0

This Development Variance Permit (2017-10-DV) is issued subject to compliance with all of the bylaws of the Village of Cumberland applicable thereto, except as specifically varied or supplemented by this permit for the purposes of creating a larger building envelope for a two lot bare land strata subdivision.

1. This Development Variance Permit applies to and only to those lands within the Village of Cumberland described below, and any and all buildings, structures and other development thereon:

Legal Description: Lot B, District Lot 24, Nelson District, Plan VIP79617 (to be applicable to and registered on the new lots only.)

Folio: 516 02500.030 **PID:** 026-428-679

Civic Address: 3216 Sutton Road

2. The land described herein shall be developed strictly in accordance with the following terms and conditions and provisions of this Permit: The Zoning Bylaw No. 1027, 2016 be varied as follows:

- a) Section 7.1(5) Maximum Permitted Lot Coverage:40%
- b) Section 7.1(6) Principal Setbacks, Minimum, Front:1.2metres;
Section 7.1(6) Principal Setbacks, Minimum, Sides:1.2metres;
Section 7.1(6) Principal Setbacks, Minimum, Rear:4.0metres;
- c) Section 7.1(7) Accessory Setbacks, Minimum, Front:1.2metres;
Section 7.1(7) Accessory Setbacks, Minimum, Sides:1.2metres;
Section 7.1(7) Accessory Setbacks, Minimum, Rear:4.0metres;

for the building envelopes as shown on the attached drawing as Schedule A to this Permit.

3. **Security**

None

4. **Expiry**

Subject to the terms of the permit, if the Owner of this Development Variance Permit does not substantially start any construction with respect to which the permit was issued within two years after the date it is issued, the permit lapses.

5. **Timing and Sequencing of Development**

None

6. **List of Reports or Plans attached as Schedules**

Site drawing.

7. **Contaminated Sites Regulation**

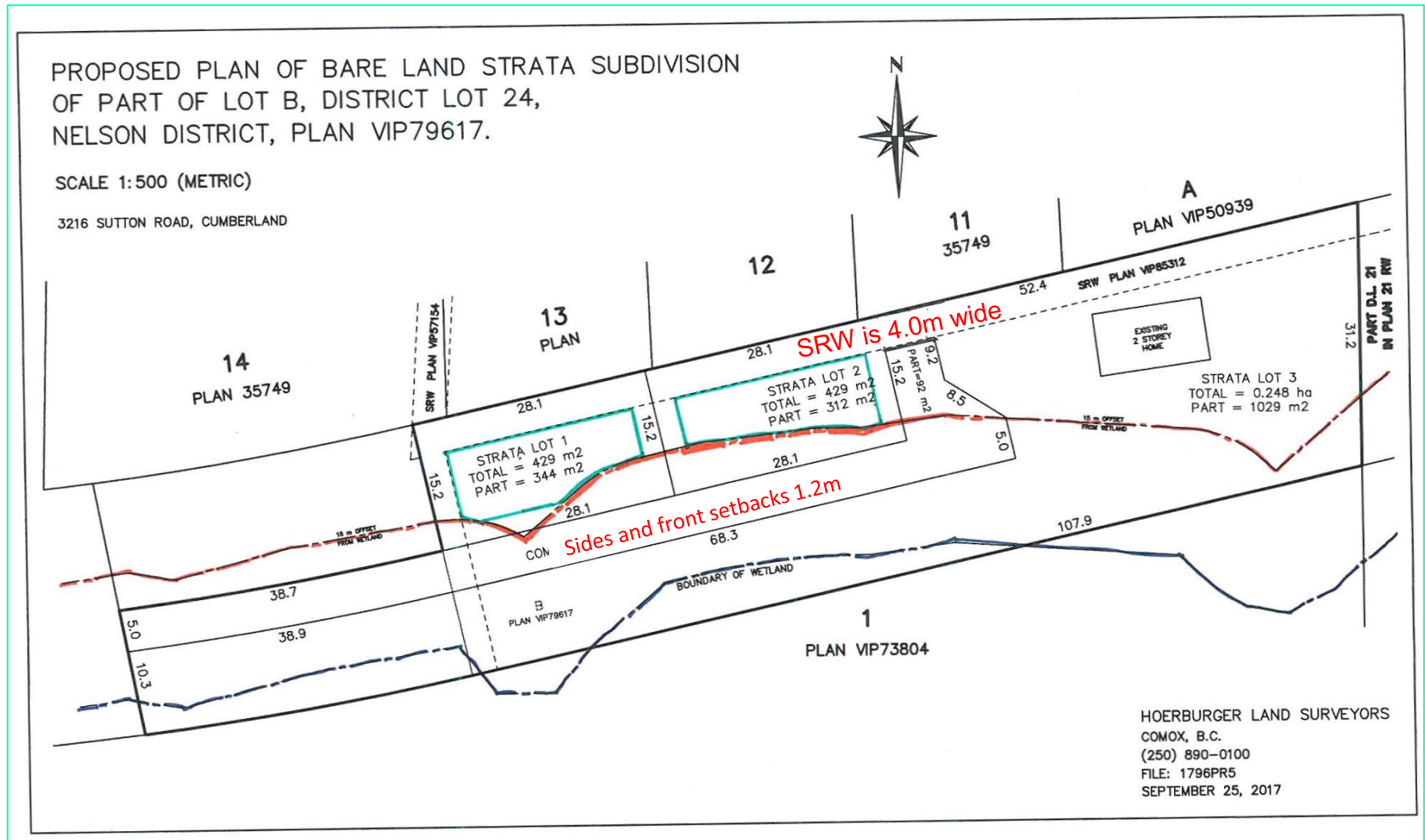
This permit is issued pursuant to the requirements of the *Environmental Management Act*, whereby the Owner has completed a "Site Declaration" for the subject property.

8. This Permit is **not** a Building Permit.

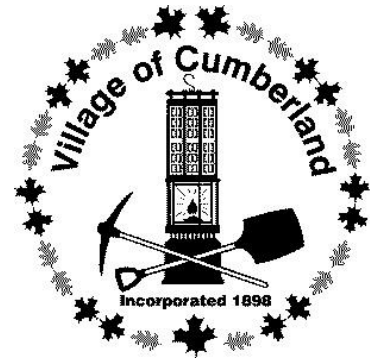
CERTIFIED as the **DEVELOPMENT VARIANCE PERMIT** issued by resolution of the Council of the Corporation of the Village of Cumberland on ____, 2018 and granted on ____, 2018.

Corporate Officer

Schedule A – Site Drawing



COUNCIL REPORT



REPORT DATE: February 7, 2018
MEETING DATE: February 13, 2018

TO: Mayor & Council
FROM: Judith Walker, Senior Planner
SUBJECT: Cumberland United Church & Heritage Designation

RECOMMENDATION

- i) THAT Council receive the “Cumberland United Church & Heritage Designation Report” dated February 7, 2018; and
- ii) THAT Council direct staff to develop a Statement of Significance as the first step in proceeding with potential Heritage Designation of the Church.

SUMMARY

The Cumberland United Church, at the corner of 1st Street and Penrith Avenue, was consecrated in 1895, as St. George’s Presbyterian Church. In 1925, the United Church of Canada was formed with the amalgamation of the Presbyterian, Methodist and Congregational Churches.

In January 2018, the BC Conference (United Church of Canada) listed the property for sale. Members of the community presented to Council on January 8, 2018, requesting consideration of heritage designation, citing the historical value and importance of the building to the community. Since then, staff has been in contact with the BC Conference property services who enquired about the Village’s interest in the heritage value of the church and any protective measures considered or in place.

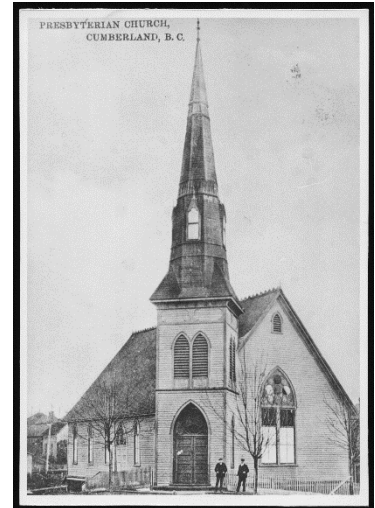
This report presents clarification on heritage designation and the Cumberland Community Heritage Register, in relation to the historical building, and the potential impacts to the proposed use of the building.

BACKGROUND

History

The original church, designed by James Carthew, was built in 1895 by Daniel McDonald, in a Gothic Revival style. The original spire was 96 feet high. The church has undergone many modifications in the past 100 years, including window alterations and removal of some of the

stained glass, entrance doors removed and subsequently replaced, the original cedar siding was replaced with stucco, the cedar shingle roof was replaced with metal roof, and the spire was truncated (1959). The original 1912 organ was replaced in 1952 with an organ from England that had been shipped around Cape Horn in 1878. This organ is still in the church. (All photos from Cumberland Museum & Archives)



Current Status



The church does not have any official heritage status. It is included in the Cumberland Heritage Inventory list (as #67) in the Heritage Management Plan (2016). This list was generated by the community to include many landscapes, buildings, events and people. In the Inventory, the church is listed as a landmark and community institution under the theme of “developing a village” and “creating a diverse community”. In the inventory, it is described as a historical building in the urban landscape.

The current zoning on the property is Public Assembly/Institutional (PA-1) which permits institutional use (includes religious use), recreational facility and community care facility. Accessory uses, under the PA-1 zone, include accessory buildings and structures and a residential use forming an integral part of the principal use. The Official Community Plan designates the property “Institutional”. The property is **not** within the Heritage Conservation Area (HCA) and a Heritage Alteration Permit (HAP) would not be triggered by an application for a building permit, at this time. The current church building trespasses onto the property to the east, but there is a registered easement on that property to permit the trespass.

Cumberland Community Heritage Register

Council directed staff to initiate a Community Heritage Register and the first three features have been registered with two more in process. The Heritage Commission, at their September 12, 2017 meeting, included the United Church on the list for consideration for the next round of features to be considered in 2018 for the Cumberland Community Heritage Register, however the United Church is not currently on the Cumberland Community Heritage Register.

A Community Heritage Register allows a local government to consider and, if necessary, undertake protective action such as temporarily withholding demolition permits and building and development approvals, ordering heritage inspections, or monitoring changes in properties through a licensing and permit application process for historic places listed on a Community Heritage Register. In order to use this ability, granted by *Division 4 – Temporary Protection* in the *Local Government Act*, a local government is required to approve a bylaw. Placing a feature on

the Community Heritage Register does not require consent of the owner, but they must be notified.

Heritage Designation

Heritage Designation in BC most often refers to a property protected by a municipal bylaw. The power to designate property as heritage is available to local government through *The Local Government Act*. Local government will first attempt to get consent of the owner for heritage designation, and many owners seek it especially if there is an opportunity of financial incentives. Once the property is designated by bylaw, **the owner must obtain a Heritage Alteration Permit in order to make alterations.**



Designation is mostly applied to the exterior of the buildings but since 1994 amendments to the provincial heritage legislation has made interior designations possible. Heritage BC states that “A building used is a building saved” which means that there needs to be some flexibility by local governments to enable reasonable and necessary changes while at the same time protecting the building’s essential heritage qualities.

The following is the Heritage Designation protection S. 611 of the LGA that outlines what the bylaw can accomplish:

611 (1) *A local government may, by bylaw, on terms and conditions it considers appropriate, designate real property in whole or in part as protected under this section if the local government considers that*

- (a) the property has heritage value or heritage character, or*
- (b) designation of the property is necessary or desirable for the conservation of a protected heritage property.*

(2) A heritage designation bylaw may do one or more of the following:

- (a) apply to a single property or to part of a property;*
- (b) apply to more than one property, including properties owned by different persons;*
- (c) apply to affixed interior building features or fixtures identified in the bylaw;*
- (d) apply to landscape features identified in the bylaw;*
- (e) establish policies or procedures regarding the provision of financial or other support for the conservation of the heritage property;*
- (f) specify types of alterations to the property that are allowed without a heritage alteration permit;*

(g) establish policies regarding the issuance of heritage alteration permits in relation to property covered by the bylaw.

(3) Except as authorized by a heritage alteration permit or allowed under subsection (2) (f), a person must not do any of the following:

(a) alter the exterior of a building or other structure protected under this section;

(b) make a structural change to a building or other structure protected under this section;

(c) move a building or other structure protected under this section;

(d) alter, remove or take an action that would damage an interior feature or fixture that is identified under subsection (2) (c);

(e) alter, remove or take an action that would damage a landscape feature that is identified under subsection (2) (d);

(f) alter, excavate or build on land protected under this section.

Council, in considering Heritage Designation of the United Church can consider what actions will not be permitted and what actions are exempted from the bylaw regulations. However the Statement of Significance (SOS) developed for the bylaw, including the character-defining elements (CDE), define what values will be documented in the bylaw. For example, in the Old Post Office, a character-defining element is the bench mark tablet placed by Geodetic Survey. It is not exempted from the bylaw.

The United Church of Canada

BC Conference is an administrative and service-delivery body of The United Church of Canada. The Conference provides staff, finances, advice, advocacy and programming resources to 10 presbyteries, 200+ congregations, hundreds of ministry personnel and numerous ministries in British Columbia including camps, social service agencies, housing and care facilities, chaplaincies, hospitals and educational centres.

The Executive Secretary of BC Conference is responsible for Conference budget and property. He is assisted by the Property Development Council, which is responsible for the purchase, holding, transfer and sale of Conference property.

Three Trustees act for the BC Conference for the Cumberland United Church. In the context of the United Church, a Trustee is an individual who, along with the other members of the Board of Trustees for a congregation, holds all of the property of that congregation for the use and benefit of the congregation as part of the United Church. The Trustees have a fiduciary duty to the United

Church but are restricted and governed by public statutes, boards, and courts of the United Church.

The Executive Secretary has been in touch with staff regarding the potential impacts of heritage designation on the sale price of the property. The Conference is not opposed to having a heritage designation, if it does not seriously influence the value of the sale price or excessively limit the opportunity for potential purchasers to utilize the property. The Conference is concerned of the perception, real or otherwise, of future restrictions on the re-development of the church or the property with such a designation.

Local governments can impose heritage designation on properties without the consent of the owner but under S. 613 *LGA*, the owner may request compensation if a reduction in the market value of the designated property is the result of the designation. If the local government and the owner cannot reach an agreement on the amount of the compensation, the *LGA* documents the process of arbitration to reach agreement.

It is up to the BC Conference to determine if a heritage designation on the building will affect the potential sale price. The BC Conference has a small team, The Property Resource Service, provided by Conference staff, a legal advisor, Colliers International consultants and other specialized consultants to examine the potential impact of the heritage designation on the property value. It is reasonable to expect that the BC Conference may request information on the contents of the draft heritage designation bylaw to better assess the potential impacts of the sale price, before agreeing to such a designation.

Potential Demolition

Current Status

Currently the church has no protection from demolition, either through a Heritage Designation Bylaw or by being on the Cumberland Community Heritage Register.

In order to proceed with demolition of the building, the owner would be required to submit a building permit application for demolition (\$100 application fee and \$100 for demolition permit, plus \$1500 deposit for damage to public infrastructure) from the Village. The permit must be approved by the Building Inspector. The building bylaw requires fencing and other safety measures in preparation for and during the demolition.

If Church is placed on Community Heritage Register, by Council Resolution

If Council directs staff to add the Cumberland United Church on the Community Heritage Register, an SOS is required in order to determine the heritage values of the building. If Council approves to include the church, with the SOS, on the Register, then demolition can be delayed until all other permits required by the owner are approved. Inclusion on the Register is not a protection from demolition, but only a delay while

the owner is required to meet any necessary approvals (i.e. Development Permit, Building Permit etc.) with respect to the alteration or redevelopment of the site. No other approvals can be withheld other than permits for demolition.

If Church has Heritage Designation by Bylaw

Once a property has been received Heritage Designation by bylaw, the owner must obtain a Heritage Alteration Permit (HAP) to make alterations to the building, including demolition. A local government may refuse to issue a HAP for an action that, in the opinion of the local government, would not be consistent with the purpose of the heritage protection of the property. For example, if the owner came forward with an HAP that requested removal of all the building except for the entrance tower, Council may not view that as acceptable heritage protection, and not grant the HAP. Without an approved HAP the Village cannot issue a building permit.

Next Steps

The realtor for the property has contacted staff relaying interest from prospective buyers. Staff has also been contacted by and met with interested parties. Prospective buyers are interested in the permitted uses of the current zoning, and possible rezoning opportunity to utilize the property for residential and/or other uses. Staff has commented to the BC Conference, the listing realtor and interested parties, that the community values the heritage significance of the United Church building. There is a time sensitivity any heritage consideration due to the fact that if the property sold, staff would be dealing with a new owner, who may or may not be supportive of a Heritage Designation for the building. As the property is currently listed for sale, it could sell before or during Council deliberations.

For Cumberland Community Heritage Register

If the Village of Cumberland proceeds with entering the church on the Register, staff would initiate the following steps:

1. Develop a Statement of Significance (Staff, Heritage Commission + heritage planner consultants for review);
2. Prepare report on approval for the Register for consideration by Council;
3. Council considers referring report to Heritage Commission;
4. Present report to Council, including the recommendations from Heritage Commission;
5. Council directs staff to proceed with the addition of the church to the Register
6. Staff follows LGA requirements for entering an addition to the Register

Estimated time lapse: 1-2 months

For Heritage Designation

If the Village of Cumberland proceeds with Heritage Designation, staff would initiate the following steps:

1. Develop a Statement of Significance (Staff, Heritage Commission + heritage planner consultants for review);
2. Prepare bylaw for consideration by Council;
3. Council considers referring draft bylaw to Heritage Commission;
4. Revise bylaw based on direction from Council, following the recommendations from Heritage Commission;
5. Present bylaw to BC Conference (United Church of Canada) for feedback;
6. Revisions based on Church feedback;
7. Present revised bylaw to Council;
8. Receive directions from Council on proceeding with designation or not;
9. If directed to proceed: proceed through steps as per *LGA S. 612, Heritage Designation Procedure*, including public hearing for the reading of the bylaw.

Estimated time lapse: 3-4 months

REFERRALS

Council may:

- a) Further to the section 5a of the *Advisory Planning Commission Bylaw No 999, 2014*, Council may wish to refer this report to the APC for their comments.
- b) Further to the section 8 of the *Corporation of the Village of Cumberland Heritage Commission Bylaw No. 824, 2006*, Council may wish to refer this report to the Heritage Commission for their comments.

Although Council may refer this report to either of the above noted Commission's, it is staff's recommendation that the report be referred to the Heritage Commission's next meeting scheduled for Monday March 5, 2018.

FINANCIAL IMPLICATIONS

There is no financial implications to this report. If Council directs staff to further investigate the United Church's interest in heritage designation and if this is agreed upon with the Village and the Church, additional staff time would be required to write and process the bylaw and refer to Commissions, as well as the costs to advertise and hold a public hearing. This is not accounted for in the 2018 work plan.

OPERATIONAL IMPLICATIONS

The review of Heritage Designation requests are part of the services provided by the Planning Department, but could bump other priorities in planning.

STRATEGIC OBJECTIVE

- Quality Infrastructure Planning and Development: Revitalize the historic Village commercial core
- Healthy Community: Support tourism through....heritage...

CONCURRENCE

Rob Crisfield, Manager of Operations 

OPTIONS

- THAT Council direct staff to develop a Statement of Significance as the first step in proceeding with potential Heritage Designation of the Church; or
- Any other action deemed appropriate by Council.

Respectfully submitted,


Judith Walker, Senior Planner


Sundance Topham Chief Administrative Officer

COUNCIL REPORT



REPORT DATE: February 7, 2018

MEETING DATE: February 13, 2018

TO: Chair and Members

FROM: Judith Walker, Senior Planner

SUBJECT: Environmental Protection Area
Development Permit – Coal Valley Estates Water Transmission Line

FILE:	2017-13-DP		
OWNER:	Coal Valley Estates		
AGENT:	McElhanney Consulting Services (Chris Durupt, P.Eng)		
PID:	003-634-264	FOLIO:	516 000394.545
LEGAL DESCRIPTION:	District Lot 24, Nelson District, Except Parts In Plans 21 RW, 522E, 3130, 3268, 4222, 4661, 4824, 4869, 6793, 6794, 11068, 12569, 13409, 13580, 13640, 14028, 15750, 23224, 19381, 19382, 19383, 20746, 21025, 22199, 23092, 23237, 23600, 23685, 24001, 24314, 24868, 25906, 26084, 26131, 26455, 26629, 26885, 27337, 27857, 29860, 30068, 30809, 32692, 35790, 36785, 35098, 50021, VIP64546 VIP65968, VIP65482, VIP67269, VIP71673 And Except Parcel A (DD 27356N) and Parcel B (DD M7897) And Except Parts In Plans VIP72020, VIP72021, VIP72022, VIP73804, VIP74156, VIP75434, EPP15708, EPP17313, EPP18594, EPP20118 AND EPP53358, EPP71001		
ZONE:	Mixed Use One (MU-1)	OCP DESIGNATION:	Residential

RECOMMENDATION

1. THAT Council receive the “Environmental Protection Area Development Permit – Coal Valley Estates Water Transmission Line” report dated February 7, 2018.
2. THAT Council grant the “Environmental Protection Area Development Permit – Coal Valley Estates Water Transmission Line” for property described as District Lot 24, Nelson District, Except Parts In Plans 21 RW, 522E, 3130, 3268, 4222, 4661, 4824, 4869, 6793, 6794, 11068, 12569, 13409, 13580, 13640, 14028, 15750, 23224, 19381, 19382, 19383, 20746, 21025, 22199, 23092, 23237, 23600, 23685, 24001, 24314, 24868, 25906, 26084, 26131, 26455, 26629, 26885, 27337, 27857, 29860, 30068, 30809, 32692, 35790, 36785, 35098, 50021, VIP64546 VIP65968, VIP65482, VIP67269, VIP71673 And Except Parcel A (DD 27356N) and Parcel B (DD M7897) And Except Parts In Plans VIP72020, VIP72021, VIP72022, VIP73804, VIP74156, VIP75434, EPP15708, EPP17313, EPP18594, EPP20118 AND EPP53358, EPP71001 to permit construction of a waterline substantially in compliance with the attached Development Permit.

SUMMARY

An application has been made for the installation of a subsurface water transmission line and temporary booster station.

Pursuant to the 'Official Community Plan Bylaw No. 990, 2014' the proposed development is subject to an Environmental Protection Area Development Permit (DPA #1), as it is located on a property which is identified as an Environmental Protection Area.

BACKGROUND

As part of the development of Coal Valley Estates Phase 7 subdivision, the Village has required that a water pressure booster station and a new water transmission main be installed from Dunsmuir/Egremont up to Phase 7 in Coal Valley Estates. The booster station is a temporary measure to be replaced by a permanent station at the corner of Dunsmuir and Sutton Roads. These works are necessary because the present supply could not meet adequate pressures to provide adequate fire flows during peak demand times.

Approximately half of this transmission main will be located on Coal Valley property at the end of Maryport/Penrith Roads (See the above subject property map). Generally, the construction will fall within the existing gravel road, future Penrith extension or within areas that have already been cleared.



Various assessments of the site have been completed to date. A Riparian Areas Regulation (RAR) assessment and report was initially completed during the rezoning of the property in 2007. Subsequent assessments determined that several identified waterways did not meet the definition of a stream under the RAR. In 2012 a letter was written by Strategic Natural Resource Consultants indicating that the waterways on the development property do not in fact trigger the RAR as they are non-fish bearing with extensive wetlands (including the Village stormwater and sanitary sewer discharge) downslope of the property.

All of the reports that were done for these lands were independently peer reviewed jointly by the Partnership of Ecofish Research and Latitude Conservation Solutions Company on behalf the Village. The Peer Review Memorandum dated January 11, 2018 verified that the work undertaken (see draft DP for the list) meet the current requirements of the EPA DPA#1, as long as the recommendations contained within their review are undertaken, and the memorandum is attached to the draft DP as Schedule B.

The following is the recommendations from EcoFish and Latitude regarding the application for these works and where they appear in the Development Permit.

EVR/ESA	Potential Impact	Mitigation	DP
Yew tree	Mortality of relatively uncommon tree	Fence perimeter of tree at drip line (or 1-3 times the height of the tree). The Yew tree is protected by covenant and for convenience the requirements of the Covenant are repeated in the DP conditions.	DP 2(b)
Breeding birds	Disturbance of nest or mortality of bird or its eggs	Work to be conducted in least risk window (January–March) or else appropriate mitigation to be proposed and implemented.	See DP 2(d)(ii)
Fish (Water quality)	Turbid water	Erosion and Sediment Control Plan to be followed. Qualified Professional (QP) (from Wacor) on site to verify proper installation of erosion and sediment control prior to construction. QP will monitor and ensure proper maintenance of erosion and sediment control measures weekly to ensure they are functioning as intended and adaptively manage, as necessary. The QP will provide biweekly reports McElhanney. If vegetation is removed within or in the immediate vicinity of the ditch then erosion and sediment control measure will be implemented to ensure that sediment interception is maintained in the short and long-term.	2(c)(i) and 2(d)(i)
Wetlands (Aquatic ESA to the south of works)	Wetland degradation	All work to occur outside a 30m buffer from the top of bank of the wetlands. Buffer of ESA to be flagged prior to construction so that boundary is maintained.	2(d)(ii)
Western Screech Owl	Sensory disturbance	No suitable nesting trees are in project footprint. There is also already lots of noise in the area. No mitigation required.	None
Steep slope >30%	Erosion and slope stability issues	Erosion and Sediment Control Plan to be followed. The QP on site to verify proper installation of erosion and sediment control prior to construction and to monitor and maintain erosion and sediment control measures weekly or during high precipitation events.	2(d)(i)

CITIZEN/PUBLIC RELATIONS IMPLICATIONS

As required by the Village’s Procedure Bylaw the applicants are required to place a sign on-site at the end of Penrith Avenue, advertise and hold a public meeting. These requirements must be met 10days prior to consideration by Council.

The applicants held their Neighbourhood Public Meeting on February 5th, 2018, and the results are attached. Four residents attended the meeting.

Pursuant to the requirements of the *Local Government Act*, notice of Council consideration of a Development Permit will be mailed or otherwise delivered to owners of adjacent properties a minimum of 10 days before the Council considers the application. Any comments received by staff after this report will be delivered “on table” to Council.

ADVISORY PLANNING COMMISSION RECOMMENDATIONS

The APC, at their February 6th, 2018 meeting passed the following motions:

1. “THAT the APC recommends to Council that installation of three artificial nest boxes are to be completed as part of the 2017-13-DP, in locations to be determined by the biologist”; and
2. THAT the Advisory Planning Commission recommend that Council grant the “Environmental Protection Area Development Permit – Coal Valley Estates Water Transmission Line” for property described as District Lot 24, Nelson District, Except Parts In Plans 21 RW, 522E, 3130, 3268, 4222, 4661, 4824, 4869, 6793, 6794, 11068, 12569, 13409, 13580, 13640, 14028, 15750, 23224, 19381, 19382, 19383, 20746, 21025, 22199, 23092, 23237, 23600, 23685, 24001, 24314, 24868, 25906, 26084, 26131, 26455, 26629, 26885, 27337, 27857, 29860, 30068, 30809, 32692, 35790, 36785, 35098, 50021, VIP64546 VIP65968, VIP65482, VIP67269, VIP71673 And Except Parcel A (DD 27356N) and Parcel B (DD M7897) And Except Parts In Plans VIP72020, VIP72021, VIP72022, VIP73804, VIP74156, VIP75434, EPP15708, EPP17313, EPP18594, EPP20118 AND EPP53358, EPP71001 to permit construction of a waterline substantially in compliance with the attached Development Permit, with the addition of the installation of three artificial nest boxes are to be completed as part of the 2017-13-DP, in locations to be determined by the biologist”.

ATTACHMENTS

1. Coal Valley Estates Water Transmission Line – Development Permit Summary of Public Information Meeting.
2. Development Permit 2017-13-DP which includes:
 - a) Schedule A - Map showing area of proposed works.
 - b) Schedule B - Covenant CA5403033 Yew tree and buffer;
 - c) Schedule C - *Lewkowich Geotechnical Engineering Ltd*, Geotechnical review 2006/2007;
 - d) Schedule D - Report from Ursus Environmental dated October 22, 2014 – Terrestrial Assessment for Remainder of Coal Valley Estates, Cumberland.
 - e) Schedule E - Report from McElhanney dated November 24, 2014 – Stormwater Management Plan and addendum dated March 21, 2016
 - f) Schedule F - *Strategic Natural Resource Consultants*, Aquatic Ecosystems Assessment letter January 31, 2017;

- g) Schedule G - *McElhanney Consulting Services Ltd (MCSL), Erosion and Sediment Control Plan dated January 10, 2018;*
- h) Schedule H - *Peer Review of the Development Permit Application for a Water Supply Line Installation in Phase 7 of Coal Valley Estates, Remainder DL 24, Nelson District as it pertains to DPA#1 dated January 11, 2018.*

CONCURRENCE

Rob Crisfield, Manager of Operations



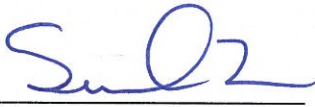
OPTIONS

1. Recommendation to Council to grant the Permit as attached; or
2. Recommendation to Council to deny the Permit as attached (must give reasons).

Respectfully submitted,



Joanne Rees
Planner



Sundance Topham
Chief Administrative Officer

February 6, 2018

Our File: 2211-46871-10

Ms. Judith Walker
Planning Department
Village of Cumberland
2673 Dunsmuir Avenue
Box 340, Cumberland, BC V0R 1S0

Dear Ms. Walker,

**COAL VALLEY ESTATES WATER TRANSMISSION LINE – DEVELOPMENT PERMIT
SUMMARY OF PUBLIC INFORMATION MEETING**

A public information meeting was held February 5, 2018, at the Cumberland Community School Library in support of the installation of the water transmission line for Coal Valley. The meeting was hosted by McElhanney staff members Bob Hudson, P. Eng. and Chris Durupt, P. Eng.

The project was advertised in the Record Newspaper on January 25, 2018 and notification was sent by mail as required. We have record of four residents in attendance and attach comments received.

Yours truly,

McELHANNEY CONSULTING SERVICES LTD.



Chris Durupt, P.Eng.
Project Engineer

Reviewed by:



Bob Hudson, P.Eng.
Branch Manager

Enclosure

CD/lbg

cc: Coal Valley Estates Joint Venture Ltd., Dave Atkinson, Ron Haan
Village of Cumberland, Joanne Rees

eEditions

Comox Valley Record, January 25, 2018



SHARE

BUDGET BLINDS

STYLE / SALES CONSULTANT

Love what you do? If you have a passion for interior decorating and love working with clients to help them create the look they desire, apply for this position for the Comox Valley. This is a full-time position with a competitive salary and benefits. The ideal candidate will have a degree in interior design or a related field and 2-3 years of experience in a similar role. Please send your resume and portfolio to: info@budgetblinds.com

Hair Stylist

Join our team at the new hair salon in the heart of the Comox Valley. We are looking for a talented hair stylist with 2-3 years of experience. We offer a competitive salary, benefits, and a flexible schedule. Please contact us at: [250-865-4460](tel:250-865-4460)

WINTER CLEAN-UPS

Get your property ready for winter with our professional cleaning services. We offer a wide range of services including snow removal, gutter cleaning, and more. Contact us today at: [250-865-4460](tel:250-865-4460)

GUIDE

Find everything you need for your business in our comprehensive guide. From local services to national brands, we have it all. Visit us at: www.comoxvalleyrecord.com/guide

CLASSIFIED ADS MEAN MORE BUSINESS FOR YOU!

Put your business in front of thousands of potential customers. Contact us at: [250-865-4460](tel:250-865-4460)

CAREER OPPORTUNITIES with Black Press

Join our team at Black Press. We are looking for talented individuals to join our growing team. Please send your resume to: hr@blackpress.com

NEIGHBOURHOOD MEETING

Join us for a community meeting to discuss the proposed development in the Comox Valley. The meeting will be held on February 1st at 7 PM. Please contact us at: [250-865-4460](tel:250-865-4460)

27 / 46

← → ↺ ↻ 🔍 📄

More eEditions you may be interested in:



COMMENT SHEET

**Public Information Meeting
For
Coal Valley Estates – Water Transmission Line**

**Development Permit
Neighbourhood Meeting – February 5, 2018**

Name & Address

[REDACTED]

[REDACTED]

Cumberland, B.C. -

Comments Welcome:

Thankyou for sharing this.
Looking forward to your future
developments. I enjoyed the
environmental & geotechnical
reports at the last council
meeting.



McElhanney

Lynn Gottmann

From: Chris Durupt
Sent: Wednesday, January 31, 2018 12:13 PM
To: [REDACTED]
Subject: RE: Coal Valley Estates -water transmission line

[REDACTED]

CVE has applied for a Development Permit to construct the proposed transmission main with in DP areas No. 1 Environmental Protection and No. 4 Wildfire Urban Interface. CVE is connected to the Village water supply. The transmission main, along with a boost station, will allow for a higher-pressure zone which will service the upper elevations of the development.

Chris,

Chris Durupt, P.Eng.
Project Engineer
McElhanney Consulting Services Ltd.
www.mcelhanney.com
495 Sixth Street | Courtenay BC V9N 6V4 T 250 338 5495 | C 250 897 6818 cdurupt@mcelhanney.com | My LinkedIn Profile

Connect with McElhanney: Facebook | Twitter | LinkedIn

-----Original Message-----

From: [REDACTED]
Sent: Wednesday, January 31, 2018 12:03 PM
To: Chris Durupt <cdurupt@mcelhanney.com>
Subject: Coal Valley Estates -water transmission line

Hi Chris,

I received a notice of CVE's neighbourhood meeting scheduled for Feb 5th. I would like a bit more information before the meeting [REDACTED]

Is CVE asking for an amendment to the DP areas No. 1 Environmental Protection and No. 4 Wildfire Urban Interface. If so, what exactly would be the amendment.

Where does CVE currently get their water- I was under the impression that they were supplying their own water.

Thank you,
[REDACTED]

--

This email was checked by Sophos for known Malware. Be on guard for new exploits. Protect your credentials.



Corporation of the
Village of Cumberland

DEVELOPMENT PERMIT

TO: Coal Valley Estates Ltd. Inc. No BC0708223

AGENT: McElhanney Consulting Services Ltd.

OF: #2 45953 Airport Road, Chilliwack, BC V2P 1A2

This Development Permit (2017-13-DP) is issued subject to compliance with all of the bylaws of the Village of Cumberland applicable thereto, except as supplemented by this permit for the purposes of the installation of a subsurface water transmission line and temporary booster station.

1. This Development Permit applies to and only to those lands within the Village of Cumberland described below and only for the purpose of the waterline, and that future Development Permits will be required:

Legal Description: That Part of District Lot 24, Nelson District, Except Parts in Plans 21RW, 522E, 3130, 3268, 4222, 4661, , 4824, 4869, 6793, 6794, 11068, 12569, 13409, 13580, 13640, 14028, 15750, 23224, 19381, 19382, 19383, 20746, 21025, 22199, 23092, 23237, 23600, 23685, 24001, 24314, 24868, 25906, 26084, 26131, 26455, 26629, 26885, 27337, 27857, 29860, 30068, 30809, 32692, 35790, 36785, 35098, 50021, VIP64656, VIP65968, VIP65482, VIP67269, VIP71673, and except Parcel A (DD 27356N) and Parcel B (DD M7897) and except Parts in Plans VIP72020, VIP72022, VIP73804, VIP74156, VIP75434, EPP15708, EPP17313, EPP18594, EPP20118, EPP53358, and EPP71001 as shown on the attached Schedule A.

Folio: 516 000394.545 **PID:** 003-634-264

Civic Address: No property address assigned

2. The land described herein shall be developed strictly in accordance with the following terms and conditions and provisions of this permit:
 - a) The area of works is limited to that area shown on the attached Schedule A.
 - b) The Yew tree identified in the report by Ursus Environmental dated October 22, 2014 – Terrestrial Assessment for Remainder of Coal Valley Estates, Cumberland has been protected by Covenant CA5403033 (attached as Schedule B) which requires the landowner to retain and protect the Yew tree. In part, the Covenant protects the tree and provides a buffer of 5.0metres outward from the dripline (the edges of the tree) with temporary or permanent fencing before working the in the vicinity.

- c) Required before Permit is granted:
 - i) An Environmental Consultant (EC) is to be retained by the contractor to review and re-design, as necessary, of all erosion and sediment control measures to be put in place during construction. The name of the EC and confirmation of adequacy of the Sediment and Erosion Control Plan, attached to this Permit as Schedule F will be provided to the Village. If additional vegetation is to be removed within or in the immediate vicinity of the ditch, it will be identified and the erosion and sediment control measures will be extended to the area to ensure that sediment interception is maintained in the short and long-term.
- d) Required after Permit is issued:
 - i) The Environmental Consultant (EC) is to review the site a minimum of one day per week as well as during any days of significant precipitation. Reporting from said site reviews is to be provided to the Village on a bi-weekly basis (minimum reporting). Any changes to the erosion & sediment control measures, as directed by the EC, are to be immediately communicated to the Engineer of Record and the Village.
 - ii) To prevent disturbance of nesting birds or mortality of bird or its eggs these works to be conducted in least risk window (January–March) or else appropriate mitigation to be proposed and implemented.
 - iii) All work to occur outside a 30m buffer from the top of bank of the wetlands. Buffer of ESA to be flagged prior to construction so that boundary is maintained.
 - iv) Installation of 3 artificial nest boxes for the Blue-listed Western Screech Owl, installed within the proposed greenway in the southern part of the property, with the 3 locations to be determined by the biologist.
- e) All other development activities may require additional development permits, in accordance with applicable laws and bylaws.

3. **Security**

None

4. **Expiry**

Subject to the terms of the permit, if the Owner of this Development Permit does not substantially start any construction with respect to which the Permit was issued within 2 years after the date it is issued, the Permit lapses.

5. **Timing and Sequencing of Development**

To prevent disturbance of nesting birds or mortality of bird or its eggs these works to be conducted in least risk window (January–March) or else appropriate mitigation to be proposed and implemented.

6. **List of Reports or Plans attached as Schedules**

- a) Schedule A - Map showing area of proposed works.
- b) Schedule B - Covenant CA5403033 Yew tree and buffer;
- c) Schedule C - *Lewkowich Geotechnical Engineering Ltd*, Geotechnical review 2006/2007;
- d) Schedule D - Report from Ursus Environmental dated October 22, 2014 – Terrestrial Assessment for Remainder of Coal Valley Estates, Cumberland.
- e) Schedule E - Report from McElhanney dated November 24, 2014 – Stormwater Management Plan and addendum dated March 21, 2016
- f) Schedule F - *Strategic Natural Resource Consultants*, Aquatic Ecosystems Assessment letter January 31, 2017;
- g) Schedule G - *McElhanney Consulting Services Ltd (MCSL)*, Erosion and Sediment Control Plan dated January 10, 2018;
- h) Schedule H - *Peer Review of the Development Permit Application for a Water Supply Line Installation in Phase 7 of Coal Valley Estates, Remainder DL 24, Nelson District as it pertains to DPA#1* dated January 11, 2018.

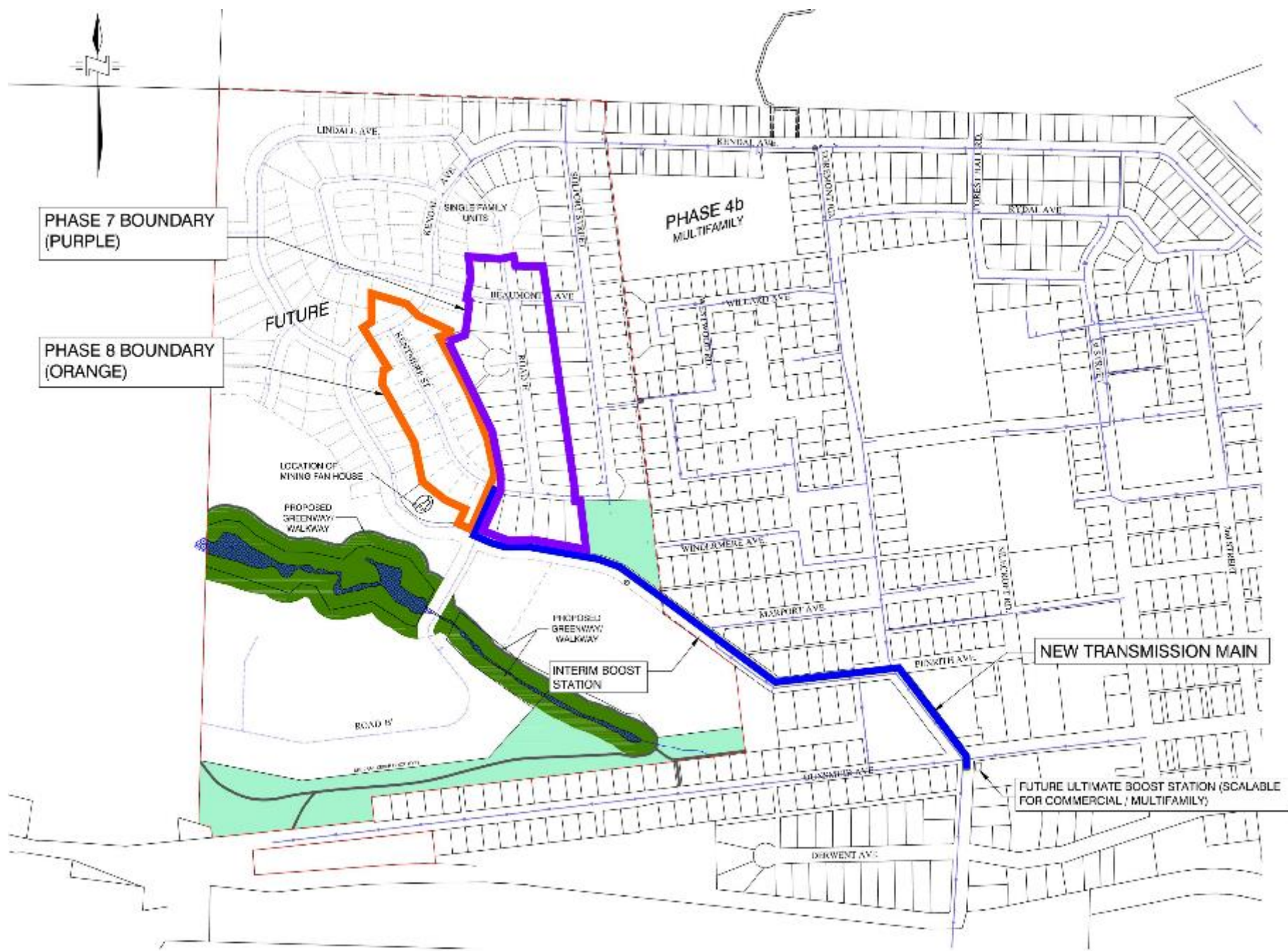
7. **Contaminated Sites Regulation**

This Permit is issued pursuant to the requirements of the *Environmental Management Act*, whereby the Owner has completed a “Site Declaration” for the subject property.

8. This Permit is **not** a Building Permit.

CERTIFIED as the **DEVELOPMENT PERMIT** issued by resolution of the Council of the Corporation of the Village of Cumberland on _____, 2018 and granted on _____, 2018 *(the Council approves the permit, and senior staff shall grant the permit when all the conditions have been met. (such as the landscaping security, additional plans or reports, etc)*

Corporate Officer



LAND TITLE ACT
FORM C (Section 233) CHARGE

GENERAL INSTRUMENT - PART 1 Province of British Columbia

PAGE 1 OF 9 PAGES

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.

Andrea
Winnifred Rowe
K4M9FT

Digitally signed by Andrea Winnifred Rowe K4M9FT
DN: cn=CA, cn=Andrea Winnifred Rowe, email=K4M9FT, o=Lawyer, ou=Verity E-att, www.aucanet.com K4M9FT
Date: 2016.08.01 7:36:27 -0700

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

Swift Datto Law Corporation

Barristers and Solicitors

201 - 467 Cumberland Road

Courtenay

BC V9N 2C5

37022/AWR/sky/Coal Valley/Phase 6

250.334.4461

Yew Tree and Buffer

Document Fees: \$143.16

Deduct LTSA Fees? Yes ☒

2. PARCEL IDENTIFIER AND LEGAL DESCRIPTION OF LAND:

[PID]

[LEGAL DESCRIPTION]

SEE SCHEDULE

STC? YES ☐

3. NATURE OF INTEREST

CHARGE NO.

ADDITIONAL INFORMATION

Covenant

Entire Agreement

Priority Agreement

Entire Agreement

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))

THE CORPORATION OF THE VILLAGE OF CUMBERLAND

A MUNICIPAL BODY HAVING ITS HEAD OFFICE AT

P.O. BOX 340, 2673 DUNSMUIR AVENUE

CUMBERLAND

BRITISH COLUMBIA

V0R 1S0

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)

ADNAN N. HABIB

Barrister & Solicitor

#200-2955 Gladwin Road

Abbotsford, B.C. V2T 5T4

Tel: 604 852 3646

Fax: 604-852-5194

Execution Date

Y	M	D
16	06	24

Transferor(s) Signature(s)

Coal Valley Estates Ltd.
by its authorized signatories:

BRUCE A. KEHLER

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.

FORM PL-921

LAND TITLE ACT
FORM D

EXECUTIONS CONTINUED

PAGE 2 of 9 PAGES

Officer Signature(s)

Execution Date

Transferor / Borrower / Party Signature(s)

ADNAN N. HABIB

Barrister & Solicitor

#200-2955 Gladwin Road
Abbotsford, B.C. V2T 5T4
Tel: 604 852 3646
Fax: 604-852-5194

Y	M	D
16	06	24

HSBC BANK CANADA
by its authorized signatories:Neil Gu
Senior Account Manager Corporate
BankingAndrew Li
Analyst, Corporate Banking

Rachel Parker

Commissioner for Taking Affidavits in British Columbia

The Corporation of the Village of
Cumberland
P.O. Box 340 - 2673 Dunsmuir Ave.
Cumberland, BC V0R 1S0

16	07	26
----	----	----

The Corporation of the Village of
Cumberland
by its authorized signatories:

Leslie Baird, Mayor

Sundance Topham, chief Administrative
Officer

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.

FORM E_V21

LAND TITLE ACT
FORM E

SCHEDULE

PAGE 3 OF 9 PAGES

2. PARCEL IDENTIFIER AND LEGAL DESCRIPTION OF LAND:

[PID]

[LEGAL DESCRIPTION]

003-634-264**DISTRICT LOT 24, NELSON DISTRICT, EXCEPT PARTS IN PLANS 21 RW,
522E, 3130, 3268, 4222, 4661, 4824, 4869, 6793, 6794, 11068, 12569, 13409,**

STC?

YES ☐**13580, 13640, 14028, 15750, 23224, 19381, 19382, 19383, 20746, 21025, 22199,
23092, 23237, 23600, 23685, 24001, 24314, 24868, 25906, 26084, 26131, 26455,
26629, 26885, 27337, 27857, 29860, 30068, 30809, 32692, 35790, 36785, 35098,
50021, VIP64546, VIP65968, VIP65482, VIP67269, VIP71673 AND EXCEPT
PARCEL A (DD 27356N) AND PARCEL B (DD M7897) AND EXCEPT PARTS IN
PLANS VIP72020, VIP72021, VIP72022, VIP73804, VIP74156, VIP75434,
EPP17313, EPP18594, EPP20118 AND EPP53358**

2. PARCEL IDENTIFIER AND LEGAL DESCRIPTION OF LAND:

[PID]

[LEGAL DESCRIPTION]

STC?

YES ☐

2. PARCEL IDENTIFIER AND LEGAL DESCRIPTION OF LAND:

[PID]

[LEGAL DESCRIPTION]

STC?

YES ☐

E V21

**LAND TITLE ACT
FORM E****SCHEDULE**

PAGE 4 OF 9 PAGES

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

TRANSFEROR(S):

COAL VALLEY ESTATES LTD., Incorporation No. BC0708223, having an office at #2 - 45953 Airport Road, Chilliwack, British Columbia, V2P 1A3

HSBC BANK CANADA, a Canadian Chartered Bank, having a Branch Office and Postal Address at 9345 Main Street, Chilliwack, British Columbia, V2P 4M3

TERMS OF INSTRUMENT - PART 2

RECITALS:

-
- A. The Transferor is the registered owner in fee-simple of those lands more particularly described in Item #2 of Form C, in the Village of Cumberland in Province of British Columbia (the "**Lands**").
- B. The Transferee is the Village of Cumberland ("**Transferee**" or "**Village**").
- C. Acknowledging that it is in the public interest that the subdivision, building and use of the Lands continue to be limited, in particular given commitments to protect, preserve, conserve, maintain, and keep in its natural or existing state certain mature trees and their root systems, the Transferor has volunteered and wishes to grant this covenant to the Transferee, and the Transferee has accepted this covenant (the "**Agreement**").
- D. Section 219 of the *Land Title Act* gives authority for a covenant and indemnity, whether of a negative or positive nature, to be registered against the Lands and granted in favour of the Transferee with provisions:
- in respect of the use of land or the use of a building on or to be erected on land;
 - that land is to be built on in accordance with the covenant;
 - that land is not to be built on or subdivided except in accordance with the covenant;
 - that land is not to be used, built on or subdivided;
 - that parcels of land designated in the covenant and registered under one or more indefeasible titles are not to be sold or otherwise transferred separately; and
 - that land or a specified amenity in relation to it be protected, preserved, conserved, maintained, enhanced, restored or kept in its natural or existing state in accordance with the covenant and to the extent provided in the covenant.

NOW THEREFORE in consideration of the payment of the sum of \$10.00 by the Transferee to the Transferor (receipt and sufficiency acknowledged), the mutual covenants and agreements contained in this Agreement, and for other good and valuable consideration, the parties covenant and agree as to the following, including under Section 219 of the *Land Title Act*:

Restrictions and Requirements

1. The Transferor covenants and agrees the portion of the Lands identified as "Pacific Yew Tree" and "5m (Radius) Buffer" lying to the south of a "proposed park" shown on a Pacific Yew Tree Location Plan prepared by McElhanney Associates Professional Land Surveyors, and dated May 18, 2016, a reduced copy of which is attached as Schedule "A":
 - (a) must not be built upon; and
 - (b) must not be disturbed in any manner, including but not limited to soil deposit or removal.
2. The Transferor agrees that:

- (a) he shall not cut or otherwise disturb the Pacific Yew Tree shown on Schedule "A" in perpetuity;
- (b) he shall erect and maintain a temporary high visibility fence at an outer boundary of a 5.0metre buffer from the outer edges of the tree, such buffer area also being shown on Schedule "A", prior to and while blasting and construction within 100 metres of the Pacific yew Tree; and
- (c) he shall erect and maintain, after the adjacent blasting and construction has finished, a cedar rail fence, approximately 1.2metres in height at the outer boundary of a 5.0metre buffer from the outer edges of the tree in order to protect, preserve, conserve, maintain, and keep such tree in its natural state in perpetuity.

Indemnity and Release

- 3. The Transferor covenants and agrees to indemnify and save harmless the Transferee from any and all claims, causes of action, suits, demands, fines, penalties, costs or expenses or legal fees (on a solicitor-client basis) whatsoever, in law or equity, which anyone has or may have against the Transferee or which the Transferee incurs as a result of any loss, damage, deprivation, enrichment or injury, including economic loss, arising out of or connected with the restrictions or requirements of this Agreement, the breach of any covenant in this Agreement, or the use of the Lands contemplated under this Agreement.
- 4. The Transferor releases and forever discharges the Transferee of and from any claims, causes of action, suits, demands, fines, penalties, costs or expenses or legal fees (on a solicitor-client basis) whatsoever, in law or equity, which the Transferor can or may have against the Transferee for any loss, damage, deprivation, enrichment or injury, including economic loss, arising out of or connected with the restrictions or requirements of this Agreement the breach of any covenant in this Agreement, or the use of the Lands contemplated under this Agreement.

Registration

- 5. The restrictions and requirements in this Agreement are covenants running with the Lands in favour of the Transferee and intended to be perpetual, and shall continue to bind all of the Lands when subdivided.
- 6. At the Transferor's sole cost, the Transferor must do everything necessary to secure priority of registration and interest for this Agreement over all encumbrances of a financial nature.
- 7. The Transferor agrees to execute all other documents and provide all other assurances necessary to give effect to the covenants contained in this Agreement.
- 8. The Transferor, as a personal covenant between the parties, agrees to pay the legal fees and Land Title Office costs of the Transferee in connection with the preparation and registration of this Agreement.

General

9. The Transferor covenants and agrees for itself, its heirs, executors, successors and assigns, that it will at all times perform and observe the requirements and restrictions set out in this Agreement.
10. It is mutually understood, acknowledged and agreed by the parties that the Transferee has made no representations, covenants, warranties, guarantees, promises or agreements (oral or otherwise) with the Transferor other than those contained in this Agreement.
11. Nothing contained or implied in this Agreement:
 - (a) prejudices or affects the rights, powers or discretion of the Transferee in the exercise of its functions under any public or private statutes, bylaws, orders and regulations, all of which may be fully and effectively exercised in relation to the Lands as if the Agreement had not been executed and delivered by the Transferor;
 - (a) imposes any legal duty or obligation, including any duty of care or contractual or other legal duty or obligation, to enforce this Agreement or the breach of any provision in this Agreement; or
 - (b) imposes any public law duty, whether arising from the principles of procedural fairness or the rules of natural justice, on the Transferee with respect to its exercise of any right or remedy expressly provided in this Agreement or at law or in equity.
12. The Transferor agrees the Transferee, and any of its officers or employees, may but is not obligated to inspect the Lands for the purpose of ascertaining compliance with this Agreement.
13. The Transferor covenants and agrees that the Transferee may withhold development permits, building permits and other approvals related to the use, building or subdivision of land as necessary to ensure compliance with the covenants in this Agreement, and that the issuance of a permit or approval does not act as a representation or warranty by the Transferee that the covenants of this Agreement have been satisfied.
14. The Transferor covenants and agrees that:
 - (a) if the Transferee advises of a breach of this Agreement, as determined in its reasonable discretion, the Transferor must promptly remedy that breach at its sole cost;
 - (b) if the Transferor has not remedied the breach to the reasonable satisfaction of the Transferee within fifteen (15) days of notice or other time longer period specified by the Transferee, the Transferee may, but is under no obligation to, remove or rectify the breach at the expense of the Transferor without further notice; and

(c) any costs to the Transferee of such removal or rectification is a debt due from the Transferor to the Transferee together with interest at a rate of 3% per annum in excess of the Prime Lending Rate of the Royal Bank of Canada in effect from time to time, and:

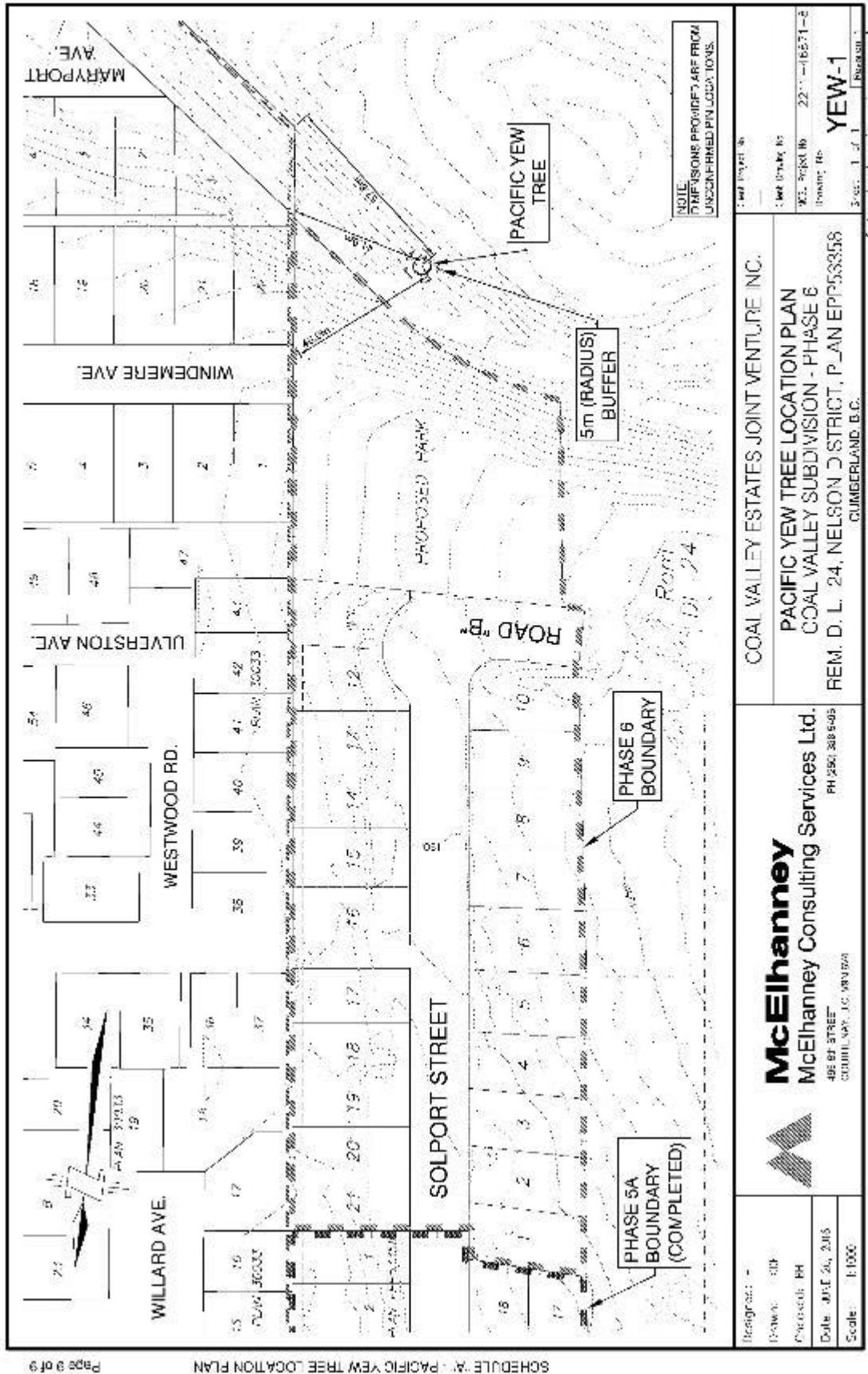
- (i) the Transferor shall pay such costs and interest to the Transferee forthwith upon demand; and
- (ii) failing payment, the Transferee may add such costs to property taxes for the Lands.

15. No remedy under this Agreement is to be deemed exclusive but will, where possible, be cumulative with all other remedies at law or in equity. The Transferor agrees that the Transferee is entitled to obtain an order for specific performance or a prohibitory or mandatory injunction in respect of any breach of this Covenant by the Transferor
16. The waiver by a party of any breach of this Agreement or failure on the part of the other party to perform in accordance with any of the terms or conditions of this Agreement is not to be construed as a waiver of any future or continuing failure, whether similar or dissimilar, and no waiver is effective unless it is written and signed by both parties.
17. 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.
18. The Transferor acknowledges having received legal advice prior to executing this Agreement, and the Transferor agrees that it fully and completely understands this Agreement and its impact on the Lands.
19. This Agreement is to be construed in accordance with and governed by the laws applicable in the Province of British Columbia.

Priority Agreements

20. HSBC BANK CANADA, a Canadian Chartered Bank (the "**Chargeholder**") is the registered holder of charges by way of MORTGAGE and ASSIGNMENT OF RENTS against the Lands, registered under No. FA86386 and FA86387, respectively (the "**Charges**"), agrees with the Transferee, in consideration of the sum of Ten Dollars (\$10.00) paid by the Transferee to the Chargeholder (receipt and sufficiency acknowledged), that this Agreement shall be an encumbrance upon the Lands in priority to the Charges in the same manner and to the same effect as if the Agreement had been dated and registered prior to the Charges.

The Transferor and Transferee acknowledge that this Agreement has been duly executed and delivered by the parties executing Forms C, D and E (pages 1-4) attached.



FORM DECLAR_V18

**LAND TITLE ACT
FORM DECLARATION**

Related Document Number: CA5403033

PAGE 1 OF 2 PAGES

Your electronic signature is a representation that: you are a subscriber as defined by the Land Title Act, RSBC 1996, C:250, the original or where designated by the Director, a true copy of the supporting document is in your possession and that the summary of the material facts set out in this declaration accurately reflects the material facts set out in each supporting document and if a supporting document is evidenced by an imaged copy the material facts of the supporting document are set out in the imaged copy of it attached. Each term used in the representation and declaration set out above is to be given the meaning ascribed to it in Part 10.1 of the Land Title Act.

Andrea
Winnifred
Rowe K4M9FT

Digitally signed by Andrea Winnifred
Rowe K4M9FT
DN: c=CA, ou=Andrea Winnifred
Rowe K4M9FT, o=Canada
E=Andrea.Winnifred@rowe.com
Y:2015.11.29 18:25:51 -08'00'

I, ANDREA W. ROWE, declare that:

1. The legal description of land appears to be incorrect. (Missing exception plan EPP15708).
2. The legal description of land should read:

DISTRICT LOT 24, NELSON DISTRICT, EXCEPT PARTS IN PLANS 21 RW, 522E, 3130, 3268, 4222, 4661, 4824, 4869, 6793, 6794, 11068, 12569, 13409, 13580, 13640, 14028, 15750, 23224, 19381, 19382, 19383, 20746, 21025, 22199, 23092, 23237, 23600, 23685, 24001, 24314, 24868, 25906, 26084, 26131, 26455, 26629, 26885, 27337, 27857, 29860, 30068, 30809, 32692, 35790, 36785, 35098, 50021, VIP64546 VIP65968, VIP65482, VIP67269, VIP71673 AND EXCEPT PARCEL A (DD 27356N) AND PARCEL B (DD M7897) AND EXCEPT PARTS IN PLANS VIP72020, VIP72021, VIP72022, VIP73804, VIP74156, VIP75434, EPP15708, EPP17313, EPP18594, EPP20118 AND EPP53358

3. The covenant charges only part of the lands, but a reference or explanatory plan delimiting the covenant area has not been filed along with the document.
4. Paragraph 1 on page 5 is deleted and replaced as follows:
 1. The Transferor covenants and agrees that the portion of the Lands identified as "Covenant Area" on Reference Plan of Covenant EPP68216 and having an area of 78.5 m2:
 - (a) must not be built upon; and
 - (b) must not be disturbed in any manner, including but not limited to soil deposit or removal.
5. Schedule "A" attached to CA5403033 (page 9 of 9) is deleted.
6. A copy of Reference Plan of Covenant EPP68216 is attached hereto.

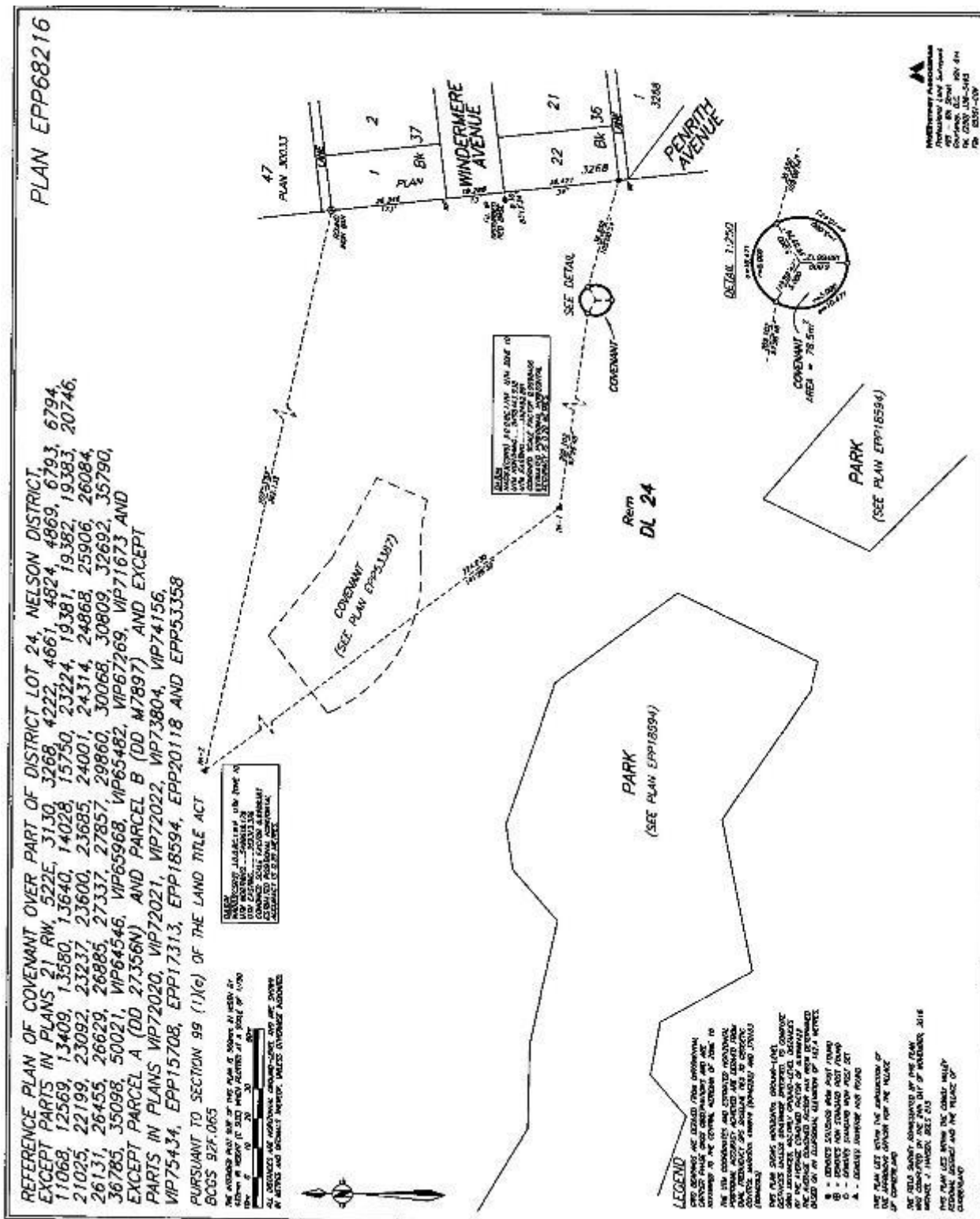
I make this declaration and know it to be true based on personal information / reasonable belief.

ANDREA W. ROWE

NOTE:

A Declaration cannot be used to submit a request to the Registrar for the withdrawal of a document.

Fee Collected for Document: \$12.88





Lewkowich Geotechnical Engineering Ltd.

File: G4684.01
February 9, 2007

- Coal Valley Estates Ltd.
1657 Islington Court
Comox, B.C.
V9M 3R4

Attention: Mr. Bruce Kehler

**PROJECT: COAL VALLEY ESTATES SUBDIVISION - PHASE 4 - AND
FUTURE DEVELOPMENT - CUMBERLAND, B.C.**

SUBJECT: PRELIMINARY GEOTECHNICAL ASSESSMENT

Dear Mr. Kehler:

1. Introduction

- a. As requested, Lewkowich Geotechnical Engineering Ltd. has conducted a preliminary geotechnical evaluation of subsurface conditions at the proposed site of a residential subdivision in Cumberland, B.C. The purpose of our assessment was to determine subsurface conditions at the site, to investigate coal mine hazards and to provide preliminary recommendations pertinent to the design of storm water infiltration provisions. This letter outlines our recommendations for this aspect of the development.

2. Background

- a. The property is the continuation of a proposed subdivision, located at the north side of Cumberland. Phase 4 of this development is north of Willard Avenue, and west of Egremont Road, to the west boundary of the property (approximate area is 123 acres). The 'Future Development' (west of Phase 4) is located north of Dunsmuir Avenue to just north of Kendall Avenue.
- b. The purpose of this assessment was to determine the subsurface soil and groundwater conditions within this portion of the site, to comment on the possibility of

Suite A - 2569 Kenworth Road, Nanaimo, British Columbia, V9T 3M4
Telephone: (250) 755-0355 Facsimile: (250) 756-3831



infiltration of storm water within the proposed development area and to assess and comment on coal mine workings on the property.

- c. We understand that the Village of Cumberland requires infiltration facilities to be designed to minimize discharge of storm water to the storm water system and that storm water management provisions for this portion of the development are required to incorporate infiltration of storm water where feasible. The goal will be to infiltrate drainage from impermeable surfaces, particularly roofs, thereby reducing direct discharge to the storm drain system.

3. Site Assessment

- a. Thirty eight (38) test pits (TP06-01 to TP06-38) were excavated on October 3 and 4, 2006, utilizing a Kobelco tracked excavator supplied by Wacor Holdings Ltd. The test pits were randomly excavated on an approximate 100 meter grid over the area. Locations varied based on topography and access. LGE personnel logged the conditions encountered in the field using visual-manual classification methods. Test pit logs and a site plan showing the approximate location of the test pits are included as Figure 1, following the text of this report.
- b. Details of the conditions encountered in the test pits are provided in this text. Depths are referenced to the existing ground surface at the time of our field investigation. Soil classification terminology is based on the Modified Unified classification system. Other descriptive terms follow conventions of the Canadian Foundation Engineering Manual.
- c. No permeability (percolation) testing was carried out during this phase of the investigation.

Lewkowich Geotechnical Engineering Ltd.



4. Discussion and Recommendations

- a. Site soils were similar to those reported in our previous report on Phase 2 & 3, LGH File No.:G4468, dated July 13, 2006. The soil conditions consisted generally of a layer of organics, overlying silty sand with some gravel, over dense silty sand glacial till. Bedrock was encountered in most test pits at depths varying from ground surface (TP06-32) to 2.0m (TP06-12). Several test pits were terminated in very dense glacial till.
- b. The upper sand material (overburden) was generally found to be silty, compact to dense, with some gravel. This material should be suitable for infiltration of storm water infiltration. Further permeability testing would be necessary to determine the permeability characteristics of this material.
- c. Groundwater seepage was not encountered.

5. Review of Available Mine Information and Discussion

- a. The available coal mine working plans (*Island Geotechnical Services Ltd. – Cumberland - Tsuble River – Lantzville Coal Field – Composite Plan – April 1980*), indicate that the general area of the subject property is situated above the abandoned Cumberland Mine, which was worked about 70 to 100 years ago. Detailed mine layout sketches - transcribed from plans obtained from the Ministry of Mines were utilized for geotechnical evaluations and are supplemental to this report. Please note that the utilized plans were not necessarily the original working drawings. Both survey error and transcription errors may have occurred resulting in approximate locations of actual mine features that we refer to in this report.
- b. The Cumberland Mine worked two levels beneath the subject property. According to the plans, a slope entrance to the mine is located approximately 300 m north of the subject property. The ground surface elevation at the mine entrance was indicated as being around 170m (548'). The plans indicated elevation data of 285' to 291' and 93' to 103' from within the two levels of workings. As such, the ground elevation is considered to be at least 246' (75m) above the workings.

Lewkowich Geotechnical Engineering Ltd.



- c. The Cumberland Mine was worked near the turn of the 20th century. The workings were entered via adits north of the site. Ventilation was typically supplemented by vertical air shafts. The seam thickness was probably about two metres thick. It was worked using room and pillar methods. This mining method involved driving haulage ways into the coal seam followed by working submains approximately at right angles to outline blocks of coal, or pillars, for roof support. Pillar size was increased in areas of poor quality roof support, or as mine depth increased. Typically when the lease boundary or limit of marketable coal was reached, coal remaining in the pillars was extracted, or "robbed", to the extent possible by mine conditions. Local safe conditions were provided by timbering or placing waste rock. After extracting a pillar, timbering would typically be removed and the area allowed to collapse.
- d. The typical types of subsidence features occurring over coal mines are sinkholes and troughs. Sinkholes generally develop where the cover above a mine is thin. Competent strata above the coal are a limiting factor in sinkhole development. Sinkholes normally occur where the interval of rock above the mine is less than 5 times the height of the extracted seam. A maximum interval of 10 times the height of the extracted seam is often accepted as the limit for sinkhole development. Mining and geologic conditions plus bulking properties of the overburden can result in exceptions to this guideline. The 5 and 10 times the height criteria refer to thickness of competent rock, and do not include soil or very weathered rock. Sinkholes are usually circular in plan. Depths vary from the full overburden thickness, where the fallen cover moves laterally into the mine void, to only fractions of a metre where bulking of the fallen cover nearly fills the void. Sinkholes are normally easily identified with clearly defined boundaries.
- e. A trough is a shallow, often broad dish-shaped depression that develops when the overburden sags downward into the mine void in response to coal extraction, the crushing of mine pillars, or the punching of pillars into the mine floor or roof. With panel extraction in longwall mining and total extraction room and pillar mining, a subsidence trough occurs. Trough dimensions are related to the size and plan shape of the area of failure at mine level.



- f. A building may be potentially impacted by coal mine workings if it is situated directly above the workings (i.e. if the building is within an area defined by projecting a vertical line from the outside edge of the workings to the ground surface). In addition, there can be potential impact if the building is within an area that is defined by projecting a line at about 20° (from vertical) from the edge of the workings to the ground surface. This additional distance around the outside of the working is referred to as the "area of subjacent support".
- g. In abandoned room and pillar mines the strength of remaining pillars may be affected by ground water fluctuations or weathering. Stress concentrations may cause longer term spalling of pillars. These pillars, if unable to carry the load of the overburden, will subsequently fail. Failure of one pillar results in a redistribution of stresses by arching of the mine roof which may cause adjacent pillars to fail by crushing, or punching if soft rock seams are present on the mine floor or roof.
- h. Troughs at the small end of their size range overlap with sinkholes and at the large end of their size range may be hundreds of metres in diameter. For abandoned mines their maximum depth is generally one half of the thickness of the mined seam. Because of their broad, shallow shape, troughs may not be easily identified, particularly if they occur in undeveloped areas where surface movement is not of consequence. The ground movement which occurs in trough formation is both vertical and horizontal. It is not necessarily uniform or symmetrical. Variations in the soil and rock type as well as the presence of faults may result in concentrations of movement and the formation of such features as pressure ridges (in the centre of the basin) and tension cracks (around the basin's edges) and other irregularities.
- i. The damage which results from mine subsidence of the types just described do not normally pose a threat of personal injury or loss of life. Experience has been that cases of personal injury resulting from coal mine subsidence are so few as to be of almost negligible significance. However, cases of people falling down abandoned vertical shafts have occurred from time to time. This is probably a much more real danger than the likelihood of injury resulting from subsidence.



- j. The risk of subsidence over abandoned mines is dependent upon the amount and extent of mining and the physical characteristics of the mine floor, coal pillars, and overburden. With no extraction, the coal seam is loaded by gravity and regional stresses. Developmental mining with nominal room widths and large coal pillars (low extraction ratios) produces subsidence which is due largely to elastic compression of the pillars and is nearly imperceptible. If mining ceases, future subsidence is unlikely. Additional extraction would eventually result in subsidence. If nearly full extraction is achieved with active mining, subsidence occurs contemporaneously with mining.
- k. Therefore, risks of long term subsidence occur between the two conditions of low extraction ratios and total extraction in sufficiently wide areas such that basin subsidence occurred coincidentally with mining. Where total extraction was not achieved and adequate pillaring for long term support were not left in the mines, roof collapse, crushing of coal pillars or punching of coal pillars into softer mine floor or roof rock can result in subsidence tens or even hundreds of years after mining.
- l. Subsidence over abandoned mines may occur years after mining and may go unnoticed unless it is in a developed area. The time of occurrence of subsidence is governed by the geology and geometry of the mine workings and the related soil and rock strata plus the rate of deterioration of the coal pillars and adjacent rocks. This represents a complex interaction of phenomena that prohibits reliable prediction of the time of subsidence. Subsidence incidents 50 to 100 years after mining are common.
- m. Some time after mining, complete collapse of mine voids is to be expected as a result of natural causes. The ground surface over a mine may experience a variable frequency of subsidence incidents. If abandoned mine voids have not been designed for long term (i.e. permanent) stability, the potential for subsidence remains until the voids collapse. Furthermore, subsidence is not a uniform, continuous process.
- n. Several factors are likely to induce subsidence movements. Generally they do not increase the amount of subsidence but merely accelerate the time of occurrence. These are earthquake vibrations, lowering ground water levels, unusually high precipitation, and leaking water or sewer lines. The latter two factors may increase the amount of



subsidence if overburden materials are washed into the mine workings causing “pipeholes”. Subsidence features that have been seen on ground are generally within areas where mine workings are shallow. In a number of isolated cases, subsidence features have included relatively discrete circular features on ground, typically measuring within 1 metre in diameter. These features have usually appeared where mine workings have been at shallow (less than 20 metres) depth.

- o. Current approaches to geotechnical engineering practice relating to abandoned coal mining may include some variation between firms. However, the following describes some accepted practices. In general, the location of known underground workings are commonly determined from available data, and evaluated for proximity to the subject development. Depending on the layout and depth of the workings, and potential for impact to the specific development, the site may be probed for the presence of underground voids. Such probing is usually undertaken in areas concluded to have a high potential risk of subsidence. This is usually the case where workings are present within a depth of about 30 metres from ground surface. If probing determines that voids are present, recommendations to mitigate surface disruption are presented. These recommendations may include complete grouting, or provision of additional support at the mine level. In areas considered to be impacted, but with a low to moderate risk of surface disruption, recommendations for essentially rigid foundation systems are commonly provided.
- p. The Village of Cumberland bears responsibility for approving building development within its limits. Current Provincial legislation, through the Local Government Act, requires that a geotechnical study be undertaken before the development of any site that could be impacted by hazards, including undermining. The Act (Section 699) stipulates “that the engineer shall certify under his hand and seal that the land may be used safely for the used intended for the building or structure for which a permit has been applied”. The current building approval process includes the requirement for an engineering report, from a satisfactory geotechnical engineer.

Coal Valley Estates Subdivision – Phase 4 and Future Development
File: G4684.01
February 9, 2007
Page 9 of 10



on a limited basis. This zone represents most of the Phase 4 area and the northeastern portion of the Future Development site.

4.1. General Storm Water Disposal

- a. Based on our preliminary assessment, the surficial soils should accept rain water and storm water from infiltration trenches or pits readily. The depth of overburden soils is limited; therefore, additional permeable soils could be placed atop the existing grade to provide additional water storage area. Suitable permeable soils should be used for additional fill.
- b. The suitable soil deposits are limited in thickness, but there appears to be sufficient depth and volume of material to infiltrate some storm water flows within the upper sand layer, however, grading would have to be such to allow surficial infiltration galleries to be constructed.

Coal Valley Estates Subdivision – Phase 4 and Future Development
File: G4684.01
February 9, 2007
Page 10 of 10



5. Closure

- a. The conclusions and recommendations submitted in this report are based upon the data obtained from a limited number of widely spaced subsurface explorations. If soil conditions exposed during further excavation or development vary from those encountered during this investigation, LGE should be notified and we may be required to modify our recommendations.
- b. Lewkovich Geotechnical Engineering Ltd. acknowledges that this report may be requested by the Village of Cumberland as a precondition to the issuance of a development or building permits for this site.
- c. Lewkovich Geotechnical Engineering Ltd. appreciates the opportunity to be of service on this project. If you have any comments, or additional requirements at this time, please contact us at your convenience.

Respectfully Submitted,
Lewkovich Geotechnical Engineering Ltd.



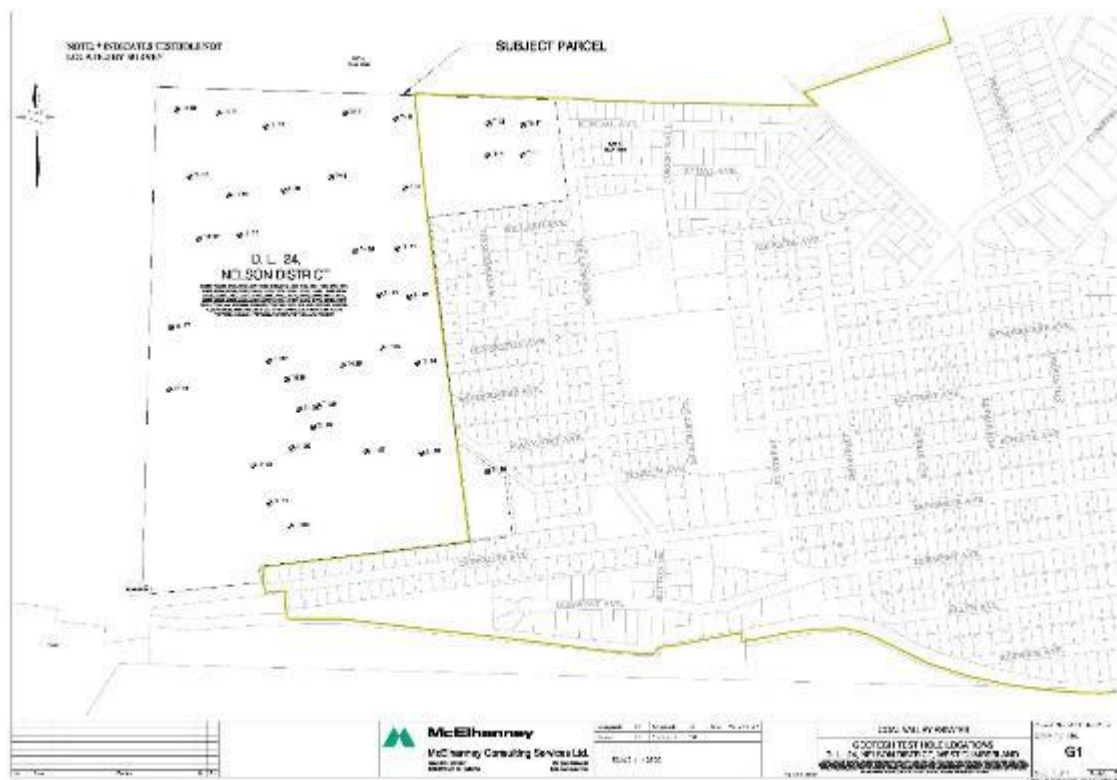
Darron Clark, P. Eng.
Geotechnical Engineer

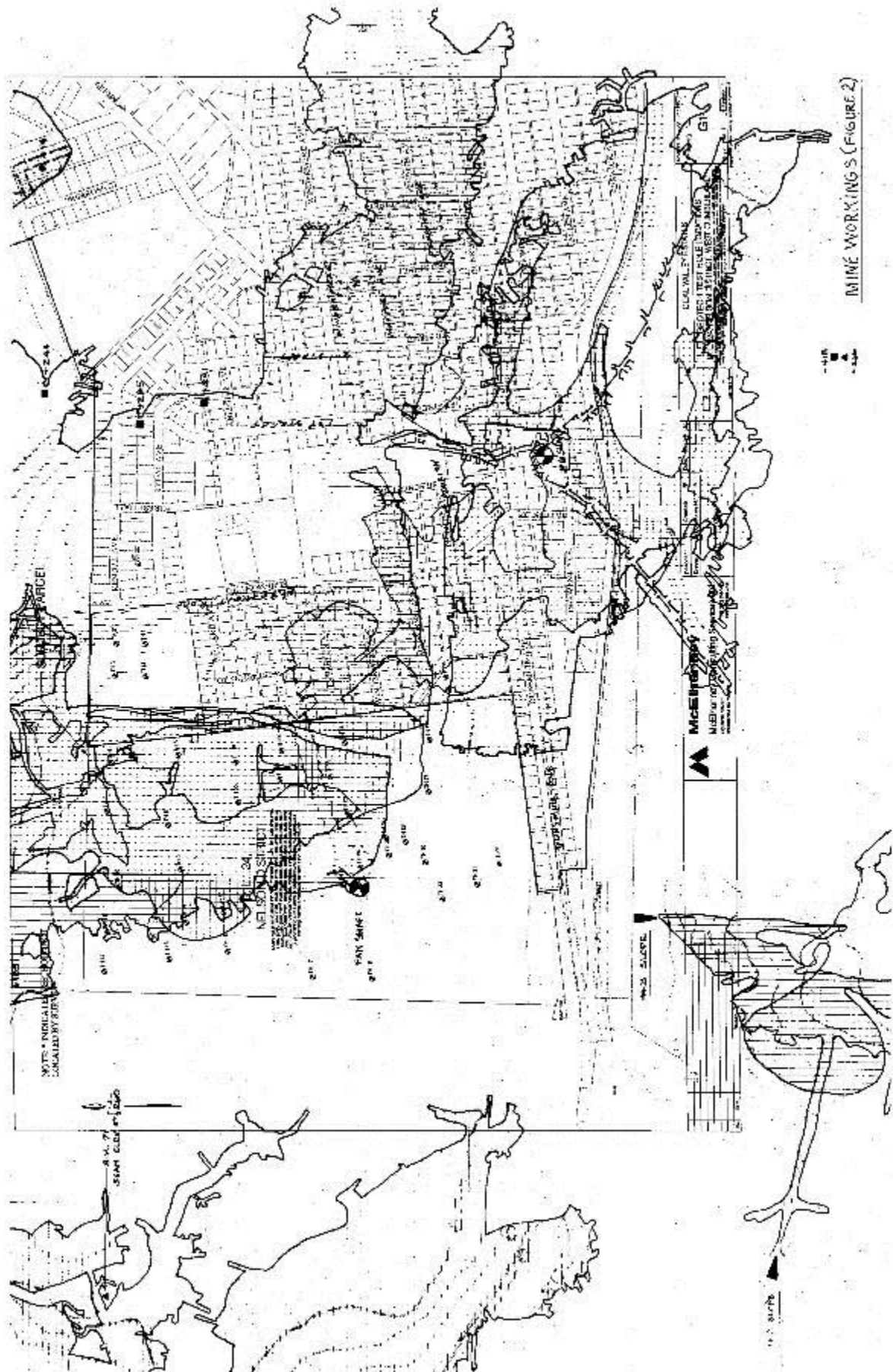
Attachments: Site Plan (Figure 1), Mine Workings (Figure 2), Test Pit Logs (38)

Lewkovich Geotechnical Engineering Ltd.

TESTPIT LOCATIONS (UTM Coordinates)

Testpit #	North (m)	East (m)	Elev (m)
TPC1	5498888.465	352818.566	174.415
TPC2	5498888.492	352815.180	175.000
TPC3	5498944.063	352757.836	175.739
TP04	5498887.397	352756.540	178.256
TP05	5498829.352	352609.288	184.817
TP06	5498952.294	352593.556	180.009
TP07	5498962.421	352503.398	184.621
TP08	5498848.429	352477.307	195.099
TP09	5498825.175	352393.932	197.593
TP10	5498939.382	352361.616	190.413
TP11	5498962.228	352276.934	187.933
TP12	5498968.756	352202.995	184.950
TP13	5498849.332	352226.444	190.550
TP14	5498816.002	352295.738	202.431
TP15	5498746.147	352315.145	205.119
TP17	5498581.706	352193.252	191.543
TP18	5498470.424	352190.536	188.933
TP19	5498721.938	352596.167	188.726
TP20	5498717.338	352520.746	194.110
TP21	5498639.451	352564.215	194.223
TP22	5498636.132	352617.241	189.005
TP23	5498544.756	352568.865	195.507
TP24	5498518.085	352632.027	192.234
TP25	5498514.138	352498.760	199.102
TP26	5498404.600	352445.937	187.840
TP27	5498360.635	352540.710	189.063
TP28	5498358.086	352639.134	187.923
TP29	5498325.603	352756.121	177.173
TP30	5498367.285	352408.035	184.863
TP30	5498367.277	352408.038	184.867
TP31	5498269.957	352368.122	196.108
TP32	5498227.771	352405.360	187.955
TP33	5498335.218	352340.106	201.110
TP34	5498441.903	352455.029	185.328
TP35	5498435.395	352421.403	186.094
TP36	5498489.010	352398.623	193.367
TP37	5498522.475	352366.610	198.792
TP38	5498750.000	352421.000	190.000







Ursus Environmental

Wildlife & Environmental Resource Consulting
600 Castle Way, Parksville, B.C. V9P 2R1



Terrestrial Assessment for Remainder of Phase 5 of Coal Valley Estates, Cumberland

Prepared by:
Joe Materi, R.P.Bio.
October 22, 2014

Prepared for:
Coal Valley Estates Limited Partnership
#2 – 45953 Airport Road
Chilliwack, B.C. V2P 1A3

**Terrestrial Assessment for Remainder of Phase 5 of
Coal Valley Estates, Cumberland**

EXECUTIVE SUMMARY

This baseline bio-inventory and assessment has been prepared in support of developing the remaining 41.8 ha of the Phase 5 property located on the western outskirts of the Village of Cumberland. The concept plan involves a mix of single-family residential, multi-family residential, commercial/residential, and seniors' residential areas, along with an extensive greenway/trail network. The latter would encompass about 20% of the total Project Area.

This report is intended to satisfy the requirement for an environmental assessment under The Village of Cumberland's Development Permit Guidelines. Specific objectives of the assessment were to:

- 1) Document existing environmental features of the site;
- 2) Determine the potential for rare or threatened vertebrates, vascular plants, or ecosystems to occur on the property;
- 3) Identify potential environmental impacts associated with site development; and
- 4) Provide mitigation and/or compensation strategies to address potential impacts assessed as having ecological significance.

The assessment was based on fieldwork carried out over mid-September and early October of 2014, and background review of existing information sources. Based on the information obtained through fieldwork and desktop review, the following were concluded about existing conditions:

1. No Bald Eagle, Osprey, or Great Blue Heron nest in proximity to the site. The nearest known Bald Eagle nest is about 4 km to the east.
2. Blue-Listed Western Screech-owls were detected in the south-central part of the property, but no suitable nesting cavities were found there.
3. A number of day-active raptors, considered Regionally Significant, were observed on and near the site during the autumn raptor migration. As no nesting sign was detected, and no birds were seen more than once, these raptors were assumed to be transients.
4. Moist forest habitats suitable for the Blue-Listed Wandering Salamander support only the more common Western Red-backed Salamander.
5. No records of rare plants exist for the site, and the potential for such plants appears very low, given the habitats present and their disturbed state.
6. An uncommon Pacific Yew tree and a pair of veteran Douglas-fir trees are considered important natural features of the site.
7. Although no mapped Sensitive Ecosystem Inventory (SEI) polygons occur on the property, a Red-Listed ecosystem was found within Mid-seral Riparian Forest (Cw- Salmonberry) and a Blue-Listed ecosystem (Cw – Slough Sedge) was found in three areas within Young Riparian Forest.

Overall, the proposed development appears to be a very good fit with the site features, as virtually all of the significant environmental features associated with this site would be protected within proposed green spaces. The exceptions include the small wetland, a Shrub Carr, and a single Pacific Yew tree identified in the southeast part of the Project Area.

The following recommendations were offered to minimize potential environmental impacts associated with site development:

- As retention of the small Shrub Carr is likely not practical given its isolation from the main watercourse, it was recommended that similar native plants (i.e. Red-osier Dogwood, Pacific Willow) be incorporated into any stormwater detention facilities that might be planned for the development.
- Provided its location is identified prior to site preparation, it should be possible to retain the uncommon Pacific Yew tree in the southeastern part of the Project Area. High visibility fencing should be placed around the drip line of this tree to prevent accidental damage to root zones from heavy equipment and /or fill placement.
- Currently, the lower part of the main watercourse is used by Blue-Listed Western Screech-owls, and suitable hunting grounds are found within the wetland complexes to the south of the site. However, nesting opportunities for species, which requires relatively large tree cavities, are very limited on the site and surrounding areas. It was therefore recommended that three artificial nesting boxes be installed at intervals within the Mid-seral Riparian Forest habitats retained as a greenway.
- As a general measure to reduce impacts to breeding birds, it was recommended that blasting and tree falling activities be scheduled to avoid the peak of the breeding bird season, which in this part of Vancouver Island extends from early April to late July.

**Terrestrial Assessment for Remainder of Phase 5 of
Coal Valley Estates, Cumberland**

<u>Table of Contents</u>	<u>Page</u>
EXECUTIVE SUMMARY	<i>i</i>
1.0 INTRODUCTION	1
2.0 METHODOLOGY	1
3.0 RESULTS	3
3.1 Environmental Setting	3
3.2 Plant Communities occurring within the Project Area	3
3.3 Known / Expected Sensitive Elements On or Near the Site	10
4.0 ASSESSMENT OF PONTENTIAL IMPACTS OF SITE DEVELOPMENT & MITIGATION	13
5.0 SUMMARY OF CONCLUSIONS & RECOMMENDATIONS	15
6.0 REFERENCE.....	15

List of Figures

1. Location of Vegetation Plots (red balloons), Salamander Searches (yellow squares), and Owl Call-playback Stations (circles)	2
2. General distribution of plant communities across the Project Area	4
3. Disturbed Grassland/Shrub land covers much of the central and northern parts of the site	5
4. Young Mixed Forest is distributed across the west-central and southeast Parts of the Project Area	5
5. Young Coniferous Forest (left) is concentrated in the southwest part of the Project Area, while Mid-seral Coniferous Forest (right) occurs in Isolated bands.....	6
6. The occurrence of Young Deciduous Forest is limited to a small patch in the South-central part of the Project Area	6
7. Mid-seral Riparian Forest	7
8. Three Sedge Fen Wetlands occur within the Young Riparian Forest type ...	8
9. A small Shrub Carr Wetland occurs in the southeastern part of the Project Area.....	9
10. Regenerating Forest in one of the two areas harvested about 10 years ago in the southern part of the Project Area.....	9
11. Owl call-playback responses at Coal Valley Estates – Oct..7/14.....	11
12. Only the common Western Red-backed Salamander was detected during October 10 th searches for the Blue-Listed Wandering Salamander.....	11
13. Environmental Features of note (in red) overlain on Concept Plan for Remainder of Phase 5	14

List of Tables

1. Summary of wildlife observations in and near the Coal Valley Estates Project Area	12
--	----

Appendices

A. Coal Valley Estates Remainder of Phase 5 Plant List (compiled September 2014).
B. Coal Valley Estates – Remainder of Phase 5: GPS Positions of Vegetation Plots, Owl Survey Stations and Site Features.
C. Portion of Sensitive Ecosystem Inventory Map Sheet 92F.065 covering the Coal Valley Estates Project Area.

Terrestrial Assessment for Remainder of Phase 5 of Coal Valley Estates Development, Cumberland.

1.0 Introduction

This baseline bio-inventory and assessment has been prepared in support of developing the remainder of the Phase 5 Coal Valley Estates property. Readers should note that a separate report was prepared for the combined Phase 6 and Phase 5A sites earlier in October of 2014. The current work was authorized by Project Engineer Mr. Chris Durupt, P.Eng., of McElhanney Consulting Services Ltd. (MCSL), in September of 2014. This report is intended to satisfy the requirement for an Environment Assessment under The Village of Cumberland's Development Permit Guidelines. Specific objectives of the assessment were to:

- 1) Document existing environmental features of the site;
- 2) Determine the potential for rare or threatened vertebrates, vascular plants, or ecosystems to occur on the property;
- 3) Identify potential environmental impacts associated with site development; and
- 4) Provide mitigation and/or compensation strategies to address potential impacts assessed as having ecological significance.

2.0 Methodology

The current assessment involved a background review of standard reference material (in-house and online) as well as fieldwork carried out over September and October of 2014. The main thrust of the fieldwork was description of plant communities occurring across the site and selective inventory for rare or threatened fauna. The latter included time-constrained searches for the Blue-listed Wandering Salamander (*Aneides vagrans*) and a call-playback survey for the Blue-listed Western Screech-owl (*Megascops kennicottii*). Time-constrained salamander searches of 30 minutes duration were completed at six locations within the southern part of the Project Area in early October (Figure 1), several days after the first significant rain event of the autumn. The survey involved intensive searches under and within cover objects (i.e. downed wood and rocks). The owl call-playback survey was occurred on October 7th and involved broadcasting recorded owl calls through an MP3 device connected to a portable megaphone. Two call-playback stations broadcasting in three directions each were used to cover the Project Area (Figure 1).

Vegetation patterns across the site were described using 14 field plots measuring 5 m or 10 m in radius (Figure 1). Plants comprising the tree, shrub and herb strata were recorded on field plot forms, along with qualitative ratings of habitat elements (e.g. forage production, security cover, snag abundance, etc.). In the few locations where disturbance was minimal, plant communities could be classified into ecologically-based Site Associations based on indicator plants in Green and Klinka (1994). However, previous disturbance over much of the Project Area necessitated a more structural approach be taken to classifying plant communities.

- 2 -

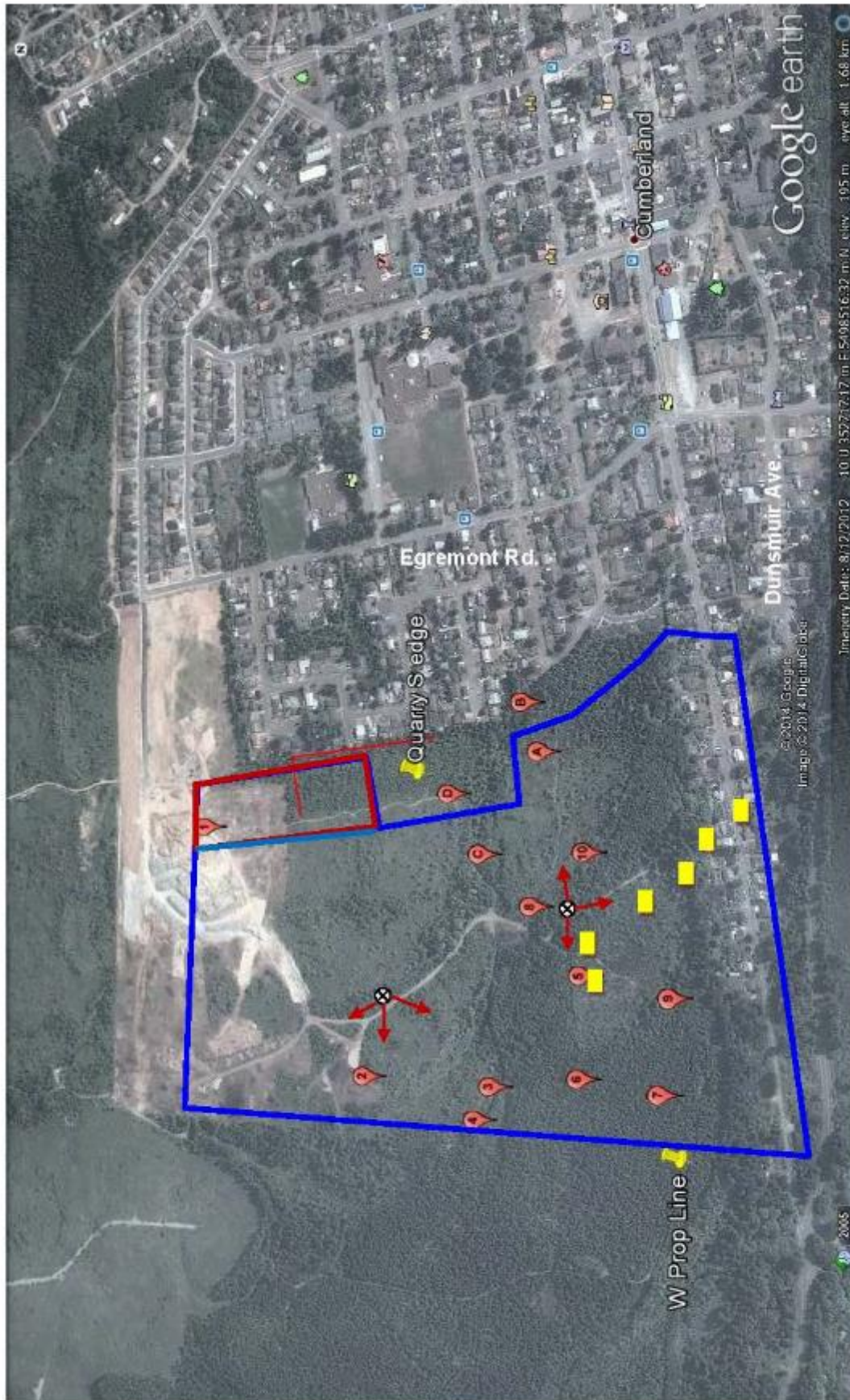


Figure 1. Location of Vegetation Plots (red balloons), Salamander Searches (yellow squares), and Owl Call-playback Stations (circles).



Figure 2. General distribution of plant communities across the Project Area.

Legend

Reg = Regenerating Forest (Harvest Area < 10 yrs old)

Dev = Developed

Fc-y = Young Coniferous Forest

Fc-m = Mid-seral Coniferous Forest

Rip-y = Young Riparian Forest

Wf = Sedge Fen Wetland

Gr/Sh-d = Disturbed Grassland-Shrub Land

Fm-y = Young Mixed Forest

Fd-y = Young Deciduous Forest

Rip-m = Mid-seral Riparian Forest

Ws = Shrub Carr Wetland

- 3 -



Figure 3. Disturbed Grassland/Shrub land covers much of the central and northern parts of the site.



Figure 4. Young Mixed Forest is distributed across the west-central and southeast parts of the Project Area.

- 6 -



Figure 5. Young Coniferous Forest (left) is concentrated in the southwest part of the Project Area, while Mid-seral Coniferous Forest (right) occurs in isolated bands.



Figure 6. The occurrence of Young Deciduous Forest is limited to a small patch in the South-central part of the Project Area.



Fig. 7. Mid-seral Riparian Forest



Figure 8. Three Sedge Fen Wetlands occur within the Young Riparian Forest type.



Figure 9. A small Shrub Carr Wetland occurs in the southeastern part of the Project Area.



Figure 10. Regenerating Forest in one of two areas harvested about 10 years ago in the southern part of the Project Area.

In addition to the above, there are two fairly large patches of regenerating forest in the southern part of the Project Area. These areas support juvenile conifers and deciduous trees, dense patches of Bracken Fern, a variety of native shrubs, and some invasive exotics, most notably Scotch Broom (Figure 10).

Known / Expected Sensitive Elements On or Near the Site

A review of the Wildlife Tree Stewardship (WITS) Nest database found no Bald Eagle, Osprey or Great Blue Heron nests in close proximity. The nearest element in the latter database is a Bald Eagle nest located about 4 km to the east, on the north side of Royston Road (Nest No. BAEA 106-160). The Conservation Data Centre (CDC) Rare Element Database contains one historic record of a Blue-Listed Western Screech-owl east of the subject property (Record No. 16526). However, this record dates from June of 1999, and habitat conditions have likely changed considerably in the intervening 15 years. To help determine if Screech-owls continue to occur on or near the site, a single round of owl call-playbacks was conducted on the evening of October 7th, 2014 using two stations (Figure 1). No owl responses were elicited from Call-playback Station A, in the north-central part of the Project Area. However, two western Screech-owl responses were detected at Call-playback Station B, in the ravine where Mid-seral Riparian Forest occurs (hatched area in Figure 11). These responses, obtained during the earliest part of the Western Screech-owl's daily active period, suggest roosting occurs there, but no suitable nesting cavities were detected in this area.

It should be noted that a number of raptorial birds considered Regionally Significant were observed over or near the site, as the timing of the fieldwork coincided with the autumn raptor migration on Vancouver Island. The raptor sightings included the Red-tailed Hawk, Cooper's Hawk, Sharp-shinned Hawk, and American Kestrel (Table 1). With the possible exception of the Cooper's Hawk, none of these birds are considered likely to nest in habitats present within the Project Area. It is worth noting that none of these species, which were first observed in mid-September, were seen again during the early October fieldwork. They are therefore assumed to be transient individuals.

Time-constrained searches for the Blue-Listed Wandering Salamander found only the more common Western Red-backed Salamander (Figure 12). This salamander was found at three of the six search areas. A list of all wildlife observed at the site is presented in Table 1 below.

No rare plant occurrences were found in or near the subject properties during a search of the CDC database, and none were noted during the site inspections. The potential for rare plants at the site is considered very low, as the habitats associated with such plants (e.g. rock outcrops, vernal seepages, and bogs) are largely absent. Some rock bluffs were noted in the southern end of the id-seral Riparian Forest type, but no unusual plants were detected in this area. Although no rare plants were detected, a relatively uncommon Pacific Yew tree was observed in the southeast part of the Project Area (diameter approx. 30 cm) as well as two large specimens of Douglas-fir along the southern property line.

- 11 -



Figure 11. Owl call-playback responses at Coal Valley Estates – Oct. 7/14.

⊗ → Owl Call-playback Station & direction of broadcast.



Figure 12. Only the common Western Red-backed Salamander was detected during October 10th searches for the Blue-Listed Wandering Salamander.

Table 1. Summary of wildlife observations in and near Coal Valley Estates Project Area.

Species	Type of Observation	Comments
MAMMALS		
Black Bear	Droppings	Several scats and marked trees in southern part of site
Black-tailed Deer	Tracks, Trails, Droppings	Sign common across study area.
Pine Marten	Droppings	Characteristic scat on road SE corner of site.
Cougar	Resident report	Recent reports near Egremont & Kendall Rd area
Red Squirrel	Auditory, Feeding sign	Cone middens and heard in southern part of site.
BIRDS		
American Kestrel	Visual	Perched in north-central part of site.
American Pipit	Visual	Two foraging in northern part of site.
American Robin	Auditory	Common resident species
Bewick's Wren	Auditory	Resident species, nests in shrubs
Cedar Waxwing	Auditory	Heard in riparian forest.
Chestnut-backed Chickadee	Auditory	Resident species, nests in tree cavities
Common Raven	Auditory	Resident species, nests in conifer clusters.
Cooper's Hawk	Visual, Auditory	Seen in heard over west-central part of site.
Dark-eyed Junco	Auditory	Resident species
Hairy Woodpecker	Visual	Primary cavity excavator, favours deciduous forest.
Killdeer	Visual, Auditory	Seen in northwestern part of site.
Northern Flicker	Auditory	Primary cavity excavator
Pileated Woodpecker	Auditory	Primary cavity excavator
Pine Siskin	Auditory	Small flock seen. Resident species
Red-breasted Nuthatch	Auditory	Cavity-nesting bark-gleaner
Red-tailed Hawk	Visual	Coursing over site. No nest structures seen.
Sharp-shinned Hawk	Visual, Auditory	Coursing over site
Spotted Towhee	Auditory	Resident species
Steller's Jay	Visual	Resident but usually nests at higher elevations.
Swainson's Thrush	Auditory	Neo-tropical migrant
Western Screech-owl	Auditory	Two responses from Oct. 7 th survey in ravine.
Winter Wren	Auditory	Resident species
AMPHIBIANS		
Pacific Treefrog	Auditory	Heard to various locations south & central part of site.
Western Red-backed Salamander	Visual	Three found in logs in east-central part of site

As previously mentioned, no Sensitive Ecosystem Inventory polygons occur on the subject properties. However, fieldwork identified one Red-Listed plant community within Mid-seral Riparian Forest (Cw- Salmonberry) and three small areas containing a Blue-listed plant community embedded within the Young Riparian Forest type (Cw- Slough Sedge).

4.0 Assessment of Potential Impacts of Site Development & Mitigation

As an aid to assessing the potential impacts of development, environmental features of note were overlain on the concept plan provided by MCSL. As indicated in Figure 13, the proposed development appears to be a very good fit with the site features, as virtually all of the significant environmental features associated with this site would be protected within proposed green spaces. The exceptions include the unclassified small wetland and a single Pacific Yew tree identified in the southeast part of the Project Area.

As retention of the small Shrub Carr is likely not practical given its isolation from the main watercourse, it is recommended that similar native plants (i.e. Red-osier Dogwood, Pacific Willow) be incorporated into any stormwater detention facilities that might be planned for the development.

Provided its location is identified prior to site preparation, it should be possible to retain the uncommon Pacific Yew tree in the southeastern part of the Project Area. High visibility fencing should be placed around the drip line of this tree to prevent accidental damage to root zones from heavy equipment and /or fill placement.

Currently, the lower part of the main watercourse is used by Blue-Listed Western Screech-owls, and suitable hunting grounds are found within the wetland complexes to the south of the site. However, nesting opportunities for species, which requires relatively large tree cavities, are very limited on the site and surrounding areas. It is therefore recommended that three artificial nesting boxes be installed at intervals within the Mid-seral Riparian Forest habitats retained as a greenway.

As a general measure to reduce impacts to breeding birds, it is recommended that blasting and tree falling activities be scheduled to avoid the peak of the breeding bird season, which on Vancouver Island extends from early April to late July.

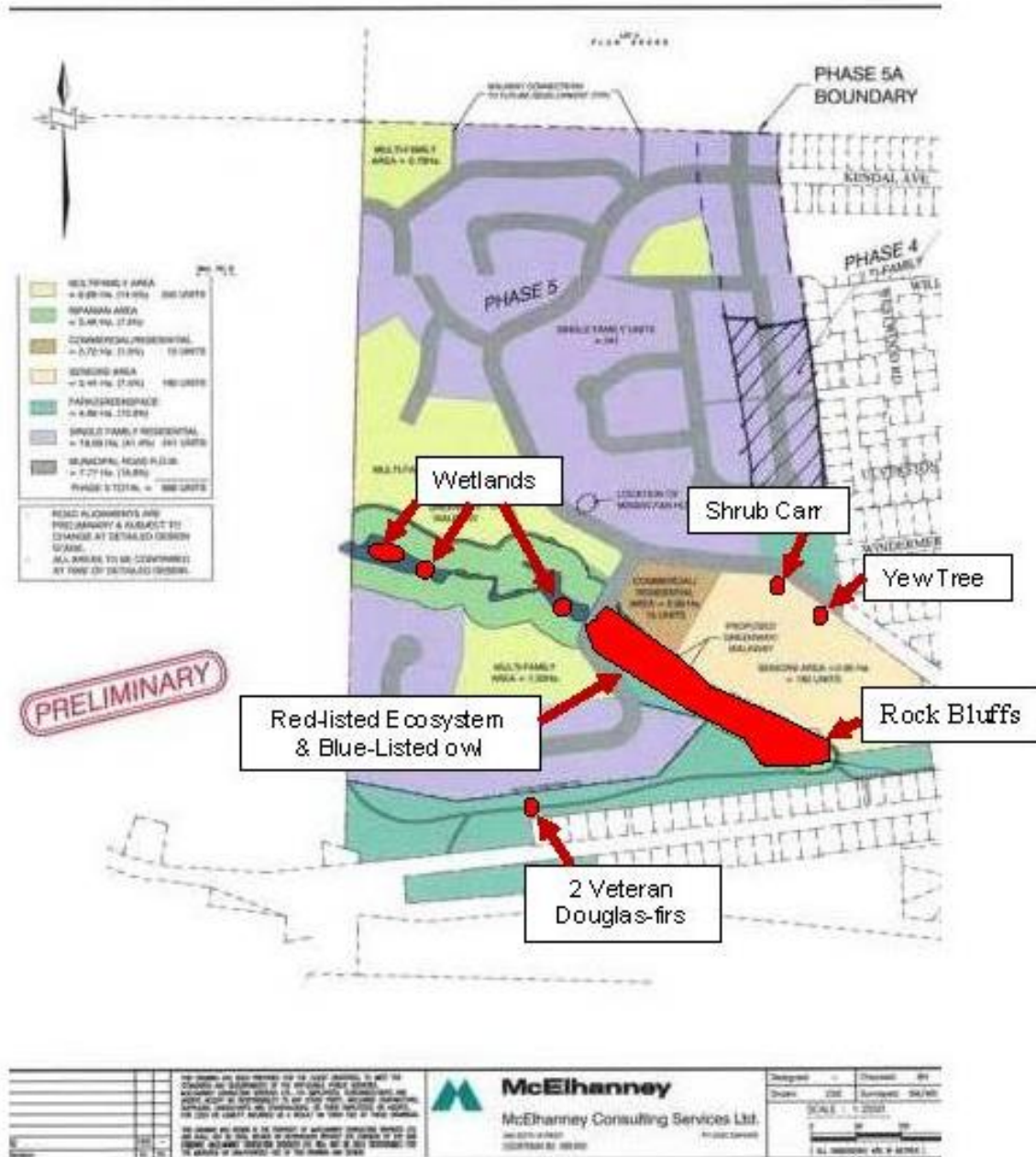


Figure 13. Environmental Features of note (in red) overlain on Concept Plan for Remainder of Phase 5.

5.0 Summary of Conclusions & Recommendations

1. Based on the field investigation and background review, it appears the Concept Plan for the remainder of Phase 5 will adequately protect the most sensitive environmental features occurring on this site within planned green spaces.
2. A small and isolated Shrub Carr wetland in the southeast part of the site will likely be lost to development, but this could be mitigated through similar plantings within stormwater detention facilities elsewhere on the property.
3. It is recommended that fencing be used to protect an uncommon Pacific Yew tree occurring on the southeast part of the property.
4. Opportunities exist to enhance breeding habitats for the Blue-listed Western Screech-owls using the site through installation of 3 artificial nest boxes installed within the proposed greenway in the southern part of the property.

It has been a pleasure to conduct this work on your behalf. Feel free to contact me if you have any queries or require additional input.

Best regards,


Principal Investigator's Signature

J. Materi, R.P.Bio. No. 1128

Reference:

Green, R.N. and K. Klinka. 1994. *A Field Guide to Site Identification and Interpretation for the Vancouver Forest Region*, B.C. Ministry of Forests, Burnaby. 285pp.

- 16 -

APPENDIX A
Coal Valley Estates Phase 5
Plant List (compiled September 2014)

<u>Common name</u>	<u>Scientific name</u>
TREES - 11 species	
Big leaf maple	<i>Acer macrophyllum</i>
Bitter cherry	<i>Prunus emarginata</i>
Black cottonwood	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>
Douglas fir	<i>Pseudotsuga menziesii</i>
Lodgepole pine	<i>Pinus contorta</i>
Pacific yew	<i>Taxus brevifolia</i>
Red alder	<i>Alnus rubra</i>
Western hemlock	<i>Tsuga heterophylla</i>
Western red cedar	<i>Thuja plicata</i>
Western flowering dogwood	<i>Cornus nuttallii</i>
Western white pine	<i>Pinus monticola</i>
SHRUBS - 24 species	
Baldhip rose	<i>Rosa gymnocarpa</i>
Blackcap	<i>Rubus leucodermis</i>
Cascara	<i>Rhamnus pershiana</i>
Dull Oregon grape	<i>Mahonia nervosa</i>
English holly	<i>Ilex aquifolium</i>
Evergreen blackberry	<i>Rubus laciniatus</i>
Hardhack	<i>Spirea douglasii</i> ssp. <i>douglasii</i>
Himalayan blackberry	<i>Rubus armeniacus</i> (discolor)
Pacific crab apple	<i>Malus fusca</i>
Pacific willow	<i>Salix lucida</i> ssp. <i>lasianдра</i>
Prince's-pine	<i>Chimaphila umbellata</i>
Red elderberry	<i>Sambucus racemosa</i> ssp. <i>pubens</i>
Red huckleberry	<i>Vaccinium parvifolium</i>
Red-osier dogwood	<i>Cornus stolonifera</i>
Salal	<i>Gaultheria shallon</i>
Salmonberry	<i>Rubus spectabilis</i>
Saskatoon	<i>Amelanchier alnifolia</i>
Scotch broom	<i>Cytisus scoparius</i>
Sitka mountain-ash	<i>Sorbus sitchensis</i>
Thimbleberry	<i>Rubus parviflorus</i>
Trailing blackberry	<i>Rubus ursinus</i>
Trailing snowberry	<i>Symphoricarpos mollis</i>
Twinflower	<i>Linnaea borealis</i>
Willow(other)	<i>Salix</i> sp.

- 17 -

FERNS & HERBS - 35 species

American brooklime	<i>Veronica beccabunga</i>
Beaked sedge	<i>Carex utriculata</i>
Bird's-foot trefoil	<i>Lotus crassifolius</i>
Bracken fern	<i>Pteridium aquilinum</i>
Broad-leaved starflower	<i>Trientalis latifolia</i>
Canada thistle	<i>Cirsium arvense</i>
Cleavers	<i>Galium aparine</i>
Coastal strawberry	<i>Fragaria chiloensis</i>
Common plantain	<i>Plantago major</i>
Common rush	<i>Juncus effusus</i>

FERNS & HERBS (cont'd)

<u>Common name</u>	<u>Scientific name</u>
Cooley's hedge-nettle	<i>Stachys cooleyae</i>
Dagger-leaved rush	<i>Juncus ensifolius</i>
Deer fern	<i>Blechnum spicant</i>
Fireweed	<i>Epilobium angustifolium</i>
Foamflower	<i>Tiarella trifoliata</i>
Foxglove	<i>Digitalis purpurea</i>
Hairy cat's-ear	<i>Hypochaeris radicata</i>
Henderson's sedge	<i>Carex hendersonii</i>
Herb-robert	<i>Geranium robertianum</i>
Lady fern	<i>Athyrium filix-femina</i>
Large-leaved avens	<i>Geum macrophyllum</i>
Pacific water-parsley	<i>Oenanthe sarmentosa</i>
Palmate coltsfoot	<i>Petasites palmatus</i>
Pearly everlasting	<i>Anaphalis margaritacea</i>
Self-heal	<i>Prunella vulgaris</i>
Skunk cabbage	<i>Lysichiton americanum</i>
Spike trisetum	<i>Trisetum spicatum</i>
Spiny wood fern	<i>Dryopteris expansa</i>
Sword fern	<i>Polystichium munitum</i>
Vanilla-leaf	<i>Achlys triphylla</i>
Violet	<i>Viola sp.</i>
Wall lettuce	<i>Lactuca muralis</i>
Western fescue	<i>Festuca occidentalis</i>
Western trillium	<i>Trillium ovatum</i>
Tansy ragwort	<i>Senecio jacobaea</i>

- 18 -

APPENDIX B
Coal Valley Estates Phase 5
GPS Positions of Vegetation Plots, Owl Survey Stations and Site Features

Description	Easting	Northing
Vegetation Plot 1	352561	5498817
Vegetation Plot 2	352238	5498596
Vegetation Plot 3	352230	5498427
Vegetation Plot 4	352187	5498450
Vegetation Plot 5	352374	5498305
Vegetation Plot 6	352245	5498315
Vegetation Plot 7	352230	5498217
Vegetation Plot 8	352456	5498367
Vegetation Plot 9	352346	5498200
Vegetation Plot 10	352523	5498298
Vegetation Plot 11	352650	5498348
Vegetation Plot 12	352713	5498368
Vegetation Plot 13	352522	5498430
Vegetation Plot 14	352600	5498466
Owl Call 1	352340	5498697
Owl Call 2	352445	5498447
Salamander Search Area 1	352535	5498273
Salamander Search Area 2	352518	5498296
Salamander Search Area 3	352483	5498303
Salamander Search Area 4	352472	5498335
Salamander Search Area 5	352429	5498401
Salamander Search Area 6	352369	5498399
Rock Bluff	352523	5498324
Fd Vets (2) 120cm	352359	5498186
Yew Tree 31 cm	352655	5498415

APPENDIX C
Portion of Sensitive Ecosystem Inventory Map Sheet 92F.065
covering the Coal Valley Estates Project Area





TECHNICAL MEMORANDUM – SITE ALTERATION EFFECTS ON STORMWATER MANAGEMENT

PROJECT: COAL VALLEY ESTATES
CLIENT: COAL VALLEY ESTATES LTD.
PREPARED BY: Chris Durupt, P.Eng.
REVIEWED BY: Bob Hudson, P.Eng.
OUR FILE: 2211-46871-6
DATE: March 7, 2016

We have reviewed MCSL Stormwater Management Plan (SWMP) dated November 24, 2014 and confirm that blasting / deposition as proposed in development permit applications for the remainder of the Coal Valley Estates site (refer to MCSL dwg CDA-3, Rev. PE, attached), will not negatively affect the SWMP as proposed. As such an update to the SWMP is not considered required.

Blasting / deposition is expected to decrease site runoff both pre- and post-development. Blasting will smooth out existing peaks, reducing the average grade which will encourage ponding and infiltration. Deposition will fill existing valleys which will also decrease the average grade and increase the porosity of the sub-grade. An increasing in the porosity of the sub-grade will promote groundwater infiltration. Increasing ponding and groundwater infiltration will serve to reduce overall site runoff both pre- and post-development.

Yours truly,

MCELHANNEY CONSULTING SERVICES LTD.

Chris Durupt, P.Eng.

Reviewed by:

Bob Hudson, P.Eng.

CD/njg

Enclosure

Page 1 of 1

495 Sixth St
 Courtenay BC
 Canada V9N 6V4

Tel 250 338 5495
 Fax 855 407 3895
 mcelhanney.com





495 Sixth St
Courtenay, BC V9N 6V4
Tel. 250-338-5495

DESIGN BRIEF – STORMWATER MANAGEMENT PLAN

RE: Revision 1 - Storm Water Management Plan
Coal Valley Estates
Remainder, D.L. 24, Nelson District, Cumberland, BC

MCSL FILE: 2211-46871-5

PREPARED BY: Chris Durupt, P.Eng.

REVIEWED BY: Bob Hudson, P.Eng.

DATE: November 24, 2014

1.0 INTRODUCTION

The following Stormwater Management Plan (SWMP) has been prepared on behalf of Coal Valley Estates Ltd., in support of ongoing development permit applications for the above noted parcel. The intent of this plan is to set a base line for pre-development (2007) site runoff, develop per hectare performance targets for post-development (based on the BCSWGB and Village Guidelines), and provide preliminary sizing for the proposed mitigation techniques or Best Management Practices (BMPs) required to achieve the performance targets.

2.0 SITE DESCRIPTION

The 46 hectare subject property legally identified as the Remainder of District Lot 24, Nelson District, is located adjacent the western edge of existing development within the Village of Cumberland. The subject property, zoned CDMU-6, is bordered to the east by existing residential developments, to the south by parkland, to the west by a working forest zoned UR-1 and to the north by forested lands zoned RU-1. The CDMU-6 zoning allows for mixed residential and multifamily use.

The rolling topography of the site ranges from 170 – 213 metres above sea level and is bisected east to west by a wetland which drains to the south east. A review of existing flora and fauna, conducted by *Ursus Environmental* in October 2006 shows that the property is located in the Coastal Western Hemlock Biogeoclimatic Zone. The upland areas contain regenerating forest with underbrush consisting of salal, vanilla leaf, blackberry, swordfern, salmonberry and Oregon grape. Vegetation in the moister, low lying area consists of juvenile western red cedar, red alder and salmonberry.



Soil stratigraphy was examined by *Lewkowich Geotechnical Engineering Ltd.* who logged 34 test pits within the subject property during their October 2006 field investigation. Lewkowich's February 2007 Preliminary Geotechnical Assessment states:

The soil conditions consisted generally of a layer of organics, overlying silty sand with some gravel, over dense silty sand glacial till. Bedrock was encountered in most test pits at depths varying from ground surface (TP06-32) to 2.0m (TP06-12). Several test pits were terminated in very dense glacial till.

The upper sand material (overburden) was generally found to be silty, compact to dense, with some gravel. This material should be suitable for infiltration of storm water infiltration. Further permeability testing would be necessary to determine the permeability characteristics of this material.

Ground water seepage was not encountered during the testpits.

3.0 EXISTING RUNOFF

Most of the site is located within the Maple Creek Watershed, with a small portion of the south west corner located within the Perseverance Creek Watershed. The northern half of the property drains to the Maple Lake wetlands, and the southern portion of the site to the Maple Creek Watershed. A small remaining area within the south west quadrant of the site drains to Perseverance Creek.

A hydraulic model was developed using SWMM software, enabling analysis of existing site response to a variety of design rainfall events. Simulations were completed for the MAR (Mean Annual Rainfall), and synthetic, 24-hour SCS Type 1A distribution, for 2, 5, and 10 Year rainfall events (derived from 32 years of data from Environment Canada's Puntledge rain gauge (1021990)). For simplicity, a single 1.0 hectare catchment has been modeled to set a base line for existing site runoff, define post-development performance targets, and provide preliminary sizing for the proposed mitigation techniques, all on a per unit area basis. This method allows runoff for each phase of the development to be analyzed on a volumetric discharge of *cubic metres per hectare (m³/ha)* and a peak discharge of *litres per second per hectare (lps/ha)*.

Model input parameters, based on existing soils information (provided by *Lewkowich Geotechnical Engineering Ltd.* in their February 2007 Preliminary Geotechnical Assessment), are summarized in **Table 1** overleaf. Results of the modeled, pre-disturbed (2007) site response are indicated in **Figure 1** overleaf, and summarized in **Table 2** double overleaf.



Table 1: Existing Site-Specific Storm Water Modeling Parameters for a 1 hectare sample area

Parameter	Existing
Area (ha)	1.0
Width (m)	50
Slope (%)	12
% Impervious	15
N Imperv	0.013
N Perv	0.2
Dstore Imperv (mm)	2
Dstore Perv (mm)	7
Zero % imperv	25
Curve #	70
Drying time (days)	7
Subarea routing	PERV

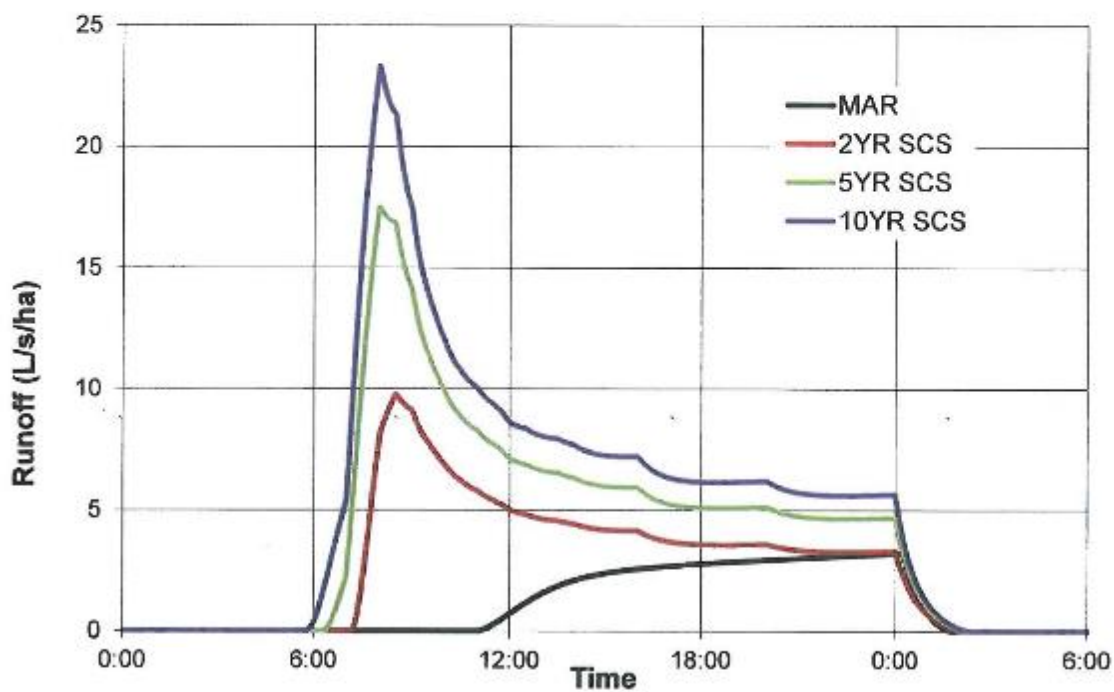


Figure 1: Hydrographs for the MAR, 2, 5, and 10 Year Rainfall Event under Present Day Site Conditions



Table 2: Existing Runoff Quantities for a 1 hectare sample area

24-hour Distribution	Total Precipitation (mm)	Existing Runoff	
		Total (m ³ /ha)	Peak (lps/ha)
MAR	48	120	3.2
2-Year	73	285	9.8
5-Year	95	445	17.5
10-Year	110	560	23.3

Peak discharge (runoff) from the site is high when compared to other sites within the Valley. Higher than normal discharge rates can be attributed to steep slopes, minimal soil cover atop bedrock and the intense rainfall patterns unique to the Cumberland area.

4.0 PERFORMANCE TARGETS

Performance targets have been developed based on the Village of Cumberland Bylaw No. 990, Section 10.1.5.17) which requires rainwater management in accordance with the Water Balance Model. The British Columbia Stormwater Planning Guidebook (BCSWPG), and Beyond the Guidebook, a 2007 revised publication which builds on the BCSWPG are the baseline for the Water Balance Model.

The BCSWPG suggests that the complete spectrum of rainfall events should be evaluated with the goal that post development flow rates should mimic pre-development rates. The BCSWPG also recognizes that the rainfall capture targets will depend on the site and watershed-specific conditions. Beyond the Guidebook introduces the following three performance targets to facilitate implementation of the integrated strategy for managing the complete rainfall spectrum:

Rainfall Capture – “Rainfall capture” measures include infiltration, evapotranspiration, or re-use.

Runoff Control – delay overflow runoff by means of detention storage with ‘runoff control’ and release into a receiving body at a rate that mimics pre-development flow rates.

Flood Mitigation – reduce flooding by providing sufficient hydraulic capacity to “contain and convey” ensuring that large storm events are safely conveyed by the storm drainage system.

The BCSWPG targets have been developed based on the statistical distribution of rainfall intensities in British Columbia. The datum used to measure hydrological impact is the so-called “Mean Annual Rainfall” (MAR). The MAR is defined as the rainfall event which is exceeded, on average, once per year. Rainfall events up to and including the MAR, equate to approximately 95% of annual rainfall volume. Conversely, extreme storms in excess of the MAR typically account for less than 0.4% of all rainfall events.



Based on the results of the SWMM analysis and the design objectives outlined above, the Performance Targets for the remainder of the Coal Valley development are as follows:

Table 3 – Performance Targets

	Small Storm Goal	Medium Storm Goal		Large Storm Goal
	MAR 24hr rainfall event	2 year, 24hr rainfall event	5 year, 24hr rainfall event	10 year, 24hr rainfall event
Target peak runoff rate (l/s/ha)	3.2	9.8	17.5	23.3
Target peak volume rate (m ³ /ha)	120	285	445	560

5.0 DESIGN ELEMENTS

The proposed Low Impact Development (LID) strategies to be implemented for this project have been developed to promote onsite capture of runoff and groundwater recharge. Properly employed, this approach will mitigate peak runoff rates, and provide qualitative treatment of runoff, prior to discharge. The following LIDs are proposed for the site:

5.1. Amended Soil

The use of amended soils will be fundamental to achieving a water balance for this site. Properly functioning amended soil can significantly increase the amount of initial abstractions of the pervious area of the site. Initial abstractions reflect the depth of rainfall lost to depression storage and evapotranspiration. A minimum of 300 mm of topsoil which meets the revised MMCD Specification outlined below should be placed on all pervious areas of the site. This soil can either be stripped from the site and re-used (if available) or imported.

To account for compaction and clogging over time, the post-development mitigated model has assumed 12 mm of initial abstractions, for all pervious surfaces. This reflects the long term performance of 300 mm of amended soil inclusive of a FOS of 2. All amended soils should conform to the MMCD specification for growing medium, with the following amendments:

- Lawn Areas: topsoil should meet or exceed the MMCD specification for growing medium with the organic content amended to be 8%; and,
- Planters, Shrub and Groundcover Areas: topsoil should meet the MMCD specification for growing medium with organic content of 8 to 15%.

Refer to MMCD and Green Infrastructure Partnership, "Topsoil: Just How Do You Obtain a Performing Topsoil Layer, to Advance Rainwater Management & Water Conservation" for more information on amended soils.



5.2. Retention of Native Vegetation

Wherever possible, the native vegetation should be retained and/or re-established post development. Vegetation reduces runoff by retaining, evapotranspiring and aiding in infiltration.

5.3. Infiltration Galleries

Runoff from buildings and streets will be directed to infiltration galleries where existing topography and soil stratigraphy allow. **Figure 2** overleaf, shows a typical lot level infiltration gallery to collect and infiltrate runoff from buildings. Lot level infiltration galleries will be sized dependant on the building footprint and the soil stratigraphy of the lot. Each lot level gallery will be equipped with a grit sump upstream of the gallery and an overflow connected directly to the municipal sewer. Catchbasins will also be connected to infiltration galleries via underflow piping. The catchbasin will serve as a grit sump, adding longevity to the infiltration gallery and the overflow will be connected to the municipal sewer. **Figure 3** overleaf, shows a typical catchbasin infiltration gallery. Lot level and catchbasin infiltration galleries will filter sediment and hydrocarbons from runoff, introduce additional infiltration and provide additional storage volume for larger, less frequent events.

Infiltration galleries have been modeled with an estimated saturated hydraulic conductivity for the site of 40 mm/hr, an average base area of 30 m² per hectare and an average effective storage area of 10 m³/hectare. The galleries will be filled with drain rock (porosity approximately equal to 0.4) and lined with filter fabric. A longevity factor of 0.75 was used in this analysis to account for plugging of pore spaces and degradation over time. To ensure long term function, each gallery will be situated downstream of a grit sump manhole or catchbasin.

5.4. Wetland Attenuation

Per the Village's Stormwater Drainage Master Plan, wetlands within the subject property, as well as the larger Maple Creek and Perseverance Creek water sheds will form an integral part of managing runoff from this site. Minimal overburden atop shallow bedrock, characteristic of the upland areas of this site make for limited storage potential, or onsite capture/retention of runoff. Wetland storage, as was used for previous phases of development, will continue to be used to attenuate peak volume and discharge in excess of that which can be retained onsite through the implementation of the above noted LIDs. Wetland attenuation has not been modeled at this time. The vast capacity of the downstream wetlands is estimated to be immensely greater than the slight increase in runoff due to the proposed Low Impact Development strategies to be implemented for this development.

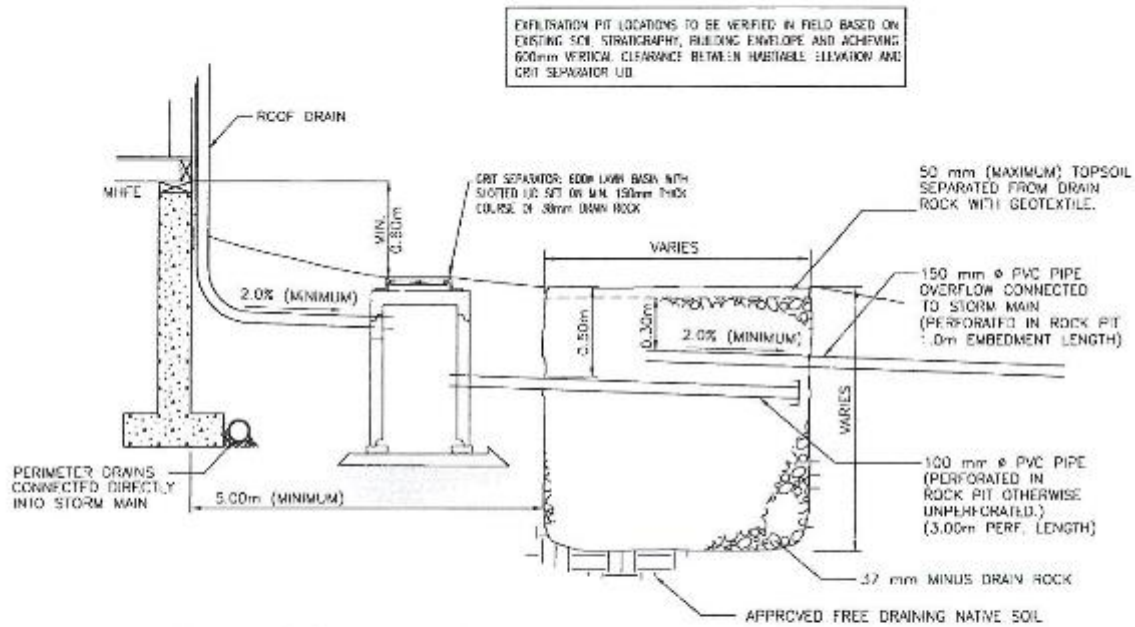


Figure 2: Typical Lot Level Infiltration Gallery

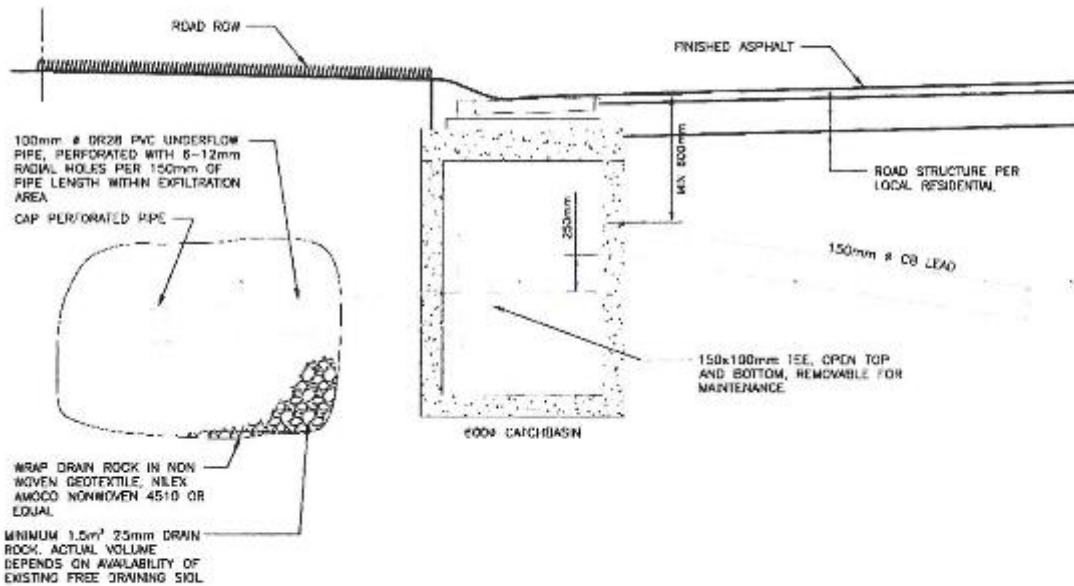


Figure 3: Typical Catchbasin Infiltration Gallery



6.0 QUALITY

Removal of Total Suspended Solids (TSS) will be achieved by catchbasin sumps and grit sumps upstream of all infiltration galleries. Groundwater recharge through infiltration galleries will serve to further improve/polish this surface runoff prior to release into the Village's downstream stormwater infrastructure and wetlands.

7.0 POST-DEVELOPMENT RUNOFF

A 1.0 hectare post-development sample site was modeled using SWMM software. Simulations for both mitigated and non-mitigated site response were completed for the MAR and synthetic, 24-hour SCS Type 1A distribution 2, 5, and 10 Year rainfall events (derived from 32 years of data from Environment Canada's Puntledge rain gauge (1021990)). Model input parameters derived are summarized in **Table 4** overleaf. The post development mitigated model includes the LIDs design elements described above. Results of the modeled site response are indicated in **Figures 4 to 7** double overleaf.



Table 4: Site-Specific Storm Water Management Parameters for a 1 hectare sample area

Parameter	Existing	Post-Development	Post-Development Mitigated
Area (ha)	1.0	1.0	1.0
Width (m)	50	280	280
Slope (%)	12	5	5
% Impervious	15	60	60
N Imperv	0.013	0.013	0.013
N Perv	0.2	0.15	0.15
Dstore Imperv (mm)	2	2	2
Dstore Perv (mm)	7	5	12
Zero % imperv	25	25	25
Curve #	70	90	80
Drying time (days)	7	7	7
Subarea routing	PERV	OUTLET	IMPERVIOUS

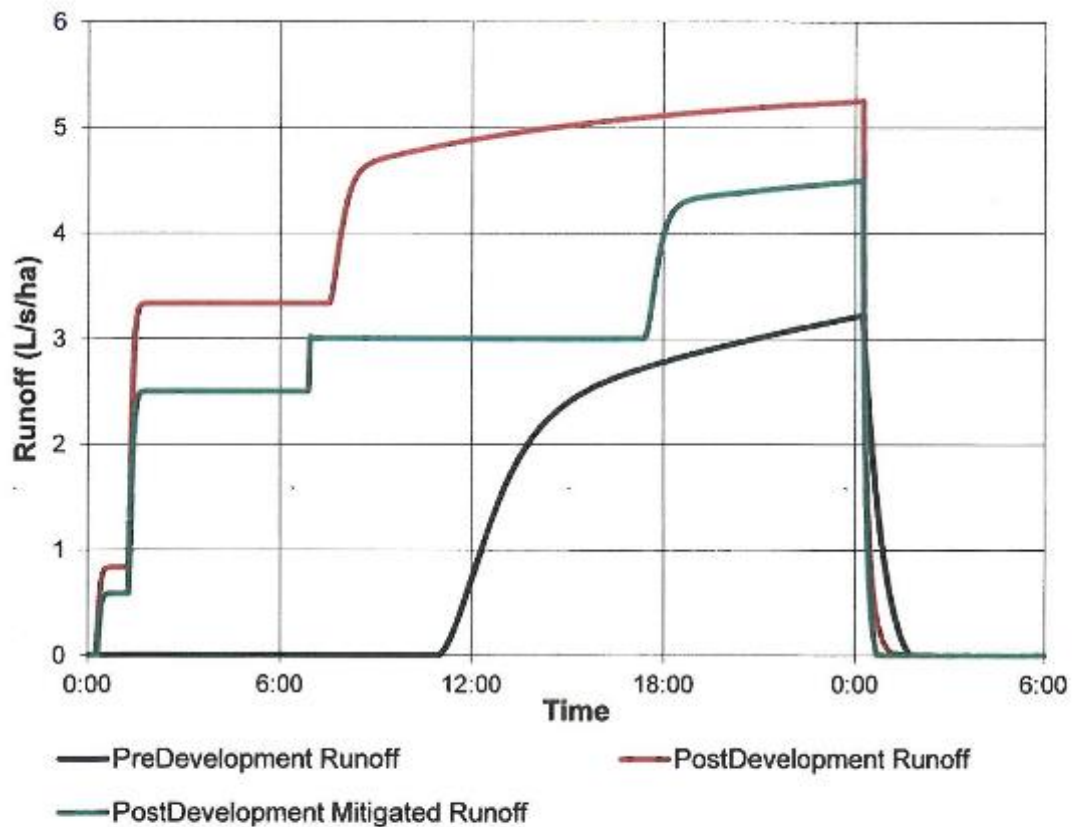


Figure 4 – LID Performance: MAR Event

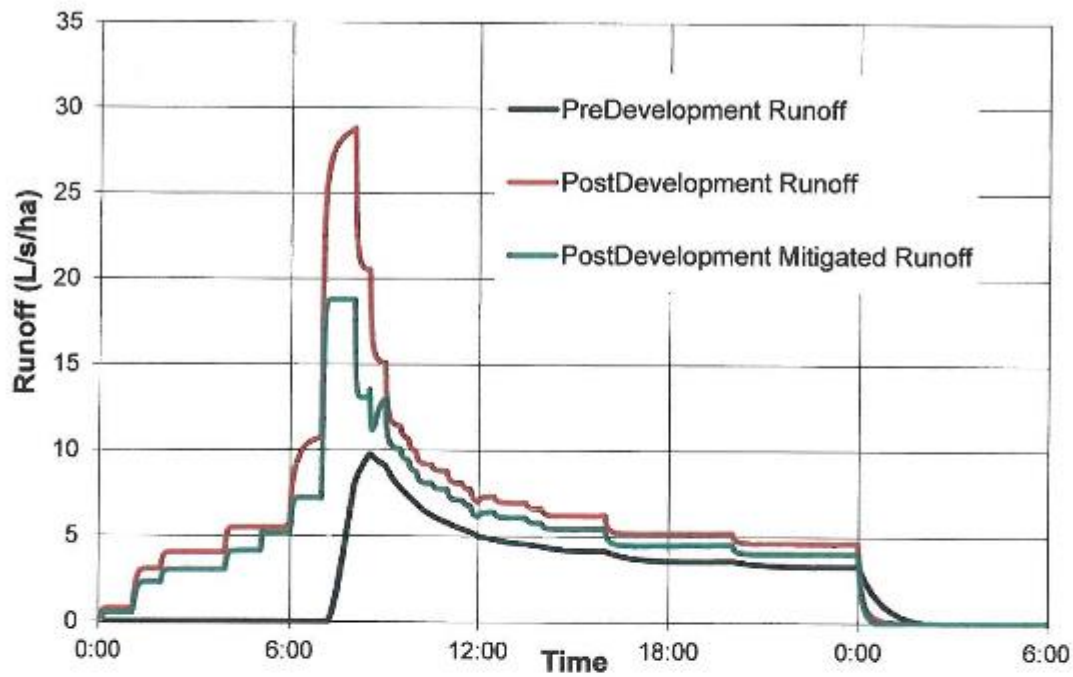


Figure 5 – LID Performance: 2YR Event

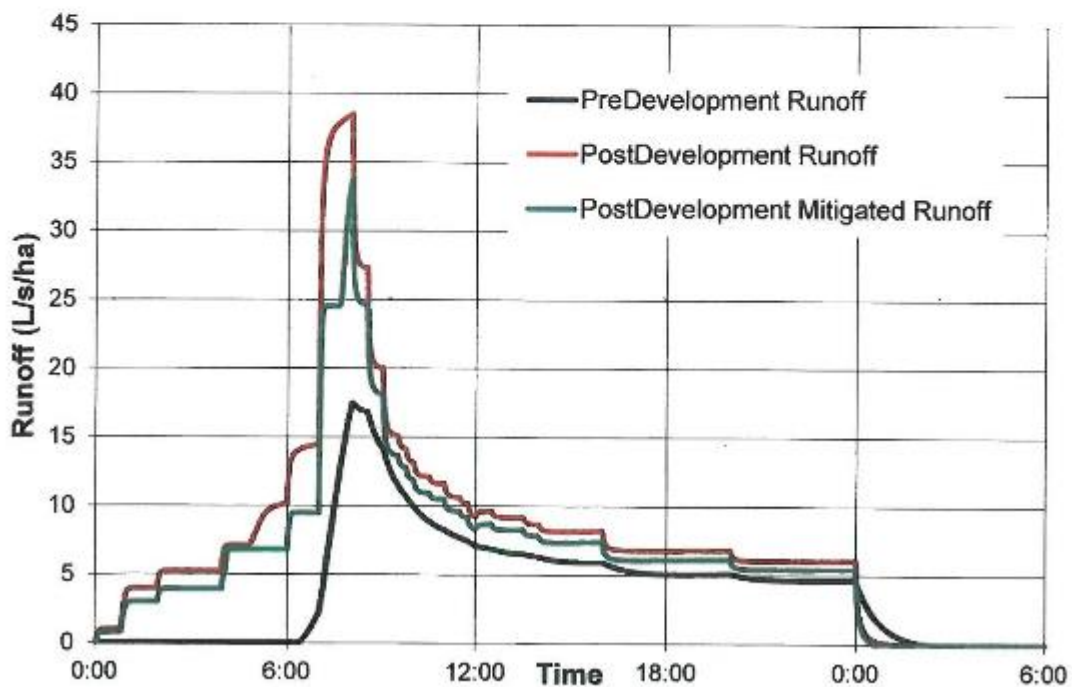


Figure 6 – LID Performance: 5YR Event

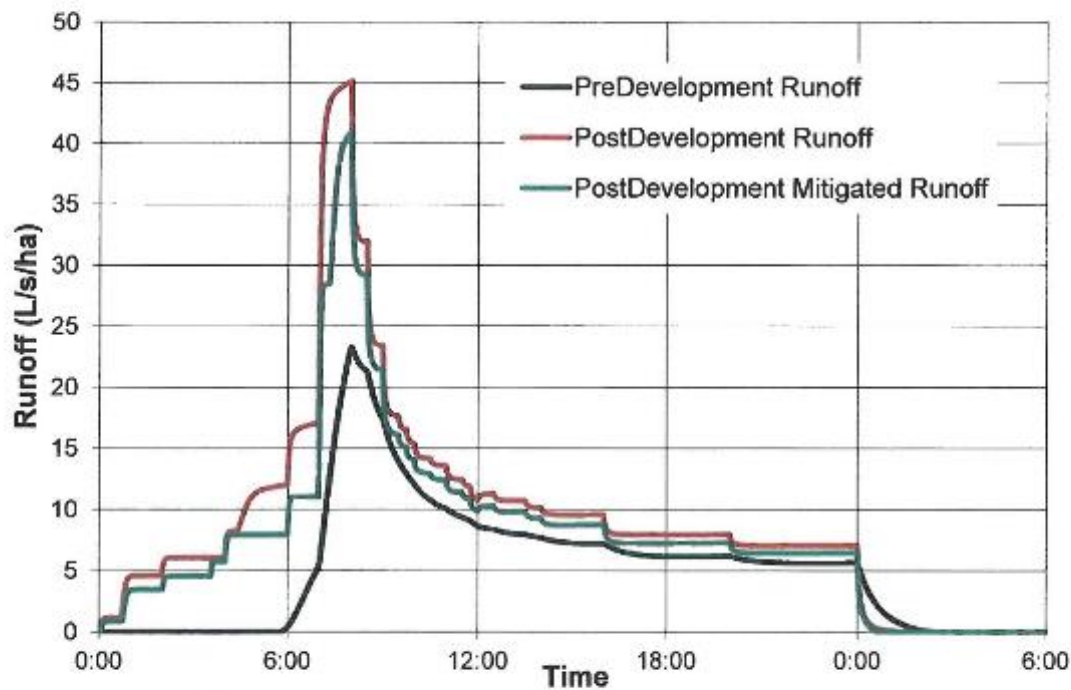


Figure 7 – LID Performance: 10YR Event

Table 5 below, compares pre- and post-development simulated runoff quantities for the site on a per hectare basis. The analyses show that with the use of LIDs as proposed herein, post-development runoff can be infiltrated, evapotranspired, detained and released at a reduced rate. Peak runoff in excess of pre-developed rates as well as increased post development runoff volume, will be attenuated by the downstream wetlands.

Runoff upto and including the 10 year peak flow will be conveyed by the minor system to the existing downstream Village infrastructure. Flows in excess of the 10 year peak will be conveyed via existing and proposed overland flood routing.

Table 5: Pre- and Post-Development Runoff Quantities per Hectare of Land

24-Hour Distribution	Total Precipitation (mm)	Existing		Post-Development (No LID)		Post-Development (With LID)	
		Total (m ³ /ha)	Peak (lps/ha)	Total (m ³ /ha)	Peak (lps/ha)	Total (m ³ /ha)	Peak (lps/ha)
MAR	48	120	3.2	380	5.3	270	4.5
2-Year	73	285	9.8	620	28.8	500	18.8
5-Year	95	445	17.5	830	38.5	700	33.8
10-Year	110	560	23.3	980	45.1	840	41.0

