

**VILLAGE OF PEMBERTON  
-COMMITTEE OF THE WHOLE MEETING AGENDA-**

**Agenda** for the **Committee of the Whole** of Council of the Village of Pemberton to be held Tuesday, September 21, 2021, at 1:00 p.m. via electronic means through a ZOOM Webinar. This is Meeting No. 218.

*“This meeting is being recorded as authorized by the [Village of Pemberton Video Recording & Broadcasting of Electronically Held Council, Committee, and Board Meetings](#)”*

**\* All Council and Staff will be attending the meeting electronically. Instructions to view the meeting can be found [here](#) . Link to the Zoom Webinar: <https://us02web.zoom.us/j/81140799681>**

---

Item of Business	Page No.
<b>1. CALL TO ORDER</b>	
In honour of the Lil'wat7ul, the Village of Pemberton acknowledges that we are meeting within the unceded territory of the Lil'wat Nation.	
<b>2. APPROVAL OF AGENDA</b>	1
<b>Recommendation:</b> THAT the Agenda be approved as presented.	
<b>3. ADOPTION OF MINUTES</b>	
<b>a) Committee of the Whole Meeting No. 216, June 1, 2021</b>	3
<b>Recommendation:</b> THAT the minutes of the Committee of the Whole Meeting No. 217, held Tuesday, August 31, 2021, be approved as circulated.	
<b>4. Draft Building Bylaw</b>	6
<b>Recommendation 1:</b> THAT the Committee of the Whole provide input regarding the draft Building Bylaw.	
<b>Recommendation 2:</b> THAT the Committee of the Whole recommend to Council that Staff be directed to proceed with stakeholder consultation regarding referencing the Energy Step Code for Part 3 buildings.	
<b>Recommendation 3:</b> THAT the Committee of the Whole recommend to Council that Chris Derouin be appointed to the position of Plumbing Official for the Village.	
<b>5. DELEGATION</b>	
<b>a) Rob Ringma, Senior Manager, Government Relations - BC Transit Update</b>	
<b>6. Electronic Meetings – Response to COVID-19 Legislated Changes</b>	126
<b>Recommendation 1:</b> THAT the Committee of the Whole provides direction regarding facilitating electronic and hybrid meetings after September 28, 2021.	
<b>Recommendation 2:</b> THAT the Committee of the Whole provides comment on amending Council Procedures Bylaw No. 788, 2015, to permit electronic council, committee, and commission meetings to be held electronically subject to specified conditions.	
<b>Recommendation 3:</b> THAT the Committee of the Whole recommends to Council that Staff be directed to draft an amendment to Council Procedures Bylaw No. 788, 2015, to permit	

electronic attendance at council, committee, and commission meetings for review at a future Committee of the Whole Meeting (or we could put a set date);

**Recommendation 4: THAT** the Committee of the Whole recommends to Council that Staff be directed to present at a future meeting of Council recommendations for meeting space along with suitable hardware and software for the facilitation of electronic meetings.

## **7. ADJOURNMENT**

**VILLAGE OF PEMBERTON  
-COMMITTEE OF THE WHOLE MEETING MINUTES-**

**Minutes** for the **Committee of the Whole** of Council of the Village of Pemberton held Tuesday, August 31, 2021 at 4:00 p.m. via electronic means through a ZOOM Webinar. This is Meeting No. 217.

---

**ATTENDING:** Mayor Mike Richman  
Councillor Ted Craddock  
Councillor Leah Noble  
Councillor Amica Antonelli  
Councillor Ryan Zant

**STAFF:** Nikki Gilmore, Chief Administrative Officer  
Lisa Pedrini, Manager of Development Services  
Cameron Chalmers, Contract Planner  
Colin Brown, Planner 2  
Laura Murphy, Project & Research Coordinator  
Vinka Hutchinson, Communications & Grant Coordinator  
Gwendolyn Kennedy, Legislative Assistant

**PUBLIC:** 2 (Applicants)

**MEDIA:** 1

***Please Note: This meeting was held electronically, and all members of Council, Staff and Public attended through electronic means. A recording of the meeting was made available to the public & media.***

---

**1. CALL TO ORDER**

At 4:07 p.m. Mayor Richman called the August 31, 2021 Committee of Whole meeting to order.

In honour of the Lil'wat7ul, the Village of Pemberton acknowledges that we are meeting within the unceded territory of the Lil'wat Nation.

**2. APPROVAL OF AGENDA**

Moved/Seconded

**THAT** the agenda be approved as presented.

**CARRIED**

### 3. ADOPTION OF MINUTES

#### a) Committee of the Whole Meeting No. 216, Tuesday, June 1, 2021

Moved/Seconded

**THAT** the minutes of Committee of the Whole Meeting No. 216, held Tuesday, June 1, 2021, be adopted as circulated.

**CARRIED**

### 4. Request for Direction – LiveShare Co-Living Proposal, 7340 Crabapple Court

Cameron Chalmers, the Village's Contract Planner, presented a report describing the proposed LiveShare housing concept and the parking variance that would be necessary for the project to proceed, explaining that the unusually large variance prompted Staff to seek the Committee's direction at this early stage of the development permit application.

Mayor Richman invited the proponents to address the Committee. Jake McEwan, agent for the owner, Pemberton Gateway Limited Partnership, shared a presentation describing the proposal and highlighting the benefits of the co-living concept to future residents and to the community. Mr. McEwan described the proposed alternatives to individual car ownership that would reduce the need for parking, including a ride share app currently under development, two car-share vehicles to be parked on site, ten bicycles, and a 30-passenger van. Additionally, the rentals will be targeted at a young demographic that typically does not have cars, further reducing the need for parking. Mr. McEwan noted that Pemberton residents would be offered the opportunity for rentals one month in advance of the offer being opened to the public.

Councillors requested clarification regarding guarantees that rent would remain in the range of \$900 per month and that the proposed car ownership alternatives would remain available should affordability become an issue in the future.

Moved/Seconded

**THAT** the Committee of the Whole recommend to Council that Staff be directed to work with the applicant for the proposed development of a co-living, multi-family residential development located at 7340 Crabapple Court, which will include a separate development variance permit application for the requested parking variance.

**CARRIED**

### 5. ADJOURNMENT

Moved/Seconded

**THAT** the August 31, 2021, Committee of Whole meeting be adjourned at 4:50 p.m.

**CARRIED**

---

Mike Richman  
Mayor

---

Sheena Fraser  
Corporate Officer

**Date:** September 21, 2021

**To:** Nikki Gilmore, Chief Administrative Officer

**From:** Avy Woo, Chief Building Official

**Subject:** Draft Building Bylaw

---

## **PURPOSE**

The purpose of this report is to present for Committee of the Whole review, the draft of an updated Building Bylaw.

## **BACKGROUND**

Building Bylaw No. 867, adopted July 31, 2019, provides the regulatory framework needed to administer the daily operation of building permits. After using the bylaw for two (2) years, Staff are recommending a set of administrative amendments to improve the effectiveness of the bylaw. Staff considered the new Model Building Bylaw provided by the Municipal Insurance Association of BC (MIABC) and a sample bylaw provided by Lidstone and Associates and have adopted some of the suggested wording. Due to the complexity of managing the numbering of bylaw subsections when new sections are added, a new bylaw has been prepared rather than an amending bylaw.

Significant changes are discussed below with the relevant bylaw sections noted.

## **DISCUSSION & COMMENTS**

### **1. *Building Official (Section 7.3)***

Section 7.3 has been added to grant the Building Official the authority to issue Stop Work, Work Without Permit, Do Not Occupy, and Unsafe to Occupy notices. While the current bylaw provides for Stop Work and Do Not Occupy situations, Staff are proposing the addition of Work Without Permit and Unsafe to Occupy notices to ensure that these circumstances which are occasionally encountered in construction are included and are differentiated from Stop Work and Do Not Occupy situations.

### **2. *Revoking Permits (Section 7.4)***

Staff are proposing to add administrative language to authorize the Building Official to revoke an issued permit prior to occupancy. Revoking a permit would occur only in the rare circumstance when other regulatory steps have failed to resolve a situation.

### **3. *Responsibilities of Owners, Owner's Constructor, and Registered Professionals (Parts 8, 9, 10)***

These sections are largely based on wording from the MIABC Model Bylaw. The clauses are administrative and will provide a more robust framework for managing construction infractions, such as soil runoffs, storage of materials during construction, and damages to municipal works.

Section 8.1 has been expanded to identify some additional situations where a permit is required. The list is intended to clarify the general requirement for permits under Section 4.1.

#### **4. *Stale Permits and Applications (Sections 11.4, 18.3)***

Staff are proposing administrative provisions to assist with managing stale permits and permit applications, including applications that are incomplete upon intake, permit applications that require additional information, permits where construction has been abandoned, and permits that have never received a final inspection or occupancy permit. Currently 44 files fall into this broad category and are being actively managed by Staff. Moving forward, the following proposed changes will provide clarification for Staff and permit holders and applicants:

- Section 11.4 authorizes the Building Official to cancel an application when the applicant fails to pay for and pick up a permit within 90 days of being informed that the permit is ready, and when the applicant fails to provide information or documentation within 60 days of being requested to do so by the Building Official.
- Section 18.3 is amended to add that a permit expires when there is no request for an inspection or submission of a field review by a registered professional within 12 months of the last recorded inspection.
- A building permit is considered to have been issued as of the date it is signed by the Building Official (section 18.4).
- Where a permit has expired and there was work done up to the expiry date, work up to the date of the last inspection is deemed to be approved work. A new permit to finish the project would cover any outstanding work and such work would be subject to any new codes or bylaws at the date of the new application.

As each file is unique, Staff will work collaboratively with owners to facilitate permit issuance, occupancy, and closure of the file.

#### **5. *Applications for Tenant Improvement Permits (Part 14)***

Part 14 has been added to clarify the requirements for tenant improvement permits, as the full permit application required for a new build may not be necessary. The wording in this section assigns the authority to determine application requirements to the Building Official and is intended to streamline the application process for these permits.

#### **6. *Fees and Charges (Part 17)***

Section 17.15 adds reference to Fees and Charges Bylaw No. 905, 2021. For convenience, the draft schedule of fees and charges has been attached to this report at **Appendix C**. An amendment to Fees and Charges Bylaw No. 905, 2021, adding this schedule, will be brought to Council for consideration concurrently with the building bylaw.

#### **7. *Valuation for Permit (Sections 17.2 and 17.3, 27.7)***

A new definition for “cost of construction” and a full description of the hard and soft costs that contribute to it are added. Methods of determining cost of construction include the use of a 3<sup>rd</sup> party valuation tool such as the Marshall and Swift figures, proof of construction contracts, and declaration by the owner. Any declaration of cost would be verified by Staff at permit issuance or occupancy by comparison to typical cost per square metre of floor area.

#### **8. *Security Deposit (Sections 17.6, 17.7, 17.12, 17.13, 17.14)***

The wording regarding the security deposit has been broadened to include damage to trees and their root systems as well as Village site servicing works. Administrative language on how and when to provide the return of these securities has been added.

#### **9. *Accepting Plumbing Works (Section 19.11 and 19.12)***

Staff are proposing an alternate method of accepted plumbing work by licensed plumbing contractors using an authorization for the declared work. This system is used in other local governments including the City of Victoria to address staffing resources and workloads and will allow the Building Official to accept the declaration of a licensed plumber and permit holder in lieu of inspection. An audit process is also proposed to provide the checks needed, where another licensed plumber will inspect the work. The cost of these 2<sup>nd</sup> party inspections will be the responsibility of the owner.

Staff have revised the language around plumbing permits and inspections to refer to the Village Plumbing Official rather than the Building Official. As there is currently no person appointed to this position for the Village, Staff have added a recommendation to this report that the Committee recommend to Council that Chris Derouin be appointed to the position of Plumbing Official for the Village. Mr. Derouin has recently obtained the qualification of Level 1 Plumbing Official with the Building Officials' Association of BC.

#### **10. *Pools and Ponds (Part 21)***

Pool and pond regulations are established primarily to ensure that safety standards are met. This part clarifies that for a seasonal pool that is not emptied daily, a permit is required the first time it is installed. Staff are proposing enhanced requirements for pools or ponds on hillside or sloping lots, including a geotechnical report and an engineered design.

#### **11. *Building Relocation (Part 22)***

Part 22 is added to clarify that relocating a building to or within the Village requires a permit and certification by a registered professional that the building substantially conforms to current Building Code. This is an important provision as it ensures that a building constructed elsewhere, such as the Lower Mainland, shall be constructed to meet current, local conditions such as snow load.

#### **12. *Occupancy Requirements (Part 27)***

Staff are proposing changes for occupancy permits to provide a better framework to deal with the various scenarios anticipated at occupancy:

a) ***Building Shell*** – the Building Official may issue an approval for a building shell, which is not a full occupancy. We encounter this situation with the industrial buildings where the owners may build the shell only and the subsequent tenants would apply for permits to finish the space for occupancy.

b) ***Provisional Occupancy*** - Staff have noted that owner builders frequently move into their unfinished new homes without requesting occupancy inspections and permits. While Staff are empathetic with owner builders struggling with the high cost of rental accommodation while building, living in an unfinished space presents safety concerns. Additionally, once an owner has moved into their new home, they may be less inclined to complete the remaining work and achieve final inspection and occupancy. A provisional occupancy permit is a means of allowing owners to live in their new homes, while completing the work, once essential life safety systems are in place. The permit, issued with an expiry



date, will provide an incentive for owner builders to complete the work and will allow the Building Official some control over the process.

Provisional occupancies may also apply to buildings that are largely finished but with site and landscape work that has not been finished due to weather or other delays. Staff may require a performance security for the outstanding work as another tool to encourage the owner to finish the work. Fees are proposed to administer these discretionary approvals.

- c) **Re-evaluation of fees** – as construction may change during the project, it is proposed that Staff may re-evaluate fees against the cost of construction at occupancy (section 27.7). This tool may be employed if the cost of construction is disputed at permit issuance. Staff may request a consolidated list of all contracts of hard and soft costs at occupancy to verify an owner's declaration of cost.

### 13. **BC Energy Step Code (Part 28)**

Pemberton adopted the Energy Step Code under Building Bylaw 867, 2019. The milestone dates of January 1, 2020, and January 1, 2021, have passed. Staff are proposing amendments to collapse the requirements to the latest requirements post January 1, 2021. Reference to Part 9 commercial buildings has been removed and wording added to clarify what building types were originally intended. Staff researched into the applicable tools available to achieve compliance for these buildings and will work with our stakeholders to be flexible regarding the acceptable models.

Staff note the energy steps have not changed with these administrative amendments. Thus, industry consultation is not required for these changes. Staff request Council to consider advancing the Energy Step Code by endorsing Staff to work with stakeholders to develop the next steps to include complex buildings.

The following analysis was prepared by Staff for consideration of the Part 3 (complex buildings) Energy Step Code endorsement:

#### **Energy Step Code Next Steps:**

BC Energy Step Code did not initially apply to Part 3 (complex) buildings outside of Climate Zone 4. This limitation has since been removed and Energy Step Code requirements are in place for Part 3 buildings in all climate zones. Thus, the Village may consider adding reference to Part 3 buildings, to come into effect after suitable consultation with industry.

Part 3 buildings contain four (4) storeys or more, or are over 600 square metres in building area, and include apartment buildings, large townhouse buildings, and large commercial, industrial, and institutional buildings. The Energy Step Code considers Part 3 wood-frame residential, Part 3 concrete residential, and Part 3 commercial buildings separately, with achievement of the Steps understood to be more challenging for concrete residential and commercial buildings. Table 1 shows how the upper and lower steps apply to the different building types. Due to the challenge of achieving higher steps and the relatively small number of Part 3 commercial buildings constructed in the Village, Staff recommend limiting reference to the Energy Step Code for Part 3 to wood-frame and concrete residential buildings. Staff are suggesting referencing Step 1 or 2 for Part 3 wood-frame and concrete residential buildings, to come into effect some time in 2022, allowing for industry consultation and education. This change would be brought in as a future amendment and is not included in the draft bylaw.

Table 1. Definition of Upper and Lower Steps by Building Type

<b>Building Type</b>	<b>First Step</b>	<b>Lower Steps</b>	<b>Upper Steps</b>
Part 9 Residential (houses, duplexes, small townhouses, and apartment buildings) and small commercial buildings	Step 1	Steps 2, 3	Steps 4, 5
Part 3 Wood Frame Residential (larger wood frame residential buildings)	Step 1	Steps 2, 3	Step 4
Part 3 Concrete Residential (high rise and other concrete residential buildings)	Step 1	Step 2	Steps 3, 4
Part 3 Commercial	Step 1	Step 2	Step 3

**14. Log Homes – Energy Efficiency (Section 28.2)**

Designing log homes to meet the higher steps of the Energy Step Code is a challenge. The BC Log and Timber Building Industry Association contends that when embodied carbon and lifecycle analysis are considered, log homes built in British Columbia from logs sourced within BC are sustainable choices when compared with wood frame and other buildings. A report titled Life Cycle Assessment of Log Wall and Timber Frame Systems produced in British Columbia prepared by the Athena Sustainable Materials Institute (attached as **Appendix D**) concluded that the overall carbon sequestration benefits of log and timber construction far outweigh the greenhouse gas emissions caused by the rest of the lifecycle (Athena Sustainable Materials Institute, 2021, p. 40). The Athena Institute is requesting consideration of lifecycle analysis as justification for alternative compliance with regards to thermal performance-based standards and building codes such as the BC Energy Step Code.

More research is needed by the industry to determine definitively if log and timber buildings are greener choices than standard wood frame construction. Meanwhile, Staff suggest adding provision to Part 28 to allow homes built from logs sourced in British Columbia and using exclusively low carbon energy sources be required to meet Step 3 of the Energy Step Code. The requirement that these houses be built without reliance on high carbon fuels for heating and cooking has been suggested as another way to reduce CO<sub>2</sub> emissions and to offset the impact of the reduced Energy Step Code requirement. Section 28.3 has been added to relax the Energy Step Code requirements from Step 4 for log homes built from logs sourced in British Columbia.

**15. Electric Vehicle (EV) Charging (Part 29)**

Staff are proposing adding the requirement that new residential buildings be EV-ready. However, even though this is not yet required, builders have been adding EV charging capability for new builds in the last few years in response to customer demand. An amendment to require EV-readiness is intended to close the gap on the few houses where EV charging may not otherwise be considered and supports the Village’s commitment to climate action.

**16. Climatic Data (Part 31)**

The current building bylaw does not reference climatic data for the Village, an oversight that has been corrected in the new bylaw.

### **17. Minor Administrative changes**

- a) **Definitions:** Various definitions are added or amended to facilitate the use of the proposed bylaw.
- b) **Delete “temporary buildings”:** Bylaw No. 867, 2019 has provisions for “temporary buildings”. Staff are proposing to delete this section and administer these types of buildings under the same stream as other buildings.
- c) **Charging for legal fees:** An administrative provision under Section 17.9 provides for cost recovery of legal fees for preparation and registration of legal documents, such as restrictive covenants.
- d) **Geotechnical Engineer’s Report:** Section 24.1. was added to clarify that geotechnical engineers must consider site stability for lands not directly supporting the building(s).
- e) **Alternative Solutions:** Part 25 was added to provide an administrative framework for alternative solutions when they are proposed, including a fee for review of the proposed alternative solution.
- f) **Reduction of permit fee for registered professionals:** In line with other local jurisdictions, Staff is proposing a maximum amount of \$500 for the reduction of permit fees for projects overseen by registered professionals.
- g) **Penalties:** Section 17.5 adds provision for a penalty of \$1,000 that would apply to the applicant if Work Without Permit or Stop Work notices were issued prior to issuance of the permit. This penalty is in place under Bylaw No. 867 but currently comes into effect only if the notice remains in place more than 30 days.
- h) **Exemptions to permit requirements:** Under the definition of “structure” and section 8.1, a few exemptions to permitting are added. Permits are not needed for tents under 10 sq. m. that are in place up to 7 days, or for decks under 0.6m in height or 10m<sup>2</sup> in area without roofs.

### **COMMUNICATIONS**

There is no public communication consideration as the proposed changes are largely administrative in nature. Staff will issue technical bulletins to builders as needed and will conduct industry consultation regarding Energy Step Code changes should the Committee wish to proceed.

### **LEGAL CONSIDERATIONS**

The draft bylaw has had a preliminary legal review by the Village Solicitors.

### **IMPACT ON BUDGET & STAFFING**

Drafting of this Bylaw was completed with no significant impacts to the budget or Staff hours. Adoption of the new Bylaw will necessitate minor administrative amendments to Bylaw Notice Enforcement Bylaw No. 874, 2020, Municipal Ticket Information Utilization Bylaw No. 856, 2019, and Fees and Charges Bylaw No. 905, 2021. These amendments will also be completed as part of regular Staff duties.

### **INTERDEPARTMENTAL IMPACT & APPROVAL**

The above noted bylaw changes will be incorporated into the daily routine and can be accommodated by the following departments.

Interdepartmental Approval by:	Robert Grossman, Fire Chief
Interdepartmental Approval by:	Sheena Fraser, Corporate & Legislative Services
Interdepartmental Approval by:	Tom Csima, Operations

### **IMPACT ON THE REGION OR NEIGHBOURING JURISDICTIONS**

A review of the bylaw has no impact on other jurisdictions.

### **ALTERNATIVE OPTIONS**

There are no alternative options for consideration.

### **RECOMMENDATIONS**

**Recommendation 1: THAT** the Committee of the Whole provide input regarding the draft Building Bylaw.

**Recommendation 2: THAT** the Committee of the Whole recommend to Council that Staff be directed to proceed with stakeholder consultation regarding referencing the Energy Step Code for Part 3 buildings.

**Recommendation 3: THAT** the Committee of the Whole recommend to Council that Chris Derouin be appointed to the position of Plumbing Official for the Village.

### **ATTACHMENTS:**

- Appendix A: Draft Building Bylaw with proposed changes shown in red
- Appendix B: Building Bylaw No. 867, 2019
- Appendix C: Draft Fees and Charges Schedule
- Appendix D: Life Cycle Assessment of Log Wall and Timber Frame Systems produced in British Columbia prepared by the Athena Sustainable Materials Institute, 2012

Prepared by:	Avy Woo, Chief Building Official
Manager Approval by:	Lisa Pedrini, Manager of Development Services
CAO Approval by:	Nikki Gilmore, Chief Administrative Officer

## VILLAGE OF PEMBERTON

## BYLAW NO. XXX, 2021

A bylaw to establish the regulation of the construction, alteration, repair, demolition or occupancy of buildings and structures.

The Council of the Village of Pemberton, in open meeting assembled, enacts as follows:

**PART 1: CITATION**

- 1.1 This Bylaw may be cited for all purposes as the “Village of Pemberton Building Bylaw No. XXX, 2021”

**PART 2: INTERPRETATION**

- 2.1. In this Bylaw, a reference to an Act refers to a statute of British Columbia and a reference to any statute, regulation or other enactment refers to that enactment as amended or replaced from time to time.

- 2.2. In this Bylaw, the following words and terms have the meanings set out in Division A Part 1 Section 1.4 of the *Building Code*:

***accessible, alteration, alternative solution, building, building area, building height, business and personal services, constructor, coordinating registered professional, designer, dwelling unit, farm building, field review, firewall, foundation, grade, heritage building, major occupancy, mercantile, occupancy, registered professional, residential, secondary suite, and storey***

- 2.2 The following words, terms, and phrases have the meanings assigned to them as follows:

**Agent** includes a firm, corporation, or other person representing the owner, by written designation or contract, and a hired tradesperson or constructor who may be granted a permit for work within the limitations of their licence.

**Building Code** means the most current *British Columbia Building Code* as adopted by the Minister pursuant to the *Building Act*

**Building Official** means the Chief Building Official for the Village or a person registered as a registered building official with the Building Officials Association of BC and any person designated to act in the place of that person.

**Complex building** means a building ~~categorized as a Part 3 building under~~ described in Division A Section 1.3.3.2 of the *Building Code*.

**Construct** includes build, erect, install, repair, alter, add, enlarge, move, locate, relocate, reconstruct, demolish, remove, excavate or shore;

**Chief Administrative Officer** means the person appointed to this position for the Village and any person designated to act in the place of that person.

**Cost of construction** means the hard costs and soft costs, as described in Part 17 of this Bylaw, of all completed construction or work related to a building permit.

**Do Not Occupy** means a notice issued by the *Building Official* where the *building* or premises has not been given a permission to occupy by means of a valid permit or business licence,

**Energy Step Code** means the energy performance standards set out in Subsections 9.36. and 10.2 of the *Building Code*. and a reference to a numbered step in the *Energy Step Code* is a reference to a step established in that Subsection.

**Fire Chief** means the person appointed to this position for the *Village* and any person designated to act in the place of that person.

**Fire Code** means the most current British Columbia Fire Code as adopted by the Minister pursuant to the *Fire Services Act*, RSBC 1996.

**Health and safety aspects of the work** means design, construction, demolition, or occupancy as defined in Division A Section 2.2 of the *Building Code*.

**Manager of Development Services** means the person holding this position for the *Village* or any person designated to act in the place of that person.

**Manager of Operations** means the person holding this position for the *Village* or any person designated to act in the place of that person.

**Manufactured home** means a factory built *detached dwelling unit*, certified prior to a placement on the *lot* as having been built:

- (a) as a modular home in accordance with CSA A277 *building*; or
- (b) as a mobile home in accordance with CAN/CSA Z240 building regulations and registered in the BC Manufactured Home Registry, arriving at the *lot* ready for *occupancy* apart from incidental operations and connections into a *community sewer* and *community water system*.

**National Farm Building Code** means the most current *National Farm Building Code of Canada* as adopted for the *Building Code*.

**Occupancy permit** means an authorization by the *Building Official* for the *occupancy* of a *building, structure, or other work* specified in the permit.

**Owner** has the meaning set out in the Schedule to the *Community Charter* or an *agent* duly authorized by the *owner* in writing.

**Owner Builder** means an *owner* who is authorized by BC Housing to build a new home for personal use, and who is exempted from having to become licensed and arrange for third-party

home warranty insurance on their home if they build or directly manage the construction of their new home themselves.

**Plumbing Code** means the most current *British Columbia Plumbing Code* as adopted by the Minister pursuant to the *Building Act*.

**Plumbing Official** means the person appointed to this position for the *Village* and any person designated to act in the place of that person.

**Pool** means a *structure* or constructed depression which is designed to contain water and has a depth, at any point, exceeding 0.6 m.

**Pond** means a manufactured or constructed body of water of any size, which is installed as a landscaping feature and is not intended for the purposes of swimming or bathing or human occupation.

**Professional Design** means the plans and supporting documents bearing the date, seal or stamp, and signature of a *registered professional*.

**Provisional Occupancy** means an *occupancy approval* that is subject to conditions to complete the full *occupancy* requirements and has a stated end date not to exceed 12 months.

**Retaining wall** means a *structure* constructed to hold back, stabilize, or support soil.

**Solid fuel burning appliance** means a device designed for burning solid fuel to produce heat for indoor spaces, or cooking, or aesthetic enjoyment, but does not include

- (a) a barbecue,
- (b) a chiminea,
- (c) an outdoor fireplace that is not used to heat indoor spaces, or
- (d) an outdoor oven.

**Standard building** means a *building* described in Division A Section 1.3.3.3 of the *Building Code*.

**Stop Work** means a notice issued by the *Building Official* or the *Chief Administrative Officer* to immediately suspend construction.

**Structure** means a construction or portion thereof of any kind, whether fixed to, supported by, or sunk into land or water, except the following:

- (a) landscaping;
- (b) fences;
- (c) paving;
- (d) *retaining walls* of 1.2 metres or less in height;
- (e) *tents* of less than 10m<sup>2</sup> in ground area that are not attached to a *building* and that are separated from other *structures* by more than 3 metres;

- (f) storage racking systems of 2.6 metres or less in height; and
- (g) decks of less than 0.6 metres in height or less than 10 m<sup>2</sup> in area without roofs.

**Tent** means a shelter of fabric or pliable material stretched and supported in any manner except by air or its contents.

**Unsafe to Occupy** means construction that has been deemed to be structurally unsafe by the Building Official.

**Village** means the Village of Pemberton.

**Work Without Permit** means construction that has been carried out without a valid permit or written authorization to prove otherwise.

- 2.3 If any section, subsection, sentence, clause, sub clause, or phrase of this Bylaw is for any reason held to be invalid by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Bylaw.

### **PART 3: PURPOSE OF BYLAW**

- 3.1 This Bylaw, must, notwithstanding any other provision herein, be interpreted in accordance with this Part.
- 3.2 Every permit issued under this Bylaw is issued expressly subject to the provisions of this Part.
- 3.3 This Bylaw has been enacted for the purpose of regulating construction within the *Village* in the public interest.
- 3.4 The activities undertaken by or on behalf of the Village pursuant to this Bylaw are for the sole purpose of providing a limited and interim compliance monitoring function for reason of health, safety, and the protection of persons and property.
- 3.5 The purpose of this Bylaw does not extend:
- (a) to the protection of *owners, owner builders* or *constructors* from economic loss;
  - (b) to the assumption by the *Village* or the *Building Official* of any responsibility for ensuring the compliance by any *owner*, their representatives or any employees, *constructors* or *designers* retained by him or her, with the *Building Code*, the requirements of this Bylaw or other applicable enactments respecting safety;
  - (c) to the provision of a warranty of design or workmanship to any person with respect to any *building* or *structure* for which a building permit or *occupancy* permit is issued under this Bylaw;



- (d) to the provision of a warranty or assurance that construction undertaken pursuant to building permits issued by the *Village* is free from latent, or any, defects; or
- (e) to the protection of adjacent real property from incidental damage or nuisance.

#### **PART 4: SCOPE AND EXEMPTIONS**

- 4.1. This Bylaw applies to the design, construction, and *occupancy* of new *buildings* and *structures* and the *alteration*, reconstruction, demolition, removal, relocation, and *occupancy* of existing *buildings* and *structures*.
- 4.2. This Bylaw does not apply to:
  - (a) a building or structure commonly known as “Canadian Standards Association Z240 MH series, Z241 series, or A277 series”, except as regulated by the *Building Code*; or
  - (b) another *building* or *structure* exempted by Part 1 of the *Building Code* except as expressly provided herein.

#### **PART 5: PERMIT CONDITIONS**

- 5.1. A permit is required if work regulated under this Bylaw is undertaken.
- 5.2. Neither the issuance of a permit under this Bylaw nor the acceptance or review of plans, drawings or supporting documents, nor any inspections made by or on behalf of the *Village*, will in any way relieve the *owner* from full and sole responsibility to perform the work in strict accordance with this Bylaw, the *Building Code*, and other applicable enactments respecting safety.
- 5.3. Neither the issuance of a permit under this Bylaw nor the acceptance or review of plans, drawings or specifications or supporting documents, nor any inspections made by or on behalf of the *Village*, constitute in any way a representation, warranty, assurance, or statement that this Bylaw, the *Building Code*, or other applicable enactments respecting safety have been complied with.

#### **PART 6: PROHIBITIONS**

- 6.1. A person must not commence or continue any construction, *alteration*, reconstruction, demolition, removal, relocation, or change the *occupancy* of any *building* or *structure* including excavation or other work related to construction, unless the *Building Official* has issued a valid and subsisting permit for the work.
- 6.2. A person must not occupy or use any *building* or *structure* unless an occupancy permit has been issued by the *Building Official* for the *building* or *structure*.

- 6.3 A person must not occupy or use or permit the *occupancy* or use of any *building* or *structure* contrary to the terms of any permit issued or any notice given by the *Building Official*.
- 6.4 A person must not submit false or misleading information to the *Building Official* in relation to any permit application or construction undertaken pursuant to this Bylaw.
- 6.5 A person must not reverse, alter, deface, cover, remove, or in any way tamper with any notice, permit, or certificate posted upon or affixed to a *building* or *structure* pursuant to this Bylaw, unless authorized in writing by the *Building Official*.
- 6.6 A person must not do any work in contravention of the accepted design or plans of a *building*, *structure*, or other works for which a permit has been issued, unless that *alteration* has been accepted in writing by the *Building Official*.
- 6.7 A person must not alter the approved details of a specification or document which forms part of a permit application without first having obtained, in writing, authorization from the *Building Official*.
- 6.8 A person must not interfere with or obstruct the entry of the *Building Official* or other authorized person of the *Village* on the property in the administration of this Bylaw.

## **PART 7: BUILDING OFFICIAL**

- 7.1. Words describing the authority of the *Building Official* are to be construed as internal administrative powers and not creating a duty.
- 7.2. The *Building Official* may:
- (a) administer this Bylaw;
  - (b) keep records of permit applications, permits, notices, and orders issued, inspections and tests made, and retain copies of all documents related to the administration of this Bylaw, including any electronic copies of such documents;
  - (c) establish, or require an owner to establish, whether a method or type of construction or types of materials used in the construction of a *building* or *structure* for which a permit is sought under this Bylaw conforms to the requirements of the *Building Code*;
  - (d) direct that tests of materials, equipment, devices, construction methods, structural assemblies, or foundations be carried out, or that evidence or proof be submitted by the owner, at the owner's expense, where such evidence or proof is necessary to determine whether the material, equipment, device, construction, or foundation complies with this Bylaw and the *Building Code*;

- (e) subject to section 16 of the *Community Charter*, enter on property at any time to ascertain whether the requirements of this Bylaw are being met; and
- (f) order the correction of any work that is being or has been done in contravention of this Bylaw.

7.3. Without limiting section 7.2, the *Building Official* may cause any the following notices to be posted on the affected parcel, or on a *building* or *structure*, in a form approved by the *Building Official* or the *Chief Administrative Officer*, and make orders in relation to the subject of the notice:

- (a) a *Stop Work* notice, to require the cessation of construction, including plumbing installations, that is proceeding in contravention of this Bylaw, conditions on the permit, or the *Building Code*;
- (b) a *Work Without Permit* notice notifying the *owner* of a site where construction or plumbing installations have been carried out without a valid permit as required under this Bylaw;
- (c) a *Do Not Occupy* notice if the *owner* has been notified not to occupy a *building*, and the *owner* or another person continues the *occupancy*; and
- (d) an *Unsafe to Occupy* notice to the *owner* and any occupants if the *building* is deemed to be structurally unsafe and continuing use of the *building* may endanger the safety of the occupants in or around the *building*.

7.4. The *Building Official* may refuse to issue a permit, or may revoke an issued permit prior to *occupancy*, if the *Building Official* determines that

- (a) a violation of any of the following has occurred or will occur:
  - i. any of the conditions under which the permit was issued;
  - ii. a provision of this Bylaw or any other *Village Bylaw*;
  - iii. a provision of the *Building Code* or other provincial enactment; or if
- (b) any outstanding fees, charges, fines, or penalties remain unpaid;
- (c) information on the application is misleading or incorrect; or
- (d) the permit was issued in error.

## **PART 8: RESPONSIBILITIES OF THE OWNER**

8.1 Every *owner* must apply for and obtain a permit prior to:

- (a) constructing, repairing, or altering a *building* or *structure*, including adding a mezzanine;

- (b) relocating a *building* or *structure*;
- (c) excavating a lot in preparation for construction of a *building* or *structure*;
- (d) constructing a *foundation* of a *building* or *structure*;
- (e) demolishing a *building* or *structure* or part thereof;
- (f) constructing a masonry fireplace or installing a *solid fuel burning appliance* or chimney;
- (g) constructing or altering a plumbing system, except for minor or emergency repairs or fixture replacements;
- (h) altering the use or *occupancy* of a *building* or *structure*;
- (i) constructing, altering, or relocating a fire sprinkler system, unless the fire sprinkler system has not more than two heads;
- (j) installing or modifying a fire detection and alarm system in a complex building;
- (k) repairing the *building* envelope or replacing cladding on a multi-family residential *building* where there is a *registered professional* responsible for the work;
- (l) constructing or removing an accessory or *secondary suite*;
- (m) constructing, repairing, or altering a storage racking system exceeding 2.6 m in height;
- (n) installing, repairing, removing, or reinstalling a firestopping system or fire separation,
- (o) constructing a retaining wall over 1.2m in height;
- (p) erecting a *tent* over 10 square metres in area, if the tent will be in place for a duration exceeding 7 days;

unless the works are the subject of another valid *building* permit.

- 8.2 Every *owner* must ensure that all plans submitted with a permit application bear the name, phone number, email address, and address of the *designer* of the *building* or *structure*.
- 8.3 Every *owner* must ensure that all construction complies with the *Building Code*, this Bylaw, other applicable enactments respecting safety, and orders and notices of the *Building Official* issued under this Bylaw.

- 8.4 Every owner to whom a permit is issued shall be responsible for the costs incurred by the Village for the repair of any damage to municipal works that occurs during or arises directly or indirectly from the work authorized on the permit.
- 8.5 If an owner defaults in paying the cost referred to in Section 8.4 to the Village within thirty (30) days after receipt of a demand for payment from the Village, the Village may:
- (a) recover from the owner, in any court of competent jurisdiction, the costs as a debt to the Village; or
  - (b) direct that the amount of the cost be added to the real property tax roll as a charge imposed in respect of work or service provided to the real property of the owner and be collected in the same manner as property taxes.
- 8.6 Every owner to whom a permit is issued must, during construction:
- (a) post and maintain the permit in a conspicuous place on the property in respect of which the permit was issued;
  - (b) keep a copy of the accepted designs, plans and specifications on the property;
  - (c) post the civic address on the property in a location visible from any adjoining streets;
  - (d) manage any soil or water runoffs to adjacent properties and rights-of-way;
  - (e) manage the disposal and removal of materials off the site in an acceptable manner; and
  - (f) ensure that
    - i the construction site is kept tidy; and
    - ii all construction materials, waste, debris, soil and water from demolition, excavation, or construction activity contained are within the property boundaries.
- 8.7 Every owner must give at least 48 hours' written notice to the Building Official
- (a) of any scheduled inspections of a registered professional or representative;
  - (b) of intent to cover work that has been ordered to be inspected prior to covering; and
  - (c) when work has been completed so that a final inspection can be made.

## **PART 9 OBLIGATIONS OF OWNER'S CONSTRUCTOR**

- 9.1 Every constructor must ensure that all construction is done in compliance with all requirements of the Building Code, this Bylaw and all other applicable codes, standards, and enactments.

9.2 Every constructor must ensure that:

- (a) no excavation or other work is undertaken on public property;
- (b) no public property or Village infrastructure is disturbed;
- (c) no building or structure is erected on public property; and
- (d) no materials stored are stored on public property,

without first having obtained approval in writing from the appropriate authority over such public property.

9.3 For the purposes of the administration and enforcement of this Bylaw, every constructor is responsible jointly and severally with the owner for all work undertaken.

**PART 10 RESPONSIBILITIES OF THE REGISTERED PROFESSIONAL**

10.1 Every owner must provide to the Village letters of assurance in accordance with the requirements of the Building Code prior to

- (a) the pre-occupancy site review coordinated by the coordinating registered professional or other registered professional for a complex building, or
- (b) a final inspection for a standard building in circumstances where letters of assurance have been required in accordance with the requirements of the Building Code, in which case the owner must provide the Village with letters of assurance in the form of Schedules C-A or C-B, as appropriate, referred to in subsection 2.2.7, Division C, of the Building Code.

10.2 A registered professional who provides letters of assurance in accordance with the Building Code must provide proof of professional liability insurance to the Building Official in the form and amount required by the Building Official.

10.3 The owner must retain a registered professional to provide a professional design and plan certification and letters of assurance in the form of Schedules A, B, C-A and C-B referred to in subsection 2.2.7, Division C, of the Building Code, in respect of a permit application,

- (a) for foundation and excavation components of new standard buildings and additions greater than 55 square metres to standard buildings in accordance with the Building Code;
- (b) for construction of a building that is designed with common egress systems for the occupants and requires the use of firewalls in accordance with the Building Code;

- (c) prior to alterations to a building, or to a structural component of a building described in paragraph (b);
  - (d) for a building if the Building Official determines that site conditions, size or complexity so warrant in the interests of safety of persons or protection of property under the Building Code;
  - (e) if the building envelope components of the building fall under Division B Part 3 of the Building Code, the building contains more than two dwelling units, or if the building envelopes do not comply with the prescriptive requirements of Division B Part 9 of the Building Code;
  - (f) for a parcel of land on which a building or structure is proposed if the Building Official believes the parcel is or is likely to be subject to flooding, mud flows, debris flows, debris torrents, erosion, land slip, rock falls, subsidence or avalanche, and the requirement for a professional design is in addition to a requirement under section 56 of Division 8 of Part 3 of the Community Charter for a report certified by a professional engineer or geoscientist with experience in geotechnical engineering that the land may be used safely for the use intended; and
  - (g) that the plans submitted with the application comply with the relevant provisions of the Building Code and applicable bylaws of the Village.
- 10.4 The Building Official may require a registered professional carrying out the professional design and field review required under section 10.3 to provide evidence that they have experience and expertise in respect of the professional design and field review of the context and scope required.
- 10.5 The letters of assurance in the form of Schedules A and B as referred to in subsection 2.2.7, Division C, of the Building Code referred to in sections 10.1 and 10.3 of this Bylaw are relied upon by the Village and its Building Official as certification that the design and plans to which the letters of assurance refer comply with the building code, this Bylaw and other applicable enactments.
- 10.6 For a building permit issued for the construction of a complex building, the Building Official will provide the owner with a notice that the building permit is issued in reliance on the certification of the registered professional that the professional design and plans submitted in support of the application for the building permit comply with the Building Code and other applicable enactments. The Village and its Building Official will rely on the certification of registered professionals whether or not the notice is received by the owner.
- 10.7 If a building permit is issued for a construction of a complex building, the permit fee is reduced by 5% of the fees payable under Schedule A to this Bylaw, up to a maximum reduction of \$500.00 (five hundred dollars).

## **PART 11: APPLICATIONS**



- 11.1 An application for a building permit is deemed to have been submitted once all applicable requirements of Parts 10, 11, 12, 13, 14, 15, 16 and 17 have been met.
- 11.2 Every person must apply for and obtain a separate permit for each *building* or *structure* to be constructed or altered on a site and will be assessed a separate building permit fee-for each permit.
- 11.3 Every applicant for a permit for work regulated under this Bylaw must submit an application in a form approved by the *Building Official*,
- (a) signed by the *owner*, or a signing officer if the *owner* is a corporation;
  - (b) accompanied by the *owner's* acknowledgment of responsibility and undertakings made in the form prescribed by the *Building Official*, signed by the *owner*, or a signing officer if the *owner* is a corporation;
  - (c) accompanied by a copy of a title search made within thirty (30) days of the date of the application; and
  - (d) accompanied by a copy of all covenants, statutory rights-of-way and easements registered against the property;
- 11.4 The *Building Official* may consider an application for a *building* permit to have been abandoned, and may cancel the application, if:
- (a) the applicant has been notified that the permit is ready for issuance and the applicant has not requested that the permit be issued within 90 days of the date of the notification;
  - (b) the applicant has been requested to provide information or documentation to complete the application and has not done so within 60 days of the request.
- 11.5 If the *owner* has designated a person to represent the *owner* as the *owner's agent*, the *owner* must, on a form provided by the *Building Official*, authorize the *agent* to represent the *owner* in all matters pertaining to the *building* permit.

## **PART 12: APPLICATIONS FOR COMPLEX BUILDINGS**

- 12.1 Every applicant for a *building* permit with respect to a *complex building* must submit with the application:
- (a) a *Building Code* compliance summary including without limitation whether the building is designed under Part 3 of the *Building Code*, major occupancy classification(s) of the building, building area and building height, number of streets the building faces, and accessible entrances, work areas, washrooms, firewalls, and facilities;



- (b) unless the *Building Official* waives the requirements for a site plan, in whole or in part, a site plan prepared by a British Columbia Land Surveyor or a certified member of the Applied Science Technologists and Technicians of British Columbia who is registered in site improvement surveys (R.S.I.S.) showing:
- i the bearing and dimensions of the parcel taken from the registered subdivision plan;
  - ii the legal description and civic address of the parcel;
  - iii the location and dimensions of all existing and proposed statutory rights of way, easements, and setback requirements;
  - iv the location and dimensions of all existing and proposed *buildings* or *structures* on the parcel;
  - v invert elevations of the municipal service connections at the property line to establish the minimum building elevation necessary to ensure gravity feed of the storm and sanitary sewers to the municipal connections;
  - vi setbacks to the natural boundary of any lake, swamp, pond, or watercourse where the *Village's* land use regulations establish siting requirements related to flooding;
  - vii natural and finished grade at building corners and significant breaks in the building plan and proposed grade around the building faces to ascertain foundation height;
  - viii geodetic elevation of the underside of a wood floor system or the top of a finished concrete slab of a *building* or *structure* if the *Village's* Flood Regulation Bylaw or provincial flood mapping regulations establish siting requirements related to minimum flood elevation;
- (c) a cross section through the *building* or *structure* illustrating *foundations*, drainage, ceiling heights and construction systems;
- (d) elevations of all sides of the *building* or *structure* showing finish details, roof slopes, windows, doors, finished *grade* and spatial separation calculations;
- (e) floor plans and cross-sectional details drawn at an appropriate scale and at sufficient locations to illustrate that the building or *structure* conforms to the *Building Code*;
- (f) copies of approvals required under any enactment relating to health or safety, including, without limitation, sewage disposal permits, highway access permits and Ministry of Health approvals;

- (g) a letter of assurance in the form of a Schedule A as referred to in Division C and Note A-2.2.7.2.(1)(b) of the *Building Code*, signed by the *owner*, or a signing officer of the *owner* if the *owner* is a corporation, and the *coordinating registered professional*.
- (h) letters of assurance in the form of Schedule B as referred to in the *Building Code*, each signed by such registered professionals as required by the *Building Official* or *Building Code* in Division C and Note A-2.2.7.2 to prepare the design for and conduct *field reviews* of the construction of a *building* or *structure*.
- (i) two (2) sets of drawings and one (1) digital set of the drawings at a suitable scale in both metric and imperial units of the design prepared by each *registered professional* and including the information set out in paragraphs (c) to (e) of this section.

12.2 In addition to the requirements of section 12.1, the *Building Official* may require that an applicant for a *building* permit for a *complex building* submit any one or more of the following as the *Building Official* considers warranted due to the complexity of the proposed *building* or *structure* or siting circumstances:

- (a) an estimate of the cost of construction prepared by a registered professional or a qualified estimator;
- (b) a zoning analysis showing conformance to the *Village's* current Zoning Bylaw;
- (c) site servicing drawings, including detail of off-site services indicating locations at the property line, and where services enter the building, in accordance with the *Village's* current Subdivision and Development Control Bylaw, prepared and sealed by a *registered professional*;
- (d) an estimate of predicted water consumption for the proposed building use;
- (e) a section through showing *grades, buildings, structures, parking areas and driveways*; or
- (f) any other information required by the *Building Official* to establish compliance with this Bylaw, the *Building Code* and other enactments relating to the *building* or *structure*.

### **PART 13: APPLICATIONS FOR STANDARD BUILDINGS**

13.1 Every applicant for a building permit with respect to a *standard building* must submit with the application:

- (a) a site plan prepared by a British Columbia Land Surveyor or a certified member of the Applied Science Technologists and Technicians of British Columbia who is registered in site improvement surveys (R.S.I.S.) showing:
  - i. the bearing and dimensions of the parcel taken from the registered subdivision plan;

- ii. the legal description and civic address of the parcel;
- iii. the location and dimensions of all existing and proposed statutory rights-of-way, easements, and setback requirements;
- iv. the location and dimensions of all existing and proposed *buildings* and *structures* on the parcel;
- v. invert elevations of the municipal service connections at the property line to establish the minimum building elevation necessary to ensure gravity feed of the storm and sanitary sewers to the municipal connections;
- vi. setbacks to the natural boundary of any lake, swamp, pond or watercourse where the Village's land use regulations establish siting requirements related to flooding;
- vii. natural finished grade at *building* corners and significant breaks in the building plan and proposed *grade* around the *building* faces to ascertain *foundation* height;
- viii. geodetic elevation of the underside of a wood floor system or the top of a finished concrete slab of a *building* or *structure* if the Village's Flood Regulation Bylaw or provincial flood mapping regulations establish siting requirements related to minimum flood elevation;

except if the *Building Official* waives, in whole or in part, the requirements for a site plan, and if the permit is for the repair or alteration of an existing building.

- (b) floor plans or a site plan showing:
- i. the dimensions and uses of all areas;
  - ii. the dimensions and height of crawl space and roof spaces;
  - iii. the locations, sizes and swing of doors;
  - iv. the location, size and opening of windows;
  - v. floor, wall and ceiling finishes;
  - vi. plumbing fixtures;
  - vii. structural elements;
  - viii. stair dimensions;
  - ix. major appliances;

- x. the location, dimension and gradient of parking and driveway access;
  - xi. *accessible* paths of travel from the street to the *building*;
  - xii. access routes for firefighting;
  - xiii. location and species of all trees greater than 10 cm in diameter;
  - xiv. zoning compliance summary;
  - xv. locations, setbacks, and elevations of all *retaining walls*, steps, stairs, and decks;
- (c) a cross section through the *building* or *structure* illustrating *foundations*, drainage, ceiling heights and construction systems;
  - (d) elevations of all sides of the *building* or *structure* showing finish details, roof slopes, windows, doors, finished *grade*, and spatial separation calculations as per *Building Code* section 9.10.15.4;
  - (e) cross-sectional details drawn at an appropriate scale and at sufficient locations to illustrate that the *building* or *structure* conforms to the *Building Code*;
  - (f) copies of approvals required under any enactment relating to health or safety, including, without limitation, sewage disposal permits, highway access permits and Ministry of Health approvals;
  - (g) letters of assurance in the form of Schedules B-1 and B-2 as required in subsection 2.2.7. of Division C of the *Building Code*; and
  - (h) two (2) sets of drawings and one (1) digital set of the drawings at a suitable scale in both metric and imperial units of the design including the information set out in sections 13.1.(c) – 13.1. (e) of this Bylaw.

13.2 In addition to the requirements of section 13.1, the *Building Official* may require that an applicant for a *building* permit for a *standard building* submit any one or more of the following where the project involves two (2) or more *buildings*, which in the aggregate, total more than 1,000 square meters, or two (2) or more *buildings* that will contain four (4) or more dwelling units, or otherwise as the *Building Official* considers to be warranted due to the complexity of the proposed *building* or *structure* or siting circumstances:

- (a) site servicing drawings, including sufficient detail of off-site services to indicate locations at the property line, and where services enter the building, prepared and sealed by a *registered professional*, in accordance with the Village's current *Subdivision and Development Control Bylaw*.

- (b) a section through the site showing *grades, buildings, structures*, parking areas, and driveways;
- (c) roof plan and roof height calculations;
- (d) structural, electrical, mechanical, or fire suppression drawings, prepared and sealed by a *registered professional*;
- (e) a *foundation* design prepared by a *registered professional* in accordance with Section 4.2 of Part 4 of the *Building Code*, accompanied by letters of assurance in the form of Schedules B(s) as referred to in the *Building Code*, signed by the *registered professional*, if a geotechnical engineer concludes that the *foundation* design will be outside the scope of Part 9 of the *Building Code*.
- (f) any other information required by the *Building Official* to establish compliance with this Bylaw, the *Building Code* and other bylaws and enactments relating to the *building* or *structure*.

#### **PART 14: APPLICATIONS FOR TENANT IMPROVEMENT PERMITS**

- 14.1 In substitution for the requirements of Part 12 or Part 13, an applicant for a building permit with respect to a tenant improvement in an existing *building* must state the intended uses of the part of the *building*, and that of the adjacent spaces, and must submit:
- (a) copies in scale, size, legibility, and format, as specified by the *Building Official*, of the specification and drawings of the *building* or *structure* showing all aspects of the proposed work;
  - (b) a site plan showing the location, dimension, and allocation of off-street parking spaces;
  - (c) if required by the *Building Official*, a *Building Code* compliance analysis;
  - (d) if required by the *Building Official*, a Zoning Bylaw compliance analysis;
  - (e) floor plans showing the dimensions and uses of all areas; the location, size, hardware, and swing of doors; plumbing fixture layout; structural elements; stair dimensions; and location of all points of egress and exits;
  - (f) a cross section through all walls, including interior walls, exterior walls, and walls separating tenant spaces;
  - (g) a cross section showing ceiling height and floor construction;
  - (h) copies of approvals and permits required under any exactment relating to health or safety, including, without limitation, highway access permits, Ministry of Health, Ministry of Environment and Climate Change Strategy, and Vancouver Coastal Health;

- (i) if required by the *Building Official*:
- i. a letter of assurance, in the form of Schedule A, as referred to in Division C – Part 2 of the *Building Code*, signed by the owner, or a signing officer if the owner is a corporation, and the coordinating registered professional; and
  - ii. letters of assurance, in the form of Schedule B, as referred to in Division C – Part 2 of the *Building Code*, each signed by such registered professionals as the *Building Official* or *Building Code* may require, to prepare the design for and conduct field reviews of the construction of the tenant improvements; and
  - iii. any other information to establish compliance with this Bylaw, the *Building Code* and other bylaws and enactments relating to the building or structure.

## **PART 15: FARM BUILDINGS**

- 15.1 Every owner must ensure that all construction of a *farm building* complies with the *National Farm Building Code*, this Bylaw, and other applicable enactments.
- 15.2 Every applicant for a building permit for a *farm building* must submit with the application the following:
- (a) unless the requirement is waived by the *Building Official* as being unnecessary to the application, in whole or in part, a site plan prepared by a British Columbia Land Surveyor or a certified member of the Applied Science Technologists and Technicians of British Columbia who is registered in site improvement surveys (R.S.I.S.) showing:
    - i. the bearing and dimensions of the parcel taken from the registered subdivision plan;
    - ii. the legal description and civic address of the parcel;
    - iii. the location and dimensions of all existing and proposed statutory rights-of-way, easements, and setback requirements;
    - iv. the location and dimensions of all existing and proposed *buildings* or *structures* on the parcel;
    - v. setbacks to the natural boundary of any lake, swamp, pond or watercourse where the *Village's* land use regulations establish siting requirements related to flooding;
    - vi. the existing and finished ground levels to an established datum at or adjacent to the site and the geodetic elevation of the underside of the wood floor system or top of finished concrete slab of a *building* or *structure* where the *Village's* land use regulations establish siting requirements related to minimum flood construction levels; and

- vii. the location, dimension and gradient of parking and driveway access;
- (b) scaled construction drawings showing floor plans of the proposed building with the proposed uses of all areas, a cross-section of building showing proposed heights and confirmation that the building meets all the required design loads as per the *National Farm Building Code*;
- (c) any other information required by the *Building Official* to establish compliance with this Bylaw, the *National Farm Building Code* and other bylaws and enactments relating to the *building* or *structure*.

## **PART 16: APPLICATIONS FOR TENTS**

### **16.1 Every applicant for a *building* permit for a *tent* must submit the following with the application:**

- (a) a certificate of flame resistance indicating that the fabric complies with CAN/ULC-S109, “Flame Tests of Flame-Resistant Fabrics and Films” or NFPA 701, “Fire Tests for Flame Propagation of Textiles and Films”; and
- (b) design and specifications of the supporting framing and anchorage and letters of assurance by a *registered professional*.
- (c) unless the requirement is waived by the *Building Official* as being unnecessary to the application, in whole or in part, include a site plan prepared by a British Columbia Land Surveyor or a certified member of the Applied Science Technologists and Technicians of British Columbia who is registered in site improvement surveys (R.S.I.S.) showing:
  - i. the bearing and dimensions of the parcel taken from the registered subdivision plan;
  - ii. the legal description and civic address of the parcel;
  - iii. the location and dimensions of all statutory rights-of-way, easements and setback requirements;
  - iv. the location and dimensions of all existing and proposed *buildings* or *structures* on the parcel;
  - v. setbacks to the natural boundary of any lake, swamp, pond, or watercourse where the *Village’s* land use regulations establish siting requirements related to flooding;
  - vi. the existing and finished ground levels to an established datum at or adjacent to the site and the geodetic elevation of the underside of the floor system of a *building* or *structure* where the *Village’s* land use regulations establish siting requirements related to minimum flood construction levels; and



- vii. the location, dimension and gradient of parking and driveway access;
- (d) scaled construction drawings showing floor plans of the proposed tent with the proposed uses of all areas and a cross-section of the tent showing proposed heights;
- (e) any other information required by the Building Official to establish compliance with this Bylaw and other applicable bylaws and enactments.

## **PART 17: FEES, CHARGES AND SECURITIES**

- 17.1 Fees, charges, penalties, and security deposits for services and permits that may be or are provided under this bylaw shall be payable as set out in the Village of Pemberton Fees and Charges Bylaw No. 905, 2021.
- 17.2 Every person who obtains a permit or service under this Bylaw must pay the applicable fees and charges, based on the cost of construction where applicable, prior to obtaining the building or permit or service.
- 17.3 The cost of construction will include, without limitation,
- (a) all mechanical, electrical, plumbing, drainage, and gas installations necessary in the carrying out of the construction to its completed form;
  - (b) all design documents, labour and fees involved in the design, investigative testing, consulting services, construction labour and management, even if provided by the owner, or donated voluntarily by others, sales taxes;
  - (c) contractor's profit and overhead;
  - (d) insurance;
  - (e) site preparation and civil works and improvements and all associated paving, landscaping, and underground servicing, including excavation and the use of hoisting, pile driving, compaction, or erection devices.
- 17.4 The cost of construction will be the greater of:
- (a) the value declared by the owner on the application;
  - (b) the value of construction, as determined by the Building Official utilizing an independent third party valuation tool of construction costs; or
  - (c) a cumulative total of all contracts of construction for the project at occupancy.
- 17.5 Every applicant for a building permit must pay the applicable non-refundable plan processing fee that will be credited against the building permit fee when the permit is issued.



- 17.6 If a Stop Work Notice or Work Without Permit Notice is issued to an owner prior to the owner issuance of a building permit for the work, the owner must pay the applicable penalty prior to issuance of the building permit.
- 17.7 Every applicant for a building permit that includes new site service connections must deposit with the Village a security in the form of cash.
- 17.8 The site service connections security collected under 17.6 will be returned within 30 days upon confirmation that site services as-built drawings showing locations of sewer and water connections have been submitted to and accepted by the Building Official or by the Manager of Operations.
- 17.9 The owner may obtain a refund of the permit fee if a permit is surrendered and cancelled before any construction begins, as determined by the Building Official, provided that:
- (a) the refund does not include the plan processing fee paid pursuant to section 17.4 of this Bylaw;
  - (b) no construction work has begun; and
  - (c) no inspections have been made.
- 17.10 Fees for miscellaneous services related to the administration of this Bylaw and related enactments will be charged at an hourly rate.
- 17.11 Every owner must pay a fee for the preparation and registration of any legal documents, including restrictive covenants on title and notices on title, when the Village has incurred costs in the preparation or registration of these documents.
- 17.12 Every owner must pay a fee:
- (a) to extend a building permit as permitted under section 18.9;
  - (b) for revision of plans after submission of the building permit application;
  - (c) to transfer a building permit to another person; or
- 17.13 Every owner must pay a fee before the Building Official may approve a provisional occupancy permit.
- 17.14 Every applicant for a foundation permit must deposit with the Village a security in the form of cash or an irrevocable letter of credit against the cost of site restoration that may be incurred by the Village.

17.15 Where the proposed work includes excavation or construction on lands within 10 metres of a *Village* roadway, sewer, drain or water main, trees and their root systems, or other *Village* work, the applicant must deposit with the *Village* a security, in the form of cash or an irrevocable letter of credit, against the cost of repairs to such works.

17.16 The *Village* may return any securities collected within 30 days, less any repair costs incurred, after

- (a) final inspection of the related building permit; or
- (b) cancellation, expiry, or revocation of the building permit,

upon confirmation that the *Village* works have not been damaged or, if damage has occurred, that it has been fully repaired, or that the work requiring the securities amount has been satisfied.

## **PART 18: BUILDING PERMITS**

18.1 The *Building Official* may issue the permit for which an application is made when the following conditions have been met:

- (a) the *owner* has submitted a completed application including all required supporting documentation;
- (b) the proposed work set out in the application conforms with the *Building Code*, this Bylaw and all other applicable bylaws and enactments;
- (c) the *owner* has paid all applicable fees, charges, penalties, and deposits, and met all requirements imposed by this and any other applicable enactment;
- (d) no enactment, covenant, agreement, or regulation of the *Village* authorizes the permit to be withheld;
- (e) the *owner* has retained a professional engineer or geoscientist if required by the provisions of the *Engineers and Geoscientists Act*; and
- (f) the *owner* has retained an architect if required by the provisions of the *Architects Act*.

18.2 If the application is in respect of a *building* that includes, or will include, a *residential occupancy*, the *Building Official* will not issue the building permit unless the *owner* provides evidence pursuant to section 30 (1) of the *Homeowner Protection Act* that:

- (a) the proposed *building* is covered by home warranty insurance, and
- (b) the *constructor* is a licensed residential builder,

unless the *owner* is not required to be licensed and to obtain home warranty insurance in accordance with section 30 (1) of the *Homeowner Protection Act*.

18.3 A building permit is issued upon the condition that the permit will expire and be cancelled and the rights of the *owner* under the permit will terminate if:

- (a) the work authorized by the permit is not commenced within twelve (12) months of the date of issuance of the permit;
- (b) work is discontinued for a period of twelve (12) months or longer;
- (c) there has been no request for an inspection or submission of a *field review* by a *registered professional* within twelve (12) months from the date of the last recorded inspection; or
- (d) the work is not completed within two (2) years of the date of issuance of the permit

unless the *owner* has been granted an extension by the *Building Official* and has paid the permit extension fee.

18.4 A building permit is deemed to have been issued as of the date it was signed by the *Building Official*.

18.5 A person to whom a building permit has been issued must obtain approval in writing by the *Building Official* before transferring the permit to another person.

18.6 The *Building Official* may deem approved construction up to the last recorded inspection to be work performed under a permit.

18.7 If a permit has expired or been revoked, an *owner* must apply for and obtain a new permit prior to commencing or completing any remaining work.

18.8 If the *Building Official* issues a new permit pursuant to an application under section 18.7, the permit will be subject to the requirements of this Bylaw, current *Building Code*, and all other applicable enactments.

18.9 The *Building Official* may extend the duration set out under section 18.3. (a), (b), (c) or (d) if construction has not commenced or if construction has been discontinued due to adverse weather, strike, material, labour shortages, or similar hardship that the *Building Official* considers to be beyond the *owner's* control.

18.10 When an *owner* has excavated a site under a *foundation* permit or excavation permit and a building permit is not subsequently issued, or a subsisting building permit has expired in accordance with subsection 18.3, without the construction of the *building* or *structure* for which the building permit was issued having commenced, the *owner* must fill in the excavation to restore the original gradients of the site within sixty (60) days of being served notice by the *Building Official* to do so.

18.11 Prior to issuance of a building or demolition permit for a *complex building*, every owner must submit a fire safety plan in accordance with Division B, Section 5.6.1.2(1) of the *Fire Code* to the satisfaction of the *Building Official*.

## **PART 19: PLUMBING PERMITS**

19.1 Except as provided in subsection 19.4, a person must not construct, extend, renew, alter, or repair a plumbing system unless a plumbing permit to do so has been obtained.

19.2 The *Plumbing Official* may issue a plumbing permit to only:

- (a) a licensed plumbing contractor; or
- (b) a homeowner who shall carry out the plumbing work themselves in a dwelling owned by them and used only as their domestic domicile, provided they have satisfied the authority having jurisdiction that they are competent to perform such work.

19.3 A plumbing permit shall not be transferable.

19.4 Notwithstanding 19.1, a plumbing permit is not required when:

- (a) a stoppage in a drainage system is cleared;
- (b) a leak is repaired in a water distribution system;
- (c) a fixture is replaced without any change to the drainage system; or
- (d) a replacement is made to existing faucets, service water heater, valves, pipes or fittings in a water distribution system.

19.5 A person must not cover any regulated plumbing work until the *Plumbing Official* has approved the work.

19.6 Prior to calling for a plumbing inspection the *owner* must:

- (a) submit to the *Plumbing Official* an isometric drawing overlaid on the floor plan showing:
  - i the location and size of every building drain, including every trap and cleanout fitting on the drain;
  - ii the size and location of every soil-or-waste pipe, trap, and vent pipe; and
  - iii the layout of the potable water distribution system, including pipe sizes and valves;
- (b) ensure that all drains and vents have been completed; and

- (c) ensure that the system has been filled with water or pressurized air up to the roof or to the highest point of connection to an existing vent.

19.7 Prior to the final inspection the *owner* must ensure that:

- (a) all fixtures and equipment have been installed and ready for use, and
- (b) if a fixture has been roughed-in for future use, the outlet has been sealed with an approved plug or cap.

19.8 If the Plumbing Official does not approve any part of the system after it has been inspected or tested, the *owner* must

- (a) make any *alteration* or replacement that is necessary, and
- (b) request inspection of the corrected work.

19.9 The *owner* must ensure that all connections to potable water systems are designed in compliance with Village of Pemberton Cross Connection Control Bylaw No. 844, 2018.

19.10 The Plumbing Official may issue a plumbing permit for a portion of a *building* or *structure* before the design, plans and specifications for the entire *building* or *structure* have been accepted, if information has been provided to the *Village* to demonstrate to the Plumbing Official that the portion authorized to be constructed complies with this and other applicable Bylaws and the permit fee applicable to that portion of the *building* or *structure* has been paid.

19.11 Following a request for inspection, the Plumbing Official may authorize work regulated by the Plumbing Code to be covered or concealed without an inspection, provided that

- (a) the request for inspection includes certification that the work has been performed in compliance with the Plumbing Code and any other applicable standard, and
- (b) the certification is provided by the licensed plumbing contractor who obtained the permit and has overseen the work.

19.12 The Plumbing Official may request an inspection of a licensed plumbing contractor's work by another licensed plumbing contractor, from time to time, as an audit process, and the owner will be responsible for the cost of the additional inspection.

## **PART 20: RETAINING WALLS**

20.1 A *registered professional* must undertake the design and conduct *field reviews* of the construction of a *retaining wall* greater than 1.2 metres in height, to meet good engineering practices.

- 20.2 An *owner* must submit sealed copies of the design plan and *field review* reports prepared by the *registered professional* for all *retaining walls* greater than 1.2 metres in height to the *Building Official* prior to acceptance of the works.

## **PART 21: POOLS AND PONDS**

- 21.1 A person must apply for a building permit to construct or carry out structural repairs on a *pool* or *pond* except for *pool* that is emptied daily.
- 21.2. Notwithstanding 21.1, if an above-ground *pool* is erected only on a seasonal basis, a permit is required only the first time it is installed on the same parcel.
- 21.3 An applicant for a permit to construct a *pool* or *pond* must provide
- (a) drawings of the design, signed and sealed by a professional engineer and accompanied by letters of assurance (Schedule B) as referred to in Division C – Part 2 of the *Building Code*, and
  - (b) proof of liability insurance.
- 21.4 An applicant for a permit to construct a *pool* or *pond* on a hillside or sloping lot must provide
- (a) a geotechnical report referencing the *pool*, and
  - (b) letters of assurance (Schedule B) as referred to in Division C – Part 2 of the *Building Code* from a professional engineer with expertise in geotechnical engineering certifying whether or how it may be safely used for its intended purpose.
- 21.5 Prior to final inspection, a holder of a permit for construction of a *pool* or *pond* on a hillside or sloping lot must provide to the *Building Official* all *field reviews* and a Schedule CB.
- 21.6 In addition to information otherwise required by this Bylaw, an applicant for a permit to construct a *pool* or *pond* must provide a scaled plan showing the location, enclosure details, depth and dimensions of the *pool* or *pond* and its structural details, and all water supply piping and appurtenances.
- 21.7 *Pool* plumbing must be arranged so that *pool* water cannot enter any water supply line and once having been drained from the *pool* cannot be returned to the *pool* without filtering, and so that sewage from any sanitary sewer or sewage disposal system cannot enter the *pool* or the *pool* filtering system.
- 21.8 A *pool*, including a spa or hot tub, must be enclosed within a fence constructed without footholds or grips that children may use to climb into the enclosed area, having a minimum height of 1.5 metres and no openings greater than 100 mm at their least dimension.

- 21.9 Access through a fence enclosing a *pool*, spa or hot tub must be only through a self-closing and self-latching gate designed and constructed or installed to cause the gate to return to a closed position when not in use and secured by a latch located on the *pool*, spa, or hot tub side of the gate.
- 21.10 In lieu of a fence, an *owner* may provide a spa or hot tub with a locking cover which would prevent unauthorized access to the water.
- 21.11 A person must not use or occupy a *pool*, including a spa or hot tub, unless the *owner* or occupier of property on or in which a *pool*, spa or hot tub is located maintains every fence and cover required under sections 21.8 to 21.10 of this Part 21 in good order.

## **PART 22: BUILDING RELOCATION**

- 22.1 No person may relocate a *building* or *structure* into or within the Village:
- (a) except where certified by a registered professional that the *building* or *structure*, specifically its *foundation* and snow load, will comply with the current *Building Code*; and
  - (b) unless a building permit has been issued for the *building* or *structure* previously by the *Village*.

## **PART 23: SITE GRADING AND DRAINAGE**

- 23.1 The *owner* of land on which a *building* or *structure* is being constructed must control the site drainage such that other sites are not impacted and must ensure that:
- (a) each lot is *graded* to drain into a municipal drainage system or a natural watercourse without draining onto adjacent lots;
  - (b) areas adjacent to *buildings* are *graded* away from the *foundations* to prevent flooding;
  - (c) a lot lower than adjacent roadways is provided with stormwater management facilities to direct storm runoff to a drainage system approved by the *Building Official* or the *Manager of Operations*;
  - (d) if storm runoff is not directed to a municipal drainage system, storm runoff shall occur to a natural watercourse by means of sheet flow only, and not by means of swales or pipes or other artificial means.

## **PART 24: RISK OF FLOOD, LANDSLIDES AND OTHER HAZARDS**

- 24.1 If the *Building Official* considers that construction of a *building* or a *structure* would be on land that is or is likely to be subject to flooding, mud flows, debris flows or torrents, erosion, land slip, rockfalls, subsidence or avalanche, the *Building Official* may require the *owner* to provide a report prepared by a professional engineer or geoscientist with experience in geotechnical study



and geo-hazard assessments certifying that the land may be used safely for its intended use, including lands that do not directly support the building or structure.

- 24.2 If the engineer or geoscientist certifies that the land may be used safely for the use intended if used in accordance with the conditions specified in the report provided to the *Building Official*, the *Building Official* may issue a building permit on the following conditions:
- (a) the *owner* covenants with the *Village* to use the land only in the manner certified by the engineer or geoscientist as enabling the safe use of the land for the use intended;
  - (b) the covenant includes provision for reimbursing the *Village* for any expenses that may be incurred by it as a result of a breach of the covenant; and
  - (c) the covenant is registered under section 219 of the *Land Title Act* (British Columbia).

## **PART 25: ALTERNATIVE SOLUTIONS**

- 25.1 An owner who wishes to provide alternative solutions to satisfy one or more of the requirements of the Building Code or this Bylaw must
- (a) submit to the Building Official sufficient evidence to demonstrate that the proposed alternate solutions will provide the level of performance required by the Building Code and this Bylaw, and
  - (b) pay the applicable fee.

## **PART 26: INSPECTIONS**

- 26.1 An owner must submit a *registered professional field review* report to the *Building Official* within seven (7) days of the occurrence of the *field review*.
- 26.2 The *Building Official* may periodically attend the site of construction of a *complex building* to ascertain that *field reviews* are taking place and to monitor the *field reviews* undertaken by the *registered professional*.
- 26.3 The *Building Official* may periodically attend the site of the construction of a *standard building* or *structure* to ascertain whether the *health and safety aspects of the work* are being carried out in a conformance with those portions of this Bylaw, the *Building Code* and any other applicable enactments concerning safety.
- 26.4 Subject to subsection 26.5, the *owner* must obtain an inspection and receive the written acceptance from either the *Building Official* or the Plumbing Official of the following aspects of the work prior to concealing each, as applicable:
- (a) footing and *foundation*, as shown by a survey, prior to and after the placement of formwork;



- (b) perimeter drains and damp proofing;
- (c) plumbing rough-in, below ground;
- (d) plumbing rough-in, above ground;
- (e) bathtubs, showers, and site-built shower pans;
- (f) hydronic heating system;
- (g) under slab insulation;
- (h) fire sprinklers
- (i) fireplace and chimney;
- (j) mechanical ventilation;
- (k) framing after all services installed;
- (l) rain screen;
- (m) paper and wire prior to first coat stucco;
- (n) first coat of stucco;
- (o) second coat of stucco;
- (p) insulation and vapour barrier;
- (q) drywall for fire separation in *buildings* containing *secondary suites*, multiple residential and multiple commercial occupancies, before tape or filler is applied;
- (r) other inspections as required by the *Building Official*.

26.5 The requirements of subsection 26.4 do not apply to any aspect of the work that is the subject of a *registered professional's* letter of assurance provided in accordance with paragraphs 12.1.(g), 12.1.(h), or 12.2.(e) of this Bylaw.

26.6 The *owner* must obtain an inspection, and must receive acceptance in writing by the *Manager of Operations*, the *Building Official*, or the *Plumbing Official*, in relation to the following aspects of the work prior to concealing either, as applicable:

- a) sanitary and storm sewer; and

b) water service.

26.7 If any aspect of the work referred to in section 26.4 or 26.6 of this Bylaw is concealed prior to the *Building Official's* acceptance in writing, the *Building Official* or the *Manager of Operations* may order that it be uncovered at the *owner's* expense to permit an inspection.

26.8 Prior to scheduling an inspection, the *owner* must submit to the *Building Official* the following documents, as applicable, for review by the *Building Official* pursuant to the inspection:

(a) Forms/*Foundation* Inspection:

- i Building Location Certificate provided by a British Columbia Land Surveyor with elevation for top of concrete for Flood Construction Level (FCL) calculation;
- ii Geotechnical Engineer *field review* for soil bearing;
- iii Structural Engineer *field review* for footings;
- iv Structural Engineer *field review* for *foundation* walls.

(b) Prior to backfilling:

- i Geotechnical Engineer *field review* for rock pit;
- ii Geotechnical Engineer *field review* for site drainage.

(c) Framing/Sheathing Inspection:

- i Structural Engineer *field reviews*;
- ii Sealed joist and beam layout;
- iii Sealed roof truss layout and sealed truss specifications;
- iv Fire Suppression Engineer *field review*;
- v *Field Reviews* and Schedule S [EGBC] by engineer for i-joist and roof truss where required.

(d) Final Inspection:

- i *Coordinating Registered Professional* Schedule C-A [*Building Code*]
- ii Structural Engineer Schedule C-B [*Building Code*];
- iii Geotechnical Engineer Schedule C-B [*Building Code*];
- iv Fire Suppression Engineer Schedule C-B [*Building Code*];
- v Third party field report with Schedule B and Schedule C-B [*Building Code*] for unvented roof spaces;
- vi Spray foam certification;
- vii Septic Engineer Schedule C-B [*Building Code*];
- viii Sealed drawings with Schedule B and Schedule C-B [*Building Code*] (Architectural 1.5 & 1.6) for manufactured guards;
- ix Third party report for energy modelling;
- x Mechanical Ventilation Checklist for all dwellings;
- xi Decking membrane certification;

- xii copy of electrical and gas permits and notice of completion from Technical Safety BC;
- xiii *retaining walls* with *field review*, Schedule B and Schedule C-B [*Building Code*];
- xiv a drawing showing the location of sewer and water services from the Village service connection to the point of entry at the house, triangulated against landmarks or permanent *structures*; and

(e) any other documents required by the *Building Official*.

26.9 If more than two (2) inspections are necessary when one (1) inspection is normally required, for each inspection after the second inspection, the *owner* must pay a re-inspection fee prior to any additional inspections being performed.

## **PART 27: OCCUPANCY REQUIREMENTS**

27.1 A person must not occupy a *building* or *structure* or part of a *building* or *structure* unless the *Building Official* has issued an *occupancy permit* for the *building* or *structure* or part of the *building* or *structure*.

27.2 The *Building Official* may issue an *occupancy permit* if:

- (a) all letters of assurance required under this Bylaw have been submitted;
- (b) all aspects of the work requiring inspection and acceptance pursuant to this Bylaw have been inspected and accepted; and
- (c) all requirements of the building permit have been fulfilled.

27.3 The *Building Official* may issue an approval for a *building shell* upon completion of the construction on condition that a person must not occupy the *building* or portions of the *building* until

- (a) a subsequent building permit has been obtained, and
- (b) a separate *occupancy permit* has been issued for the use.

27.4 Notwithstanding section 27.2, the *Building Official* may authorize a *provisional occupancy* for a part of a *building* specified in the authorization, for the duration granted, upon the request of the holder of a permit or the *owner* of a *building* for which a permit has been issued; if:

- (a) the part of the *building* that will be occupied is self-contained;
- (b) the *owner* has completed the following work and obtained the *Building Official's* acceptance of it:
  - i. plumbing, electrical, and heating;

- ii. fire and life safety systems; and
  - iii. building envelope;
  - (c) the owner has posted on the building the permanent civic address;
  - (d) the Fire Chief and the Manager of Development Services have accepted the provisional occupancy; and
  - (e) the owner has paid all applicable fees, charges, penalties, and performance securities.
- 27.5 A person must comply with the conditions under which the provisional occupancy was issued, the Building Code, and this Bylaw, with respect to any aspect of construction of any portion of the building.
- 27.6 The Building Official may require as a condition of issuance of a provisional occupancy permit that the owner provide a performance security equal to the value of all or part of the outstanding construction required to complete the building, to be refunded upon completion of the outstanding work.
- 27.7 The Building Official may request the owner to reconfirm the cost of construction prior to requesting the occupancy permit.

## **PART 28: BC ENERGY STEP CODE REQUIREMENTS**

- 28.1 Any residential building, including a detached house, carriage house, garden suite, duplex, or row house, regulated by Part 9 of the Building Code, excluding a manufactured home, must be designed and constructed to meet the minimum performance requirements specified in Step 4 of the Energy Step Code.
- 28.2 Except for buildings included in subsection 28.1, and farm buildings, any standard building with residential, business and personal services or mercantile occupancies, or a combination of be designed and constructed to meet the minimum performance requirements specified in Step 3 of the Energy Step Code.
- 28.3 Notwithstanding section 28.1, a log home constructed of logs sourced in British Columbia and using exclusively low carbon energy sources for heating, cooling, water heating and cooking may be designed and constructed to meet the minimum performance requirements specified in Step 3 of the Energy Step Code.

## **PART 29: ELECTRIC VEHICLE CHARGING**

- 29.1 For buildings referenced in 28.1, the owner must provide at least one (1) electric vehicle charging rough-in for each dwelling unit contained within the building.

- 29.2 The owner must label the branch circuit serving the electric vehicle charging rough-in “EV Ready” in the service panel or subpanel directory and must label the termination location “EV Ready.”
- 29.3 The owner must submit to the *Building Official* a statement from the electrical contractor that the electric vehicle charging rough-in has been installed as per section 28.1.

### **PART 30: SITE SERVICES**

- 30.1 The minimum depth of bury for water services will be 1.8 metres unless the *owner* provides the *Building Official* with evidence that a lesser depth will not increase the risk of freezing.
- 30.2 The minimum depth of bury for sanitary sewer and storm drain services will be 1.2 metres unless the *owner* provides the *Building Official* with evidence that a lesser depth will not increase the risk of freezing.
- 30.3 If storm outfall is directed to a ditch, the invert elevation shall be 250 mm from the crest of the ditch or as determined by the *Manager of Operations*.
- 30.4 The *owner* must submit to the *Building Official* a record drawing showing the installation of potable water service, sanitary sewer service and storm drain service installations, backfill and bedding material for service trench used; and indicating sizes and types of material and all fittings and references for cleanouts, triangulated to substantially permanent landmarks such as building foundations and hydro kiosks.

### **PART 31: SURVEYOR’S OR SITE IMPROVEMENT CERTIFICATES**

- 31.1 Prior to the placing of concrete in forms for the *foundations* for a *building* or *structure*, the *owner* must ensure that the location of the forms in relation to Land Title Office plans and British Columbia Land Surveyor (B.C.L.S.) monuments, property lines, easements, or rights-of-way has been established by a B.C.L.S. or a certified member of R.S.I.S.
- 31.2 Prior to the *occupancy* of a *building* or *structure*, the *owner* must ensure that the location of the *foundations* in relation to Land Title Office plans and B.C.L.S. monuments, property lines, easements, or rights-of-way has been established by a B.C.L.S. or a certified member of the R.S.I.S.
- 31.3 The site improvement surveys required in subsections 31.1 and 31.2 of this Bylaw must show:
- (a) the shortest distances from the outer surfaces of the *foundations* of the *building* or *structure* on the property to the adjacent property lines, easements, or rights-of-way; and
  - (b) the elevation of the applicable aspect of the floor system in relation to a flood reference, where the *Village’s* land use regulations establish siting requirements related to flooding.

## **PART 32: NOTICES**

- 32.1 The *Building Official* may order the cessation of any work that is proceeding in contravention of this Bylaw, the *Building Code*, or any other *Village* bylaw, by posting a *Stop Work* notice in the form prescribed by the *Building Official* or *Chief Administrative Officer*.
- 32.2 The *owner* of property on which a *Stop Work* notice has been posted, and every other person, must cause all construction work to cease immediately and must not do any further work until the *Stop Work* notice has been rescinded in writing by the *Building Official*.
- 32.3 Where a *Do Not Occupy* notice or an *Unsafe to Occupy* notice has been posted on a property in relation to a *building* or *structure*, any person occupying the *building* or *structure* must cease *occupancy* immediately and refrain from further *occupancy* until the notice has been rescinded in writing by the *Building Official*.
- 32.4 The owner of a property on which a Work Without Permit notice has been posted must apply for a building permit and pay all applicable fees and penalties within seven (7) days of the notice being posted.
- 32.5 The Building Official may order removal of unpermitted work where there is a Work Without Permit notice issued if:
- (a) the owner fails to make a building permit application under section 32.4; or
  - (b) if the work constructed does not meet the requirements of this Bylaw, the Building Code or any other applicable enactment.
- 32.6. If the provisional occupancy issued under Section 27.4 expires and the outstanding work is not completed, the Building Official may initiate the process of a notice in the Land Title Office under section 57 of the Community Charter that the inspection was not completed.

## **PART 33: CLIMATIC DATA**

- 33.1 The owner must comply with the Environment Canada climatic data, as provided by the Village, for the design of buildings, as applicable on the application date for the building permit.
- 33.2 Climatic data may be adjusted from time to time without notice to the public.

## **PART 34: PENALTIES AND ENFORCEMENT**

- 34.1 Any person who:
- (a) contravenes any provision of this Bylaw;
  - (b) fails to comply with any order or notice issued by the *Building Official*;

- (c) causes or allows any act or thing to be done in contravention of any provision of this Bylaw; or
- (d) fails or neglects to do anything required to be done by any provision of this Bylaw, commits an offence.

34.2 Each day that an offence continues constitutes a separate offence.

34.3 A person found guilty of an offence under this Bylaw is liable if:

- (a) proceedings are brought under the *Offence Act (B.C.)*, to pay a fine to maximum of \$50,000 and such other amounts as the court may impose in relation to the offence; or
- (b) a ticket is issued under the *Village of Pemberton Municipal Ticket Information Utilization Bylaw No. 845, 2018*, to pay a fine to a maximum of \$1,000;
- (c) a bylaw notice is issued under a bylaw made under the *Local Government Bylaw Notice Enforcement Act*, to pay a penalty to a maximum authorized under that *Act*.

34.4 The *Building Official, Plumbing Official, and Manager of Operations* may enforce the provisions of this Bylaw.

#### **PART 35: REPEAL**

35.1 The Village of Pemberton Building Bylaw No. 867, 2019 and its amendments are hereby repealed.

**READ A FIRST TIME** this xx day of xx, 2021.

**READ A SECOND TIME** this xx day of xx, 2021.

**READ A THIRD TIME** this xx day of xx, 2021.

**ADOPTED** this xx day of xx, 2021.

---

Mike Richman  
Mayor

---

Sheena Fraser  
Corporate Officer



## VILLAGE OF PEMBERTON

## BYLAW NO. 867, 2019

---

A bylaw to establish the regulation of the construction, alteration, repair, demolition or occupancy of buildings and structures.

---

**WHEREAS** the *Community Charter* authorizes the Village of Pemberton (hereafter referred to as “the Village”), for the health, safety and protection of persons and property to regulate the construction, alteration, repair, demolition, or occupancy of buildings and structures by Bylaw;

**AND WHEREAS** the Province of British Columbia has adopted a BC Building Code to govern standards in respect of the construction, alteration, repair, demolition or occupancy of buildings in municipalities and regional districts in the Province;

**AND WHEREAS** it is deemed necessary to provide for the administration of the BC Building Code;

**AND WHEREAS** in relation to the conservation of energy and the reduction of greenhouse gas emissions, the Village may reference and implement, in whole or in part, the Energy Step Code,

**NOW THEREFORE** the Council of the Village of Pemberton, in open meeting assembled, enacts as follows:

**PART 1: CITATION**

1.1. This bylaw may be cited for all purposes as the “Village of Pemberton Building Bylaw No. 867, 2019”

**PART 2: DEFINITIONS**

2.1. In this Bylaw, the following words and terms have the meanings set out in Division A Part 1 Section 1.4 of the *British Columbia BC Building Code*:

***Assembly Occupancy, Building, Building Area, Building Height, Business and Personal Services Occupancy, Care or Detention Occupancy, Constructor, Coordinating Registered Professional, Designer, Field Review, First Storey, Grade, Heritage Building, High Hazard Industrial Occupancy, Major Occupancy, Mercantile Occupancy, Medium Hazard Industrial Occupancy, Occupancy, Registered Professional, and Residential Occupancy, Retaining Wall, Storey***

***Affordable Housing*** means dwelling units constructed and occupied under the terms of a registered housing agreement approved pursuant to section 483 of *the Local Government Act*.

***Affordable Rental Housing*** means rental dwelling units constructed and occupied under the terms of a registered housing agreement approved pursuant to section 483 of *the Local Government Act*.

***BC Building Code*** means the most current *British Columbia BC Building Code* as adopted by the Minister pursuant the *Local Government Act*, as amended or replaced from time to time.



**Chief Building Official** means the person appointed to this position for the *Village* and any person designated to act in the place of that person.

**Cannabis Production Facility** means a facility, licensed by the Federal Government under the *Cannabis Act* used solely for the production, manufacturing, processing, testing, packaging, and shipping of marijuana and marijuana products for medical or non-medical purposes.

**Complex Building** means a *building* categorized as a Part 3 *building* under the *BC Building Code*.

**Energy Step Code** means the energy performance standards set out in Subsection 9.36.6 of the *BC Building Code* and a reference to a numbered step in the *Energy Step Code* is a reference to a step established in that Subsection.

**Essential Services** means the services essential to the intended occupancy of a *building* or *structure* of part of a *building* or *structure*, as determined by the *Chief Building Inspector*.

**Farm Building** means a building or part thereof, which does not contain a residential occupancy or a *Cannabis Production Facility* and which is associated with and located on land devoted to the practice of farming, and used essentially for the housing of equipment or livestock, or the production, storage or processing of agricultural and horticultural produce or feed. For the purposes of this exemption, the farm building must be designed for “low human occupancy” as defined in the *National Farm Building Code of Canada* and the land must be classed as “farm” under the *Assessment Act*.

**Low Human Occupancy** means a density of less than one person per 40 square meters (430 square feet).

**Health and Safety Aspects of the Work** means design, construction, demolition or occupancy as defined in Division A Section 2.2 of the *BC Building Code*.

**Manufactured Home** means a factory built *detached dwelling unit*, certified prior to a placement on the *lot* as having been built:

- a) as a modular home in accordance with CSA A277 *building*; or
- b) as a mobile home in accordance with CAN/CSA Z240 building regulations and registered in the BC Manufactured Home Registry, arriving at the *lot* ready for occupancy apart from incidental operations and connections into a *community sewer* and *community water system*.

**National Farm BC Building Code** means the most current National Farm BC Building Code of Canada as adopted, amended or re-enacted from time to time.

**Non-Profit Housing** means housing development that a community-based, non-profit housing partner owns and operates.

**Owner** has the meaning set out in chapter 26, section 1 of the *Community Charter* and reproduced below:

*Owner means, in respect of real property,*

- a) *The registered owner of an estate in fee simple,*
- b) *The tenant for life under a registered life estate,*
- c) *The registered holder of the last registered agreement for sale,*
- d) *The holder or occupier of land held in the manner referred to in section 228 (taxation of Crown land used by others) or section 229 (taxation of municipal land used by others), and*
- e) *An Indian who is an owner under the letters patent of a municipality incorporated under section 9 (incorporation of reserve residents as village) of the Local Government Act.*

**Owner Builder** means a person who is authorized by BC Housing to build a new home for personal use.

**Plumbing Inspector** means the person appointed to this position for the Village and any person designated to act in the place of that person.

**Pool** means a structure or constructed depression used or intended to be used for swimming, bathing, wading or diving which is designed to contain water and has a depth, at any point, exceeding 0.6 m, including an in-ground pool and hot tub.

**Reasonable Grade** means that pedestrian travel/access is possible around all sides of the building without specialized knowledge or equipment. Such pedestrian travel/access paths to be a minimum of 1.2m in width and must project a minimum of 1.2m beyond the furthest *structure* on the lowest side of the building.

**Solid Fuel Burning Device** means a fireplace, chimney, woodstove, or other device that burns a material to release energy, creating heat.

**Standard Building** means a *building* categorized as a Part 9 *building* under the *BC Building Code*.

**Structure** means a construction or portion thereof of any kind, whether fixed to, supported by or sunk into land or water, but specifically excludes landscaping, fences, paving and *retaining* walls less than 1.2 meters in height.

**Supportive Living Housing** means a type of housing that provides on-site supports and services to residents who cannot live independently.

**Temporary Building** means a *building* or *structure* that complies with one or more of the following purposes and can be placed on a lot for a limited time:

- a) offices or storage for a construction site;
- b) relocation of a commercial, industrial or institutional use;
- c) residential sales centre on a multi-family lot;

- d) film or advertisement production;
- e) additional classroom space; or
- f) any other temporary use approved by the *Chief Building Official*.

**Village** means the Village of Pemberton.

2.2. If any section, subsection, sentence, clause, sub clause or phrase of this Bylaw is for any reason held to be invalid by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Bylaw.

### **PART 3: PURPOSE OF BYLAW**

- 3.1. The Bylaw, shall, notwithstanding any other provision herein, be interpreted in accordance with this section.
- 3.2. This Bylaw has been enacted for the purpose of regulating construction within the *Village* in the general public interest. The activities undertaken by or on behalf of the *Village* pursuant to this Bylaw are for the sole purpose of providing a limited and interim compliance monitoring function for reason of health, safety and the protection of persons and property. It is not contemplated nor intended, nor does the purpose of this Bylaw extend:
  - a) to the protection of *owners, owner builders or constructors* from economic loss;
  - b) to the assumption by the *Village* or the *Chief Building Official* of any responsibility for ensuring the compliance by any *owner*, their representatives or any employees, *constructors* or *designers* retained by him or her, with the *BC Building Code*, the requirements of this Bylaw or other applicable enactments respecting safety;
  - c) to providing any person a warranty of design or workmanship with respect to any *building* or *structure* for which a building permit or occupancy permit is issued under this bylaw;
  - d) to providing a warranty or assurance that construction undertaken pursuant to building permits issued by the *Village* is free from latent, or any defects.

### **PART 4: PERMIT CONDITIONS**

- 4.1. A permit is required whenever work regulated under this Bylaw is to be undertaken.
- 4.2. Neither the issuance of a permit under this Bylaw nor the acceptance or review of plans, drawings or supporting documents, nor any inspections made by or on behalf of the *Village* shall in any way relieve the *owner* or their representatives from full and sole responsibility to perform the work in strict accordance with this Bylaw, the *BC Building Code* and or other applicable enactments respecting safety.
- 4.3. It shall be the full and sole responsibility of the *owner* (and where the *owner* is acting through a representative) to carry out the work in respect of which the permit was issued in compliance with the *BC Building Code* and this Bylaw or other applicable enactments respecting safety.
- 4.4. Neither the issuance of a permit under this Bylaw nor the acceptance or review of plans, drawings or specifications or supporting documents, nor any inspections made by or on behalf

of the *Village* constitute in any way a representation, warranty, assurance or statement that the *BC Building Code*, this Bylaw or other applicable enactments respecting safety have been complied with.

- 4.5. No person shall rely upon any permit as establishing compliance with this Bylaw or assume or conclude that this Bylaw has been administered or enforced according to its terms. The person to whom the building permit is issued and their representatives are responsible for making such determination.

## **PART 5: SCOPE AND EXEMPTIONS**

- 5.1. This Bylaw applies to the design, construction and *occupancy* of new *buildings* and *structures* and the alteration, reconstruction, demolition, removal, relocation and *occupancy* of existing *buildings* and *structures*.
- 5.2. This Bylaw does not apply to *buildings* or *structures* exempted by Part 1 of the *BC Building Code* except as expressly provided herein, nor to *retaining walls* less than 1.2 meters in height.

## **PART 6: PROHIBITIONS**

- 6.1. No person shall commence or continue any construction, alteration, reconstruction, plumbing, demolition, removal, relocation or change the *occupancy* of any *building* or *structure* including excavation or other work related to construction, unless a *Chief Building Official* has issued a valid and subsisting permit for the work.
- 6.2. No person shall occupy or use any *building* or *structure* unless a valid and final inspection services report has been issued by a *Chief Building Official* for the *building* or *structure* or contrary to the terms of any permit issued or any notice given by a *Chief Building Official*.
- 6.3. No person shall knowingly submit false or misleading information to a *Chief Building Official* in relation to any permit application or construction undertaken pursuant to this Bylaw.
- 6.4. No person shall, unless authorized in writing by a *Chief Building Official*, reverse, alter, deface, cover, remove or in any way tamper with any notice, permit or certificate posted upon or affixed to a *building* or *structure* pursuant to this Bylaw.
- 6.5. No person shall do any work that is at a variance with the accepted design or plans of a *building*, *structure* or other works for which a permit has been issued, unless that variance has been accepted in writing by the *Chief Building Official*.

## **PART 7: CHIEF BUILDING OFFICIAL**

- 7.1. The *Chief Building Official* may:
  - a) administer this Bylaw;
  - b) keep records of permit applications, permits, notices and orders issued, inspections and tests made, and shall retain copies of all documents related to the administration of this Bylaw or electronic copies of such documents; and

- c) establish, if requested to do so, whether the methods or types of construction and types of materials used in the construction of a *building* or *structure* for which a permit is sought under this Bylaw substantially conform to the requirements of the *BC Building Code*.

7.2. The *Chief Building Official*:

- a) may enter any land, building, *structure*, or premises at any reasonable time for the purpose of ascertaining that the terms of this Bylaw are being observed;
- b) shall carry proper credentials confirming their status as a *Chief Building Official* when entering on property;
- c) where any residence is occupied, the *Chief Building Official* must, prior to entering the residence,
  - i. obtain the consent of the occupant; or
  - ii. deliver to an occupant at least 24 hours' written notice of the proposed entry stating the reasons for entry;

7.3. The *Chief Building Official* may order the correction of any work that is being or has been done in contravention of this Bylaw.

**PART 8: APPLICATIONS**

8.1. Every person shall apply for and obtain a permit, prior to:

- a) constructing, repairing or altering a *building* or *structure*;
- b) relocating a *building* or *structure*;
- c) excavating a lot in preparation for construction of a *building* or *structure*;
- d) constructing a foundation of a *building* or *structure*;
- e) demolishing a *building* or *structure*;
- f) constructing a masonry fireplace or installing a solid fuel burning appliance or chimney;
- g) constructing or altering any plumbing system;
- h) altering the use of a *building* or *structure*;
- i) constructing, altering or relocating a fire sprinkler system, unless the fire sprinkler system has not more than two heads; or
- j) installing or modifying a fire detection and alarm system in a complex building

unless the works are the subject of another valid building permit.

8.2. An application for a permit for work regulated under this Bylaw shall be made in in a form approved by the *Chief Building Official*.

- 8.3. All plans submitted with permit applications shall bear the name and address of the designer of the *building* or *structure*.
- 8.4. Every person shall apply for and obtain a separate permit for each *building* or *structure* to be constructed or altered on a site and shall be assessed a separate building permit fee based on the value of that *building* or *structure* as determined in accordance with **Schedule A**.

## **PART 9: APPLICATION FOR COMPLEX BUILDINGS**

- 9.1. An application for a building permit with respect to a *complex building* shall:
- a) be signed by the *owner*, or a signing officer if the *owner* is a corporation, and the *coordinating registered professional*;
  - b) be accompanied by the owner's acknowledgment of responsibility and undertakings made in the form prescribed by the *Chief Building Official*, signed by the *owner*, or a signing officer if the *owner* is a corporation;
  - c) include a copy of a title search made within thirty (30) days of the date of the application;
  - d) include a copy of all covenants, easements, and rights of way registered against the property;
  - e) unless the *Chief Building Official* waives the requirements for a site plan, in whole or in part, where the permit is sought for the repair or alteration of an existing *building* or *structure*, include a site plan prepared by a British Columbia Land Surveyor or a certified member of the Applied Science Technologists and Technicians of British Columbia who is registered in site improvement surveys (R.S.I.S.) showing:
    - i. the bearing and dimensions of the parcel taken from the registered subdivision plan;
    - ii. the legal description and civic address of the parcel;
    - iii. the location and dimensions of all statutory rights of way, easements and setback requirements;
    - iv. the location and dimensions of all existing and proposed *buildings* or *structures* on the parcel;
    - v. setbacks to the natural boundary of any lake, swamp, pond or watercourse where the Village's land use regulations establish siting requirements related to flooding;
    - vi. the existing and finished ground levels to an established datum at or adjacent to the site and the geodetic elevation of the underside of the floor system of a *building* or *structure* where the Village's land use regulations establish siting requirements related to minimum flood construction levels; and
    - vii. the location, dimension and gradient of parking and driveway access,
  - f) include floor plans showing:

- i. the dimensions and uses of all areas;
  - ii. the dimensions and height of crawl space and roof spaces;
  - iii. the locations, sizes and swing of doors;
  - iv. the location, size and opening of windows;
  - v. floor, wall and ceiling finishes;
  - vi. plumbing systems including plumbing fixtures;
  - vii. structural elements;
  - viii. stair dimensions; and
  - ix. major appliances;
- g) include a cross section through the *building* or *structure* illustrating foundations, drainage, ceiling heights and construction systems;
  - h) include elevations of all sides of the *building* or *structure* showing finish details, roof slopes, windows, doors, finished grade, and spatial separation calculations;
  - i) include cross-sectional details drawn at an appropriate scale and at sufficient locations to illustrate that the *building* or *structure* substantially conforms to the *BC Building Code*;
  - j) include copies of approvals required under any enactment relating to health or safety, including, without limitation, sewage disposal permits, highway access permits and Ministry of Health approvals;
  - k) include a letter of assurance in the form of Schedule A as referred to in Division C and Note A-2.2.7.2(1)(b) of the *BC Building Code*, signed by the *owner*, or a signing officer of the *owner* if the *owner* is a corporation, and the *coordinating registered professional*;
  - l) include letters of assurance in the form of Schedule B as referred to in *the BC Building Code*, each signed by such *registered professionals* as required by the *Chief Building Official* or *BC Building Code* in Division C and Note A-2.2.7.2 to prepare the design for and conduct field reviews of the construction of the building or structure.
  - m) include letters in the forms set out in Schedules C-A and C-B (See the end of Division C and Note A-2.2.7.2.(2), if an occupancy permit or final inspection from an authority having jurisdiction is required before an *owner* occupies or receives permission to occupy ; and
  - n) include three (3) sets of drawings at a suitable scale of the design prepared by each *registered professional* and including the information set out in sections 9.1.(f) to 9.1.(i) of this Bylaw.

9.2. In addition to the requirements of section 9.1, the *Chief Building Official* may require that any one or more of the following be submitted with a building permit application for the construction

of a complex building as the *Chief Building Official* considers warranted due to the complexity of the proposed building or structure or siting circumstances:

- a) a *BC Building Code* analysis showing conformance to the building to the current *BC Building Code*;
- b) a zoning analysis showing conformance to the Village's current Zoning Bylaw;
- c) site servicing drawings, including detail of off-site services indicating locations at the property line, in accordance with the Village's current Subdivision and Development Control Bylaw, prepared and sealed by a *registered professional*;
- d) a section through the site showing grades, *building, structures*, parking areas and driveways;
- e) any other information required by the *Chief Building Official* to establish substantial compliance with this Bylaw, the *BC Building Code* and other Bylaws and enactments relating to the *building or structure*.

## **PART 10: APPLICATION FOR STANDARD BUILDINGS**

10.1. An application for a building permit with respect to a *standard building* shall:

- a) be signed by the *owner*, or a signing officer if the *owner* is a corporation;
- b) be accompanied by the *owner's* acknowledgment of responsibility and undertakings made in the form prescribed by the *Chief Building Official*, signed by the *owner*, or a signing officer if the *owner* is a corporation;
- c) include a copy of all title searches made within thirty (30) days of the date of the application;
- d) include a copy of all covenants, statutory rights-of-way and easements registered against the property;
- e) unless the *Chief Building Official* waives the requirements for a site plan, in whole or in part, where the permit is sought for the repair or alteration of an existing *building or structure*, include a site plan prepared by a British Columbia Land Surveyor or a certified member of the Applied Science Technologists and Technicians of British Columbia who is registered in site improvement surveys (R.S.I.S.) showing:
  - i. the bearing and dimensions of the parcel taken from the registered subdivision plan;
  - ii. the legal description and civic address of the parcel;
  - iii. the location and dimensions of all statutory rights of way, easements and setback requirements;
  - iv. the location and dimensions of all existing and proposed buildings or *structures* on the parcel;



- v. setbacks to the natural boundary of any lake, swamp, pond or watercourse where the Village's land use regulations establish siting requirements related to flooding;
- vi. the existing and finished ground levels to an established datum at or adjacent to the site and the geodetic elevation of the underside of the floor system of a building or *structure* where the Village's land use regulations establish siting requirements related to minimum flood construction levels; and
- vii. the location, dimension and gradient of parking and driveway access;

f) include floor plans showing:

- i. the dimensions and uses of all areas;
- ii. the dimensions and height of crawl space and roof spaces;
- iii. the locations, sizes and swing of doors;
- iv. the location, size and opening of windows;
- v. floor, wall and ceiling finishes;
- vi. plumbing fixtures;
- vii. structural elements;
- viii. stair dimensions; and
- ix. major appliances;

g) include a cross section through the *building* or *structure* illustrating foundations, drainage, ceiling heights and construction systems;

h) include elevations of all sides of the building or *structure* showing finish details, roof slopes, windows, doors, finished grade, and spatial separation calculations;

i) include cross-sectional details drawn at an appropriate scale and at sufficient locations to illustrate that the *building* or *structure* substantially conforms to the *BC Building Code*;

j) include copies of approvals required under any enactment relating to health or safety, including, without limitation, sewage disposal permits, highway access permits and Ministry of Health approvals;

k) include letters of assurance in the form of Schedules B-1 and B-2 as required in subsection 2.2.7. of Division C of the *BC Building Code*; and

l) include two (2) sets of drawings at a suitable scale of the design including the information set out in sections 10.1.(e) – 10.1. (i) of this Bylaw.

10.2. In addition to the requirements of section 10.1, the applicant for a permit must provide the *Chief Building Official* with any one or more of following, to be submitted with a building permit

application for the construction of a *standard building* where the project involves two or more *buildings*, which in the aggregate total more than 1,000 square meters, or two or more *buildings* that will contain four or more dwelling units, or otherwise as the *Chief Building Official* considers to be warranted due to the complexity of the proposed *building* or *structure* or siting circumstances:

- a) site servicing drawings, including sufficient detail of off-site services to indicate locations at the property line, prepared and sealed by a *registered professional*, in accordance with the Village's current Subdivision and Development Control Bylaw.
- b) a section through the site showing grades, *buildings*, *structures*, parking areas and driveways;
- c) roof plan and roof height calculations;
- d) structural, electrical, mechanical or fire suppression drawings prepared and sealed by a *registered professional*;
- e) a foundation design prepared by a *registered professional* in accordance with section 4.2 of Part 4 of the *BC Building Code*, accompanied by letters of assurance in the form of Schedules B(s) as referred to in the *BC Building Code*, signed by the *registered professional* if a Geotechnical Engineer concludes that the foundation design will be outside the scope of Part 9 of the *BC Building Code*.
- f) any other information required by the *Chief Building Official* to establish substantial compliance with this Bylaw, the *BC Building Code* and other Bylaws and enactments relating to the *building* or *structure*.

## **PART 11: FARM BUILDINGS**

- 11.1. *Farm buildings* shall be designed and built in conformance with the *National Farm BC Building Code*.
- 11.2. Every owner shall ensure that all construction complies with the *National Farm BC Building Code*, this Bylaw and other applicable enactments.
- 11.3. An application for a *farm building* permit shall:
  - a) be signed by the *owner*, or a signing officer if the *owner* is a corporation;
  - b) be accompanied by the *owner's* acknowledgment of responsibility and undertakings made in the form prescribed by the *Chief Building Official*, signed by the *owner*, or a signing officer if the *owner* is a corporation;
  - c) include a copy of all title searches made no less than thirty (30) days of the date of the application;
  - d) include a copy of all covenants, statutory rights-of-way and easements registered against the property;
  - e) unless the requirement is waived by the *Chief Building Official* as being unnecessary to the application, in whole or in part, when the permit is sought for repair or alteration of an

existing *building* or *structure*, include a site plan prepared by a British Columbia Land Surveyor or a certified member of the Applied Science Technologists and Technicians of British Columbia who is registered in site improvement surveys (R.S.I.S.) showing:

- i. the bearing and dimensions of the parcel taken from the registered subdivision plan;
  - ii. the legal description and civic address of the parcel;
  - iii. the location and dimensions of all statutory rights of way, easements and setback requirements;
  - iv. the location and dimensions of all existing and proposed *buildings* or *structures* on the parcel;
  - v. setbacks to the natural boundary of any lake, swamp, pond or watercourse where the Village's land use regulations establish siting requirements related to flooding;
  - vi. the existing and finished ground levels to an established datum at or adjacent to the site and the geodetic elevation of the underside of the floor system of a *building* or *structure* where the Village's land use regulations establish siting requirements related to minimum flood construction levels; and
  - vii. the location, dimension and gradient of parking and driveway access;
- f) include scaled construction drawings showing floor plans of the proposed building with the proposed uses of all areas, a cross-section of building showing proposed heights and confirmation that the building meets all the required design loads as per the *National Farm BC Building Code*;
- g) include any other information required by the *Chief Building Official* or the *National Farm BC Building Code* to establish substantial compliance with this Bylaw, the *National Farm BC Building Code* and other Bylaws and enactments relating to the *building* or *structure*.

## **PART 12: TEMPORARY BUILDINGS**

12.1. An application for a *temporary building* permit shall:

- a) be signed by the *owner*, or a signing officer if the *owner* is a corporation;
- b) be accompanied by the *owner's* acknowledgment of responsibility and undertakings made in the form prescribed by the *Chief Building Official*, signed by the *owner*, or a signing officer if the *owner* is a corporation;
- c) include a copy of all title searches made within thirty (30) days of the date of the application;
- d) include a copy of all covenants, statutory rights-of-way and easements registered against the property;

e) unless the requirement is waived by the *Chief Building Official* as being unnecessary to the application, in whole or in part, include a site plan prepared by a British Columbia Land Surveyor (B.C.L.S.) or a certified member of the Applied Science Technologists and Technicians of British Columbia who is registered in site improvement surveys (R.S.I.S.) showing:

- i. the bearing and dimensions of the parcel taken from the registered subdivision plan;
- ii. the legal description and civic address of the parcel;
- iii. the location and dimensions of all statutory rights of way, easements and setback requirements;
- iv. the location and dimensions of all existing and proposed *buildings* or *structures* on the parcel;
- v. setbacks to the natural boundary of any lake, swamp, pond or watercourse where the Village's land use regulations establish siting requirements related to flooding;
- vi. the existing and finished ground levels to an established datum at or adjacent to the site and the geodetic elevation of the underside of the floor system of a building or *structure* where the Village's land use regulations establish siting requirements related to minimum floor elevation; and
- vii. the location, dimension and gradient of parking and driveway access;

12.2. Notwithstanding anything contained elsewhere in this bylaw, a permit for a *temporary building* may be issued by the *Chief Building Official*, authorizing for a limited time only the erection and existence of a building or *structure* or part thereof, for an occupancy which will exist for a short time under circumstances that warrant only selective compliance with this Bylaw or the *BC Building Code*.

12.3. A permit for a *temporary building* shall state the date after which and the conditions under which the permit is no longer valid.

12.4. A permit for a *temporary building* may be extended provided permission in writing is granted by the *Chief Building Official*.

12.5. A permit for a *temporary building* must be posted on the building.

### **PART 13: FEES AND CHARGES**

13.1. In addition to applicable fees and charges required under other Bylaws, the applicant for a permit under this Bylaw must pay in full a permit fee, calculated in accordance with **Schedule A** of this Bylaw, prior to its issuance.

13.2. The applicant for a building permit must pay the applicable plan processing fee as set out in **Schedule A**, to which the following conditions apply:

- a) the plan processing fee is non-refundable and shall be credited against the building permit fee when the permit is issued.
  - b) an application shall be cancelled, and the plan-processing fee forfeited, if the building permit has not been issued and the permit fee paid within 180 days of the date of the written notification to the *owner* that the permit is ready to be issued.
  - c) when an application is cancelled the plans and related documents submitted with the application may be destroyed.
  - d) plan processing fees do not apply to permits other than building permits.
- 13.3. Every applicant for a building permit shall deposit with the Village a security in the form of cash, in accordance with the charges set out in **Schedule A** of this bylaw.
- a) the security shall be returned within 30 days upon confirmation that site services as-built drawings showing locations of sewer and water connections are submitted to and accepted by the *Chief Building Official* or by the person designated by the Manager of Operations.
- 13.4. The *owner* may obtain a refund of the permit fees set out in **Schedule A** when a permit is surrendered and cancelled before any construction begins, as determined by the *Chief Building Official*, provided that:
- a) the refund shall not include the plan processing fee paid pursuant to section 11.2 of this Bylaw; and
  - b) no refund shall be made where construction has begun, or an inspection had been made.
- 13.5. Where, due to non-compliance with this Bylaw, more than two (2) inspections are necessary when one (1) inspection is normally required, for each inspection after the second inspection, a re-inspection charge as set out in **Schedule A** shall be paid by the applicant prior to any additional inspections being performed.
- 13.6. Fees for miscellaneous services related to the administration of this Bylaw and related enactments shall be charged at an hourly rate in accordance with charges as set out in **Schedule A** to this bylaw.
- 13.7. A fee, as set out in Schedule A, shall be payable in advance to reactivate a building permit that has expired.
- 13.8. A fee, as set out in Schedule A, shall be payable in advance to extend a building permit as permitted under section 14.4.
- 13.9. A fee, as set out in Schedule A, shall be payable in advance for revision of plans after submission of the building permit application.
- 13.10. Every applicant for a *temporary building* permit shall deposit with the *Village* a security, in the form of cash or an irrevocable letter of credit, against the cost of removal of the *temporary building* in accordance with the charges set out in **Schedule A** of this bylaw.

- a) the security shall be returned within 30 days, less any repair or removal costs incurred, upon termination of the temporary building permit and upon confirmation that the *temporary building* has been removed from the lot.
- 13.11. Every applicant for a *foundation* permit shall deposit with the Village a, security in the form of cash or an irrevocable letter of credit, against the cost of site restoration in accordance with the charges set out in **Schedule A** of this bylaw.
- a) the security shall be returned within 30 days upon issuance of the building permit.
- 13.12. Where the proposed work includes excavation or construction on lands within 10 metres of a *Village* roadway, sewer, drain or water main or other *Village* work, the applicant shall deposit with the *Village* a security, in the form of cash or an irrevocable letter of credit, against the cost of repairs to such works in accordance with the charges set out in **Schedule A** of this Bylaw.
- a) the security shall be returned within 30 days, less any repair costs incurred, upon granting of final inspection of the related building permit or where the building permit has been cancelled and upon confirmation that the *Village* works have not been damaged or, if damage has occurred, that it has been fully repaired.
- 13.13. Every *owner* to whom a permit is issued is responsible for the cost to repair any damage to *Village* works or land that occurs during the work authorized by the permit.
- 13.14. *Village* Council may, by resolution, reduce, waive or refund any non-legislated building permit fees or security deposits when the applicant seeks approval for:
- a) *non-profit or affordable housing*, including *supportive living housing*;
  - b) *for-profit affordable rental housing*.

#### **PART 14: BUILDING PERMITS**

- 14.1. The *Chief Building Official* may issue the permit for which an application is made when the following conditions have been met:
- a) a completed application including all required supporting documentation has been submitted;
  - b) the proposed work set out in the application conforms with the *BC Building Code*, this Bylaw and all other applicable Bylaws and enactments;
  - c) the *owner* or their representative has paid all the charges and met all requirements imposed by this and any other enactment or Bylaw;
  - d) no enactment, covenant, agreement, or regulation of the *Village* authorizes the permit to be withheld;
  - e) the *owner* has retained a professional engineer or geoscientist if required by the provisions of the *Engineers and Geoscientists Act*; and
  - f) the *owner* has retained an architect if required by the provision of the *Architects Act*.

- 14.2. When the application is in respect of a *building* that includes, or will include, a *residential occupancy*, the building permit must not be issued unless the *owner* provides evidence pursuant to section 30 (1) of the *Homeowner Protection Act* that the proposed building:
- a) is covered by home warranty insurance, and
  - b) the *constructor* is a licensed residential builder
- unless the owner is not required to be licensed and to obtain home warranty insurance in accordance with sections 20 (3) or 30 (1) of the *Homeowner Protection Act*.
- 14.3. Every permit is issued upon the condition that the permit shall expire and the rights of the *owner* under the permit shall terminate if:
- a) the work authorized by the permit is not commenced within twelve (12) months from the date of issuance of the permit;
  - b) work is discontinued for a period of twelve (12) months; or
  - c) the work is not completed within two (2) years of the date of issuance of the permit,
- unless the *owner* has been granted an extension by the *Chief Building Official* and has paid the permit extension fee as set out in **Schedule A** of this Bylaw.
- 14.4. The *Chief Building Official* may extend the period of time set out under section 14.3. (a), (b) or (c) where construction has not been commenced or where construction had been discontinued due to adverse weather, strike, material or labour shortages, or to a similar hardship that the *Chief Building Official* considers to be beyond the *owner's* control.
- 14.5. When a site has been excavated under a foundation permit and a building permit is not subsequently issued or a subsisting building permit has expired in accordance with the requirements of subsection 14.3, but without the construction of the *building* or *structure* for which the building permit was issued having commenced, the *owner* shall fill in the excavation to restore the original gradients of the site within sixty (60) days of being served notice by the *Chief Building Official* to do so.
- 14.6. Prior to issuance of a building or demolition permit for a complex building, a fire safety plan as per Division B, Section 5.6.1.2(1) of the *BC Fire Code* shall be prepared for the site and submitted to the *Chief Building Official*.

## **PART 15: PLUMBING PERMITS**

- 15.1. Except as provided in subsection 15.4, a plumbing system shall not be constructed, extended, altered, renewed or repaired unless a plumbing permit to do so has been obtained.
- 15.2. Plumbing permits shall be issued only to:
- a) a licensed plumbing contractor; or
  - b) a person to do work in a building, owned by them only as their domestic domicile, provided they have satisfied the authority having jurisdiction that they are competent to perform such work.

- 15.3. A plumbing permit shall not be transferable.
- 15.4. A plumbing permit is not required when:
- a) a stoppage in a drainage system is cleared;
  - b) a leak is repaired in a water distribution system;
  - c) a fixture is replaced without any change to the drainage system; or
  - d) a replacement is made to existing faucets, service water heater, valves, pipes or fittings in a water distribution system.
- 15.5. When a permit is required the work shall not be covered until the system has been tested and inspected. If any part of the system is not approved after it has been inspected or tested, the *owner* shall make any alteration or replacement that is necessary, and the work may be subjected to further inspection or testing.
- 15.6. Prior to calling for a plumbing inspection, all drains and vents shall be completed, and the system filled with water or pressurized air up to the roof or to the highest point of connection to an existing vent. The *Plumbing Inspector* may then certify, if applicable, that the system does not leak and that it is constructed in accordance with the applicable requirements.
- 15.7. Prior to the final inspection, all fixtures and equipment shall be installed and ready for use.
- 15.8. If a fixture has been roughed-in for future use, the outlet shall be sealed with an approved plug or cap.
- 15.9. Connections to potable water systems shall be designed so that non-potable water, foreign matter, foreign chemicals or substances that may render the water non-potable cannot enter the system.
- 15.10. The *Chief Building Official* may issue a plumbing permit for a portion of a *building* or *structure* before the design, plans and specifications for the entire *building* or *structure* have been accepted, provided sufficient information had been provided to the *Village* to demonstrate to the *Chief Building Official* that the portion authorized to be constructed substantially complies with this and other applicable Bylaws and the permit fee applicable to that portion of the *building* or *structure* has been paid.
- a) The issuance of the permit notwithstanding, the requirements of this Bylaw apply to the remainder of the *building* or *structure* as if the permit for the portion of the *building* or *structure* had not been issued.
- 15.11. Fixtures discharging sewage that includes fats, oils, grease or grit located in public kitchens, restaurants or any other applicable *occupancy* must be equipped with the appropriate trap or interceptor, complying with Part 7 of the *BC Building Code*.

## **PART 16: RISK OF FLOOD AND OTHER HAZARDS**

- 16.1. If the *Chief Building Official* considers that construction would be on land that is or is likely to be subject to flooding, mud flows, debris flows or torrents, erosion, ~~land slip~~, rockfalls,



subsidence or avalanche, the *Chief Building Official* may require the owner to provide a report prepared by a professional engineer or geoscientist with experience in geotechnical study and geo-hazard assessments certifying that the land may be used safely for its intended use.

- 16.2. If a report required under subsection 16.1 is not provided, or the engineer or geoscientist determines that the land cannot be used safely for the use intended, a *building permit* may not be issued.
- 16.3. If the engineer or geoscientist certifies that the land may be used safely for the use intended if used in accordance with the conditions specified in the report provided to the *Chief Building Official*, a permit may be issued on the following conditions:
- a) the owner covenants with the *Village* to use the land only in the manner certified by the engineer or geoscientist as enabling the safe use of the land for the use intended;
  - b) the covenant contains conditions for reimbursing the *Village* for any expenses that may be incurred by it as a result of a breach of the covenant; and
  - c) the covenant is registered under section 219 of the *Land Title Act* (British Columbia).

## **PART 17: PROFESSIONAL DESIGN AND FIELD REVIEW**

- 17.1. When the *Chief Building Official* considers that the site conditions, size or complexity of a development or an aspect of a development warrant, he or she may require a *registered professional* provide design and plan certification and *field review* by means of letters of assurance in the form of Schedules B and C-B referred to in the *BC Building Code*.
- 17.2. Prior to the issuance of a final *inspection services* report for a *complex building*, or *standard building* in circumstances where letters of assurance have been required in accordance with sections 10.1.(j), 10.2.(e) or 17.1 of this Bylaw, the *owner* shall provide the *Chief Building Official* with letters of assurance in the form of Schedules C-A or C-B as is appropriate, referred to in the *BC Building Code*.
- 17.3. When a *registered professional* provides letter of assurance in accordance with sections 9.1.(l), 10.1.(j), 10.2.(e), 17.1 or 17.2 of this Bylaw, he or she shall also provide proof of professional liability insurance to the *Chief Building Official* in the form as prescribed by the *Chief Building Official*.

## **PART 18: RESPONSIBILITY OF THE OWNER**

- 18.1. Every *owner* shall ensure that all construction complies with the *BC Building Code*, this Bylaw and other applicable enactments respecting safety.
- 18.2. Every *owner* to whom a permit is issued shall be responsible for the cost of repair of any damage to municipal works that occurs in the course of the work authorized on the permit.
- 18.3. If an owner of real property or other responsible person defaults in paying the cost referred to in Section 18.2 to the Village within thirty (30) days after receipt of a demand for payment from the Village, the Village may either recover from the owner or other responsible person, in any court of competent jurisdiction, the costs as a debt to the Village, or direct that the amount of the cost be added to the real property tax roll as a charge imposed in respect of work or

service provided to the real property of the owner, and be collected in the same manner as property taxes.

- 18.4. Every *owner* to whom a permit is issued shall, during construction:
- a) Post and maintain the permit in a conspicuous place on the property in respect of which the permit was issued;
  - b) Keep a copy of the accepted designs, plans and specifications on the property; and
  - c) Post the civic address on the property in a location visible from any adjoining streets.
  - d) Ensure that the construction site is kept tidy with all construction materials, waste, debris, soil and water from demolition, excavation or construction activity contained within the property boundaries.

## **PART 19: INSPECTIONS**

- 19.1. When a *registered professional* provides letters of assurance in accordance with paragraphs 9.1.(l), 10.1.(k), 10.2.(e) or subsections 17.1 or 17.2 of this Bylaw, the *Village* will rely solely on *field reviews* undertaken by the *registered professional* and the letters of assurance submitted pursuant to subsection 17.2 of this Bylaw as assurance that the construction substantially conforms to the design and that the construction substantially complies with the *BC Building Code*, this Bylaw and other applicable enactments respecting safety.
- 19.2. *Registered professional* field review reports must be submitted to the *Chief Building Official* within seven (7) days of the occurrence.
- 19.3. Despite subsection 19.1 of this Bylaw, the *Chief Building Official* may attend the site from time to time during construction to ascertain that the field reviews are taking place and to monitor the field reviews undertaken by the *registered professionals*.
- 19.4. The *Chief Building Official* may periodically attend the site of the construction of *standard buildings* or *structures* to ascertain whether the *health and safety aspects of the work* are being carried out in a substantial conformance with those portions of the *BC Building Code*, this Bylaw and any other applicable enactments concerning safety.
- 19.5. Subject to subsection 19.7, the *owner* or his representative shall obtain an inspection and receive the *Chief Building Official's* acceptance in writing of the following aspects of the work prior to concealing each, as applicable:
- a) footing and foundation, as shown by a survey, prior to and after the placement of formwork;
  - b) perimeter drains and damp proofing;
  - c) plumbing rough-in, below ground;
  - d) plumbing rough-in, above ground;
  - e) hydronic heating system;

- f) under slab insulation;
- g) fire sprinklers
- h) fireplace and chimney;
- i) mechanical ventilation;
- j) framing after all services installed;
- k) rain screen;
- l) paper & wire prior to first coat stucco;
- m) first coat of stucco;
- n) second coat of stucco;
- o) insulation and vapour barrier;
- p) drywall for fire separation in buildings containing secondary suites, multiple residential and multiple commercial occupancies, before tape or filler is applied;
- q) other inspections as required by the *Chief Building Official*.

19.6. The *owner* or his representative shall obtain an inspection and receive acceptance in writing from the *Chief Building Official* or from the person designated by the Manager of Operations of the following aspects of the work prior to concealing each, as applicable:

- a) sanitary and storm sewer; and
- b) water service.

19.7. The requirements of subsection 19.5 of this Bylaw do not apply to any aspect of the work that is the subject of a *registered professional's* letter of assurance provided in accordance with paragraphs 9.1.(l), 10.1.(k), 10.2.(e), or subsections 17.1 or 17.2 of this Bylaw.

19.8. If any aspect of the work referred to in section 19.5 of this bylaw is concealed prior to the *Chief Building Official* accepting it in writing, the *Chief Building Official* may order that it be uncovered at the *owner's* expense to permit an inspection.

19.9. The following documents, where applicable, must be received and reviewed by the *Chief Building Official* prior to scheduling an inspection:

- a) Forms/Foundation Inspection:
  - i. Building Location Certificate provided by a British Columbia Land Surveyor with elevation for top of concrete for Flood Construction Level (FCL) calculation;
  - ii. Geotechnical Engineer field review for soil bearing;
  - iii. Structural Engineer field review for footings;
  - iv. Structural Engineer field review for foundation walls.

b) Prior to backfilling:

- i. Geotechnical Engineer field review for rock pit;
  - ii. Geotechnical Engineer field review for site drainage.
- c) Framing/Sheathing Inspection:
- i. Structural Engineer field review;
  - ii. Sealed joist and beam layout;
  - iii. Sealed roof truss layout and sealed truss specifications;
  - iv. Fire Suppression Engineer field review;
  - v. Repair details and sign off by engineer for i-joist and roof truss where required.
- d) Final Inspection:
- i. Structural Engineer Schedule C-B;
  - ii. Geotechnical Engineer Schedule C-B;
  - iii. Fire Suppression Engineer Schedule C-B;
  - iv. 3<sup>rd</sup> party field report with Schedule B and Schedule C-B for unvented roof spaces;
  - v. Spray foam certification;
  - vi. Septic Engineer Schedule C-B;
  - vii. Sealed drawings with Schedule B and Schedule C-B (Architectural 1.5 & 1.6) for glass guards;
  - viii. Part 5 certification for non-compliant windows, doors and skylights;
  - ix. 3<sup>rd</sup> party report for energy modelling;
  - x. Mechanical Ventilation Checklist for all dwellings;
  - xi. Decking membrane certification;
  - xii. Copy of electrical and gas permits and notice of completion from Technical safety BC;
  - xiii. Engineering for *retaining walls* with field review, Schedule B, and Schedule C-B;
  - xiv. a sewer/water drawing showing the location of services from the Village connection to the point of entry at the house, triangulated against landmarks or permanent structures;
- e) Any other documents required by the *Chief Building Official*.

## **PART 20: OCCUPANCY REQUIREMENTS**

- 20.1. No person shall occupy a *building* or *structure* or part of a *building* or *structure* unless all life safety systems are complete and a final inspection has been issued in the form of an inspection services report granting interim occupancy.
- 20.2. A final inspection shall not be issued unless:
- a) all letters of assurance have been submitted when required in accordance with sections 9.1.(l), 10.1.(j), 10.2.(e) or subsections 17.1 or 17.2 of this Bylaw; and
  - b) all aspects of the work requiring inspection and acceptance pursuant to subsection 19.5 of this Bylaw have been inspected and accepted or the inspections and acceptance are not required in accordance with subsection 19.6 of this Bylaw.
- 20.3. The *Chief Building Official* may issue a final inspection for part of a *building* or *structure* when the part of the *building* or *structure* is self-contained, provided with *essential services* and the requirements set out in subsection 20.2 of this Bylaw have been met with respect to it.

## **PART 21: SITE GRADING AND DRAINAGE**

- 21.1. The *owner* of land on which a *building* or *structure* is being constructed must control the site drainage such that other sites are not impacted and in particular:
- a) Each lot must be graded to drain into a municipal drainage system or a natural watercourse without draining onto adjacent lots;
  - b) Areas adjacent to *buildings* shall be graded away from the foundations to prevent flooding;
  - c) Lots lower than adjacent roadways must be provided with storm water management facilities to direct storm runoff to a drainage system approved by the *Chief Building Official* or by the person designated by the Manager of Operations;
  - d) In the case of storm runoff not directed to a municipal drainage system, storm runoff may occur to a natural watercourse by means of sheet flow only, and not by means of swales or pipes or other artificial means.

## **PART 22: RETAINING STRUCTURES**

- 22.1. A *registered professional* shall undertake the design and conduct *field reviews* of the construction of a *retaining wall* greater than 1.2 meters in height.
- 22.2. Sealed copies of the design plan and *field review* reports prepared by the *registered professional* for all *retaining walls* greater than 1.2 meters in height shall be submitted to the *Chief Building Official* prior to acceptance of the works.

## **PART 23: SWIMMING POOLS**

- 23.1. A person must not construct or structurally repair a swimming *pool* without a valid building permit.
- 23.2. A swimming *pool*, including a spa or hot tub must be enclosed within a fence constructed without footholds or grips that children may use to climb into the enclosed area, having a minimum height of 1.5 metres and no openings greater than 100 mm at their least dimension.
- 23.3. *Pool* plumbing shall be arranged so that *pool* water cannot enter any water supply line and once having been drained from the *pool* cannot be returned to the *pool* without filtering, and so that sewage from any sanitary sewer or sewage disposal system cannot enter the *pool* or the *pool* filtering system.
- 23.4. In addition to information otherwise required by this Bylaw, an applicant for a permit to construct a *pool* shall provide a scaled plan showing the location, enclosure details, depth and dimensions of the *pool* and its structural details, and all water supply piping and appurtenances.
- 23.5. Access through a fence enclosing a swimming *pool*, spa or hot tub must be only through a self-closing and self-latching gate designed and constructed or installed so as to cause the gate to return to a closed position when not in use and secured by a latch located on the swimming *pool*, spa or hot tub side of the gate.

- 23.6. In lieu of a fence, a spa or hot tub may be covered with a locking cover which would prevent unauthorized access to the water.
- 23.7. A person must not use or occupy a swimming *pool*, including a spa or hot tub, unless the owner or occupier of property on or in which a pool, spa or hot tub is located maintains every fence or cover required under sections 21.2 to 21.6 of this Pat 21 in good order.

#### **PART 24: BC ENERGY STEP CODE REQUIREMENTS**

24.1. Effective January 1, 2020:

- a) Any residential *building* regulated by Part 9 of the *BC Building Code*, excluding manufactured homes, must be designed and constructed to meet the minimum performance requirements of Step 3 of the *Energy Step Code*.
- b) Any commercial *building* regulated by Part 9 of the *BC Building Code* must be designed and constructed to meet the minimum performance requirements specified in Step 2 of the *Energy Step Code*.

24.2. Effective January 1, 2021:

- a) Any residential *building* regulated by Part 9 of the *BC Building Code*, excluding manufactured homes, must be designed and constructed to meet the minimum performance requirements specified in Step 4 of the *Energy Step Code*.
- b) Any commercial *building* regulated by Part 9 of the *BC Building Code* must be designed and constructed to meet the minimum performance requirements specified in Step 3 of the *Energy Step Code*.

#### **PART 24: SITE SERVICES**

- 24.1. The minimum depth of bury for water services shall be 1.8 meters (6 feet) unless the *owner* provides the *Chief Building Official* with evidence that a lesser depth will not increase the risk of freezing.
- 24.2. The minimum depth of bury for sanitary sewer and storm drain services shall be 1.2 meters (4 feet) unless the *owner* provides the *Chief Building Official* with evidence that a lesser depth will not increase the risk of freezing.
- 24.3. When required by a *Chief Building Official* or by the person designated by the Manager of Operations, the *owner* or the *owner's* agent shall submit to the *Chief Building Official* a record drawing showing the installation of potable water service, sanitary sewer service and storm drain service installations and indicating sizes and types of material and all fittings and references for cleanouts triangulated to substantially permanent landmarks such as building foundations, hydro kiosks and the like.

#### **PART 25: SURVEYOR'S OR SITE IMPROVEMENT CERTIFICATES**

- 25.1. Prior to the placing of concrete in forms for the foundations for a *building* or *structure*, the owner must ensure that the location of the forms in relation to Land Title Office plans and B.C.L.S. monuments property lines, easements, or rights-of-way have been established by a B.C.L.S or a certified member of R.S.I.S.

- 25.2. Prior to the occupancy of a *building* or *structure*, the owner must ensure that the location of the foundations in relation to Land Title Office plans and B.C.L.S. monuments property lines, easements, or rights-of-way have been established by a B.C.L.S. or a certified member of the R.S.I.S.
- 25.3. The site improvement surveys required in subsections 25.1 and 25.2 of this Bylaw must show:
- a) the shortest distances from the outer surfaces of the foundations of the *building* or *structure* on the property to the adjacent property lines, easements, or rights-of-way; and
  - b) the elevation of the applicable aspect of the floor system in relation to a flood reference, where the *Village's* land use regulations establish siting requirements related to flooding.

## **PART 26: STOP WORK ORDER**

- 26.1. The *Chief Building Official* may order the cessation of any work that is proceeding in contravention of the *BC Building Code* or this Bylaw by posting a Stop Work notice in the form prescribed by the *Village*.
- 26.2. The *owner* of property on which a Stop Work notice has been posted, and every other person, shall cease all construction work immediately and shall not do any work until all applicable provisions of this Bylaw and any other applicable bylaw have been substantially complied with and the Stop Work notice has been rescinded in writing by a *Chief Building Official*.
- 26.3. Where a person occupies a *building, structure, temporary building* or *farm building* or part of a *building* or *structure* in contravention of this Bylaw a *Chief Building Official* may post a Do Not Occupy notice in the form prescribed by the *Chief Building Official* or *Corporate Officer* on the affected part of the *building* or *structure*.
- 26.4. The *owner* of property on which a Do Not Occupy notice has been posted, and every person, shall cease *occupancy* of the *building* or *structure* immediately and shall refrain from further occupancy until all applicable provisions of the *BC Building Code* and this Bylaw and any other applicable bylaw have been substantially complied with and the Do Not Occupy notice has been rescinded in writing by a *Chief Building Official*.
- 26.5. Every person who commences work requiring a building permit without first obtaining such a permit shall, if a Stop Work notice is issued and remains outstanding for thirty (30) days, pay a fee of \$1,000 in addition to the building permit fee as set out in **Schedule A** of this Bylaw prior to obtaining the required building permit.

## **PART 27: PENALTIES AND ENFORCEMENT**

- 27.1. Any person who:
- a) contravenes any provision of this bylaw;
  - b) fails to comply with any order or notice issued by the *Chief Building Official*;
  - c) causes or allows any act or thing to be done in contravention of any provision of this bylaw;  
or

d) fails or neglects to do anything required to be done by any provision of this bylaw  
commits an offence, and each day that the offence continues constitutes a separate offence.

27.2. A person found guilty of an offence under this bylaw is liable if:

- a) proceedings are brought under the *Offence Act (B.C.)*, to pay a fine to maximum of \$10,000 and such other amounts as the court may impose in relation to the offence;
- b) a ticket is issued under the Village of Pemberton Municipal Ticket Information Utilization Bylaw No. 845, 2018, as amended or replaced from time to time, to pay a fine to a maximum of \$1,000;
- c) a bylaw notice is issued under a bylaw made under the *Local Government Bylaw Notice Enforcement Act*, to pay a penalty to a maximum authorized under that *Act*.

27.3. The *Chief Building Official* may enforce the provisions of this Bylaw.

## **PART 28: REPEAL AND SCHEDULES**

28.1. The following bylaw and its amendments are hereby repealed:

- a) Village of Pemberton Building Bylaw No. 694, 2012
- b) Building Bylaw Amendment (Farm Building Exemption) Bylaw No. 754, 2014

28.2. **Schedule A** is attached and forms part of this Bylaw.

**READ A FIRST TIME** this 9<sup>th</sup> day of July, 2019.

**READ A SECOND TIME** this 9<sup>th</sup> day of July, 2019.

**READ A THIRD TIME** this 9<sup>th</sup> day of July, 2019.

**ADOPTED** this 30<sup>th</sup> day of July, 2019.

---

Mike Richman  
Mayor

---

Sheena Fraser  
Corporate Officer



**Schedule A**  
Permit and Inspection Fees & Deposits

<b>Bylaw Section</b>	<b>Fee Type</b>	<b>Fee</b>	<b>Unit</b>
13.1	<b>Building Permit Fees</b>		
	Building permit*	\$10.00	/ \$1,000 of value of construction or fraction thereof up to \$100,000
		\$7.00	/ \$1,000 of construction valuation or fraction thereof in excess of \$100,000
		\$75	Minimum fee per permit
26.5	Additional fee if Stop Work Notice issued prior to issuance of building permit and remains outstanding for 30 days or more	\$1,000	permit
13.1	<b>Other Permit Fees</b>		
	Temporary building permit	\$300	building or structure
	Excavation permit	\$250	building or structure
	Foundation Permit	\$250	Building or structure
	Demolition permit	\$160	building or structure
	Relocation permit (plus cost of capping off Village services)	\$160	building or structure
	Solid fuel burning device permit	\$75	Per device
	Fire suppression system permit	\$3	sprinkler head
		\$75	minimum fee per system
	Fire detection and alarm system permit	\$75	system
	Plumbing permit	\$15.00	fixture
		\$90	minimum fee per permit
	Masonry permit	\$75	flue
	Retaining wall permit	\$75	retaining wall
	Swimming pool permit	\$250	swimming pool
13.2	<b>Plan Processing Fee**</b>		
	Standard building	\$300	building or structure
	Complex building	25% of permit fee	building or structure

Bylaw Section	Fee Type	Fee	Unit
	Farm building	\$150	Building or structure
	Temporary building	\$150	Building or structure
13	<b>Inspection Fees</b>		
13.4	Re-inspection	\$100	inspection
13	<b>Administrative and Miscellaneous Fees &amp; Security</b>		
	Large format copy or scan (maps & plans)	Costs + 10% + applicable taxes	
	Professional design fee reduction if all aspects of the building or structure are certified in compliance with the BC Building Code and final Schedule C's for all disciplines are submitted prior to occupancy	-5% of permit fee	
	Covenant Preparation	\$100 + costs + 10% + applicable taxes	
	Building Regulation Notice Against Title (Land Title and Survey Authority) Notice application/removal and administrative and registration Fees	\$500	notice
13.3	Security deposit for site services as-built drawings	\$1,000	building permit
13.5	Miscellaneous services not otherwise listed	\$100 + applicable taxes	hour
13.6	Reactivate an expired permit	\$150	permit
13.7	Building permit extension	\$100	permit
13.8	Plan revision after submission of building permit application	\$100 + applicable taxes	hour
		\$25 minimum fee	
13.9	Security deposit for temporary building permit	\$5,000 deposit	permit
13.10	Security deposit for foundation permit	\$1,000 deposit	permit
13.11	Security deposit for work proposed on lands within 10 metres of Village works, single-family or duplex	\$2,500 deposit	lot
	Security deposit for work proposed on lands within 10 metres of Village works, multi-family residential	\$1,000 deposit	unit
	Security deposit for work proposed on lands within 10 metres of Village works, other than residential	\$5,000 deposit	permit
18.2	Repair to damaged Village works	Costs + 10% + applicable taxes	

\*Valuation of Construction for a building or structure is the value of construction declared by the applicant on the building permit application, or if the *Chief Building Official* is of the view that the construction value declared is not accurate, the value based on the current edition of *Marshall and Swift Residential Cost Handbook*, Marshall Valuation Services, or other current valuations reasonably appropriate to the type of construction as determined by the *Chief Building Official*.

\*\* Non-refundable fee due at time of application.

Fees and Charges Schedule  
Building Permits, Inspections and Services

The following fees, charges, and deposits apply to building permits and services:

Building Bylaw No. XXX, 2021 Section	Fee Type	Fee	Unit
<b>Building Permit Fees</b>			
17.2	<i>Building, pool, or pond</i> permit*	\$10.00	/ \$1,000 of cost of construction or fraction thereof up to \$100,000
		\$7.00	/ \$1,000 of cost of construction or fraction thereof in excess of \$100,000
		\$100	minimum fee per permit
17.6	Penalty if <i>Work Without Permit</i> or <i>Stop Work</i> notice issued prior to issuance of permit	\$1,000	permit
<b>Other Permit Fees</b>			
17.2	Excavation permit	\$250	<i>building</i> or <i>structure</i>
	<i>Foundation</i> permit	\$250	<i>building</i> or <i>structure</i>
	Demolition permit	\$160	<i>building</i> or <i>structure</i>
	Relocation permit (plus cost of capping off <i>Village</i> services)	\$160	<i>building</i> or <i>structure</i>
	<i>Solid fuel burning appliance</i> permit	\$75	appliance
	Fire suppression system permit	\$3	sprinkler head
		\$75	minimum fee per system
	Fire detection and alarm system permit	\$75	system
	Plumbing permit	\$15	fixture
		\$90	minimum fee per permit
Masonry permit	\$75	flue	
<b>Plan Processing Fee**</b>			
17.5	Standard <i>building</i>	\$300	permit
	Complex <i>building</i>	25% of permit fee	permit
	<i>Farm building</i>	\$150	permit

Building Bylaw No. XXX, 2021 Section	Fee Type	Fee	Unit
	Tenant improvement or <i>building</i> permit if <i>cost of construction</i> of proposed work is less than \$30,000	\$75	permit
<b>INSPECTION FEES</b>			
26.9	Re-inspection and special inspection	\$100	inspection
<b>ADMINISTRATIVE AND MISCELLANEOUS FEES</b>			
10.7	<i>Professional design</i> fee reduction if all aspects of the <i>building</i> or <i>structure</i> are certified in compliance with the <i>Building Code</i> and final Schedule Cs for all disciplines are submitted prior to <i>occupancy</i>	-5% of permit fee	maximum \$500.00 reduction per permit
17.11	Preparation and registration of covenants and other legal documents	\$100 + costs + 10%	document
17.11	Building Regulation Notice Against Title (Land Title and Survey Authority) Notice application/removal and administrative and registration fees	Greater of \$500 or cost + 10%	notice
25.1	Review of proposed <i>alternative solution</i> , in-house	\$100 + applicable taxes	hour; minimum 1 hour
25.1	Review of proposed <i>alternative solution</i> by third party	\$100 + costs + 10%	review
17.10	Miscellaneous services not otherwise listed	\$100 + applicable taxes	hour; minimum ¼ hour
17.13	<i>Provisional occupancy permit</i>	\$150	permit
17.12 (c)	<i>Transfer of a permit to another person</i>	\$100	permit
17.12 (a)	<i>Building permit extension</i>	\$100	permit
17.12 (b)	Plan revision after submission of <i>building</i> permit application	\$100 + applicable taxes	hour; minimum ¼ hour
<b>SECURITY DEPOSITS</b>			
17.7	Security deposit for site services as-built drawings	\$1,000	building permit
17.14	Security deposit for <i>foundation</i> permit	\$1,000	permit
17.15	Security deposit for work proposed on lands within 10 metres of <i>Village</i> works, detached or duplex	\$2,500	permit
17.15	Security deposit for work proposed on lands within 10 metres of <i>Village</i> works, multi-family residential	\$1,000	unit
17.15	Security deposit for work proposed on lands within 10 metres of <i>Village</i> works, other than residential	\$5,000	permit
8.4	Repair to damaged <i>Village</i> works	Costs + 10% + applicable taxes	

\*See definition of *cost of construction*, Building Bylaw No. XXX, 2021

\*\* Non-refundable fee due at time of application.



**Athena**  
Sustainable Materials  
**Institute**

**Life Cycle Assessment of Log Wall and Timber Frame  
Systems Produced in British Columbia**

**Prepared for: The Cariboo-Chilcotin Beetle Action Coalition**

**Prepared by: Athena Sustainable Materials Institute**

**April 2012**

**Athena Sustainable Materials Institute  
119 Ross Avenue, Suite 100  
Ottawa, Ontario K1Y 0N6  
Canada**

# Table of Contents

Abbreviations .....	4
Glossary.....	4
Acknowledgements.....	6
1. Introduction and Report Organization.....	7
1.1 Introduction .....	7
1.2 Report Organization.....	8
2. Life Cycle Assessment Methodology.....	9
3. Goal and Scope .....	12
3.1 Goals .....	12
3.1.2 Intended Audience.....	12
3.1.3 Comparative Assertions .....	12
3.2 Scope of Considered System.....	13
3.2.1 Definition of the Functional Unit .....	13
3.2.2 System Boundaries.....	13
3.2.3 Multiple-output Allocation .....	14
3.2.4 Cut-off Criteria .....	15
3.2.5 Data Quality .....	15
4. BC Log and Timber Products Manufacture Life Cycle Inventory .....	17
4.1 Handcrafted Log Wall LCI.....	17
4.2 Milled Profile Log Wall LCI .....	18
4.3 Heavy Timber Manufacture LCI .....	19
4.4 Delivery and Construction .....	20
4.6 End of Life .....	21
5. Biogenic Carbon Accounting .....	22
5.1 Background Rationale for Biogenic Carbon Accounting .....	22
5.2 Carbon Sequestration Product Baseline .....	23
5.3 Carbon Dynamics at End of Life .....	24
6. Life Cycle Impact Assessment .....	25
6.1 LCIA Methodology.....	25
6.2 LCIA Results for Handcrafted Log Wall .....	29

6.3 LCIA Results for Milled Profile Log Wall .....	31
6.4 LCIA Results for Timber Frame System .....	33
7. Sensitivity Analysis .....	35
7.1 Transportation to Construction Sites Outside BC .....	35
7.2 Kiln Drying of Milled Profile Wall and Timber Frame .....	36
7.3 Staining Frequency .....	37
8. Interpretation and Conclusions .....	39
8.1 Conclusions .....	39
8.2 Limitations .....	40
8.3 Recommendations .....	40
9. References .....	42
Appendix 1: Life Cycle Inventory Secondary Data Sources .....	43
Appendix 2: Data Collection Questionnaires .....	44

## Abbreviations

**PAH:** Polycyclic aromatic hydrocarbons

**PM (10/2.5):** Particulate matter less than 10/2.5 micrometers in diameter

**SO<sub>2</sub>:** Sulfur dioxide

**TRACI:** Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts

**UNEP:** United Nations Environment Program

**US EPA:** United States Environmental Protection Agency

**USLCI:** United States Life Cycle Inventory Database

**VOCs:** Volatile Organic Compounds

## Glossary

*Based on ISO 14040:2006- Terms and Definition Section [1].*

**Allocation:** Partitioning the input or output flows of a process or a product system between the product system under study and one or more other product systems.

**Cradle to gate:** A cradle-to-gate assessment considers impacts starting with extracting raw materials from the earth (the “cradle”) and ending at the plant exit “gate” where the product is to be shipped to the user. In-bound transportation of input fuels and materials to the plant is included. Out-bound transportation of the product to the user is not included. The use phase, maintenance and disposal phase of the product are also not included within the scope of this study. Disposal of on-site waste at the plant and outside and transportation within the plant (if applicable) are included.

**Cradle to grave:** A cradle-to-gate assessment considers impacts starting with extracting raw materials from the earth (the “cradle”) and ending with the end of life treatment (the “grave”). In-bound transportation of input fuels and materials to the plant is included as well as out-bound transportation of the product to the user. The use phase, maintenance and disposal phase of the product are also included within the scope of this study. Disposal of on-site waste at the plant and outside and transportation within the plant (if applicable) are similarly included.

**Functional Unit:** Quantified performance of a product system for use as a reference unit.

**Life cycle:** Consecutive and interlinked stages of a product system, from raw material acquisition or generation from natural resources to final disposal.



**Life Cycle Assessment (LCA):** Compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle.

**Life Cycle Inventory (LCI):** Phase of Life Cycle Assessment involving the compilation and quantification of inputs and outputs for a product throughout its life cycle.

**Life Cycle Impact assessment (LCIA):** Phase of life cycle assessment aimed at understanding and evaluating the magnitude and significance of the potential environmental impacts for a product system throughout the life cycle of the product.

**Life cycle interpretation:** Phase of life cycle assessment in which the findings of either the inventory analysis or the impact assessment, or both, are evaluated in relation to the defined goal and scope in order to reach conclusions and recommendations.

## **Acknowledgements**

This document was prepared by the Athena Sustainable Materials Institute with sponsorship from the Cariboo-Chilcotin Beetle Action Committee and guidance from the BC Log and Timber Building Industry Association. The Institute gratefully acknowledges both the CCBAC and the BC LTBIA for their support as well as the log home manufacturers who provided data to complete the study.

The contents of this report reflect the views of the authors, who are responsible for the facts and accuracy of the information presented and do not necessarily reflect the views of the sponsors.

# 1. Introduction and Report Organization

## 1.1 Introduction

In order to quantify the environmental qualities of log and timber frame construction, the Cariboo-Chilcotin Beetle Action Coalition (CCBAC) engaged the Athena Institute to complete a life cycle assessment (LCA) of log and timber frame construction. This study was conducted in accordance with international standards on LCA, ISO 14040, ISO 14044 and ISO 21930, and the results were integrated into Athena's EcoCalculator LCA tool. The CCBAC's decision to commission the study was driven by the desire to better understand the environmental footprint of log and timber frame products and to see that information published in the EcoCalculator.

The cradle-to-grave assessment includes resource extraction, log wall and timber frame manufacturing, construction, use, and end-of-life waste treatment; transportation within and between life cycle activity stages is also included. The life cycle of three product systems were assessed in this study:

1. Handcrafted Log Wall: 100 Square Feet Installed at Construction Site in BC
2. Milled Log Wall: 100 Square Feet Installed at Construction Site in BC
3. Timber Frame: 1000 Board Feet Installed at Construction Site in BC

The functional unit is defined based on a 60-year building service life. All upstream resource and commodity material inputs were modeled in SimaPro v7.3 software using secondary LCI data from recent literature as well as the US LCI database, the Institute's proprietary databases, and the ecoinvent database. All secondary data sources were updated for this project with USLCI energy and commodity material models where possible; updates included BC-specific and regional electricity grids developed by the Athena Institute for the USLCI Database. Similarly, secondary LCI data sources were used to model life cycle effects associated with the energy requirements of construction and end-of-life processes.

The carbon sequestered in the three product systems was also assessed in this study. The net carbon balance of the source forest, the product itself, and the fate of that carbon in the landfill were all considered in the carbon balance.

The life cycle impacts of the three functional units were assessed across a set of impact indicators as per ISO 21930 using the US EPA's Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI) impact characterization methodology. Cumulative energy demand (fossil, nuclear, and renewables) and weighted resource use were also calculated for the two product life cycles.

## 1.2 Report Organization

The remainder of this report is structured as follows:

**Chapter 2** provides an overview of the LCA framework according to ISO 14040/44:2006. Those less familiar with LCA may find this section useful as a primer for understanding the complete LCA process.

**Chapter 3** describes the goal and scope of the study including the study's intent, applications and target audiences. It also sets out the system boundary, functional unit, cut-off criteria, allocation methods, data quality indicators, key data sources and the life cycle impact indicators supported by the study.

**Chapter 4** provides an overview of the three product systems and summarizes their respective gate-to-gate manufacturing LCI flows (materials, energy and emission to air, water and land). Chapter 4 also presents the key aspects of the remaining downstream life cycle activity stages – building construction, the use phase (periodic re-staining) and the end-of-life disposal of the wall systems in a landfill.

**Chapter 5** presents the results of the carbon sequestration analysis and its relative significance compared to the rest of the life cycle.

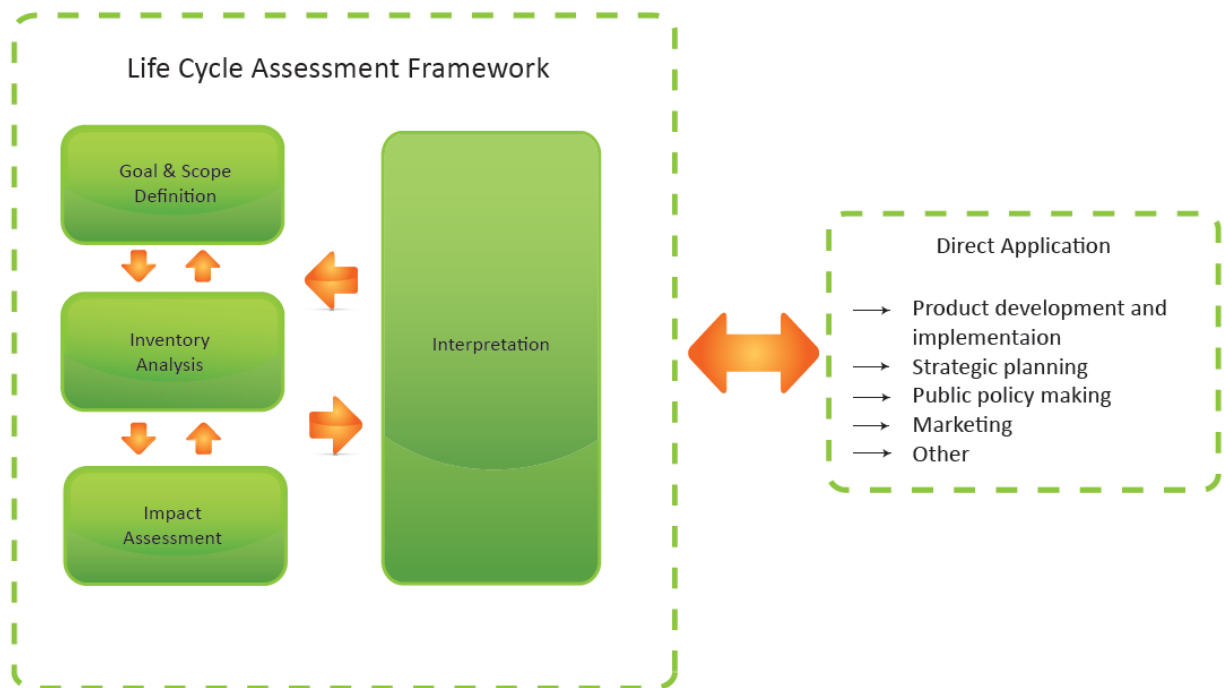
**Chapter 6** first describes the life cycle impact assessment methodology and the selected impact indicators reported throughout the study. It then goes on to report the cradle-to-manufacturing (called cradle-to-gate) LCIA results for the three component products of interest and then adds in each subsequent downstream activity stage (installation, use and end-of-life) to provide a complete 60-year cradle-to-grave profile for each of the products. The contribution of various raw material and energy inputs and processes within each activity stage is highlighted.

**Chapter 7** presents the sensitivity analysis for key assumptions made in this LCA. The sensitivity analysis includes the transportation of materials to construction sites outside British Columbia, the influence of kiln-drying on the milled wall and timber frame results, and the impact of doubling the staining frequency to once every three years.

**Chapter 8** brings together the LCI and LCIA results to identify significant issues in the context of the goal and scope of the study. Issues are identified via contribution and sensitivity analyses for each product system. Finally, the section presents the study's conclusions, limitations and makes some recommendations for possible next steps to extend the usefulness of the study.

## 2. Life Cycle Assessment Methodology

Life cycle assessment is an analytical tool used to comprehensively quantify and interpret the energy and material flows to and from the environment over the entire life cycle of a product, process, or service<sup>1</sup>. Environmental flows include emissions to air, water, and land, as well as the consumption of energy and material resources. By including the impacts throughout the product life cycle, LCA provides a comprehensive view of the environmental aspects of the product and a more accurate picture of the true environmental trade-offs in product selection. Two international standards, ISO 14040:2006 and ISO 14044:2006, describe an iterative four-stage or phased methodology framework for completing an LCA, as shown in Figure 1: (1) goal and scope definition, (2) life cycle inventory, (3) life cycle impact assessment, and (4) interpretation.



**Figure 1: Stages of an LCA as per ISO 14044:2006**

An LCA starts with an explicit statement of the goal and scope of the study; the functional unit; the system boundaries; the assumptions and limitations; the allocation methods used, and the impact categories chosen. The goal and scope includes a definition of the context of the study, which explains how and to whom the results are to be communicated. The ISO standards require that the goal and scope of an LCA be clearly defined and consistent with the intended application. The functional unit defines what is being studied. The purpose of the functional

<sup>1</sup> ISO 14040:2006. Environmental Management – Life Cycle Assessment – Principles and Framework.  
ISO 14044:2006. Environmental Management – Life Cycle Assessment – Requirements and guidelines.

unit is to quantify the service delivered by the product system and provide a reference to which the inputs and outputs can be related. Allocation is the method used to partition the environmental load of a process when several products or functions share the same process. In inventory analysis a flow model of the technical system is constructed using data on inputs and outputs. The flow model is often illustrated with a flow chart that includes the activities that are going to be assessed and gives a clear picture of the technical system boundary. The input and output data needed for the construction of the model are collected (such as materials and energy flows, emissions to air and water, and waste generation) for all activities within the system boundary. Then, the environmental loads of the defined system are calculated and related back to the functional unit, and the flow model is finished.

Inventory analysis is followed by impact assessment, where the life cycle inventory data are characterized in terms of their potential environmental impacts; for example, resulting in acidification, ozone depletion, and global warming. The impact assessment phase of LCA is aimed at evaluating the significance of potential environmental impacts based on the LCI flow results. Classical life cycle impact assessment (LCIA) consists of the following mandatory elements: selection of impact categories, category indicators, and characterization models; and continues with the classification stage, where the inventory parameters are sorted and assigned to specific impact categories.

The categorized LCI flows are then characterized using one of many possible LCIA methodologies into common equivalence units and then are summed to provide an overall impact category total. This equivalency conversion is based on characterization factors as prescribed by the selected LCIA methodology.

In many LCAs, characterization concludes the LCIA analysis; this is also the last compulsory stage according to ISO 14044:2006. However, in addition to the mandatory LCIA elements (selection, classification, and characterization), other optional LCIA elements (normalization, grouping, and weighting) may be conducted depending on the goal and scope of the LCA study. In normalization, the results of the impact categories from the study are usually compared with the total impact in the region of interest. Grouping consists of sorting and possibly ranking of the impact categories. During weighting, the different environmental impacts are weighted against each other to get a single number for the total environmental impact. As per ISO 14044:2006, “weighting, shall not be used in LCA studies intended to be used in comparative assertions intended to be disclosed to the public”. While this study does not make explicit comparative assertions, readers and users of this study may infer a comparison and thus weighting and other optional LCIA elements are excluded to be consistent with the goal and scope of the LCA study and the ISO 14044:2006 protocol.

The results from the inventory analysis and impact assessment are summarized during the interpretation phase. The outcome of the interpretation phase is a set of conclusions and recommendations for the study. According to ISO 14040:2006 the interpretation should include:

- Identification of significant issues based on the results of the LCI and LCIA phases of LCA
- Evaluation of the study considering completeness, sensitivity, and consistency checks
- Conclusions, limitations, and recommendations.

The working procedure of LCA is iterative as illustrated by the back-and-forth arrows in Figure 1. The iteration means that information gathered in a later stage can cause effects in a former stage. When this occurs, the former stage and the following stages have to be reworked taking into account the new information. At the end, the results and conclusions of the LCA will be completely and accurately reported to the intended audience. The data, methods, assumptions, limitations, and results will be transparent and presented in sufficient detail to allow the interested parties to comprehend the complexities and trade-offs inherent in the LCA. The report will also allow the results and interpretation to be used in a manner consistent with the goals of the study.

## 3. Goal and Scope

This chapter sets out the intent and protocol for undertaking the full cradle-to-grave LCA study of the two log wall types and timber frame system. The goal and scope provides a roadmap for completing the life cycle inventory (LCI) data collection, its compilation, as well as its interpretation via a set of robust impact indicators.

### 3.1 Goals

This project was initiated and funded by the CCBAC. A life cycle assessment was proposed to consider the entire cradle-to-grave impacts of the two log wall types and timber frame system based on a common application in BC over a 60-year building service life.

The following primary reasons for carrying out this LCA study were defined.

This LCA study will be conducted –

1. To better understand the overall environmental performance of two log wall types and timber frame systems and to integrate the log wall data in Athena's EcoCalculator for Assemblies building LCA tool.
2. To better understand the contribution of various processes occurring at log and timber manufacturing facilities and hotspots elsewhere in the life cycle that may be improved by manufacturing or sourcing decisions.
3. To provide the BC LTBI with a better understanding of the environmental footprint their members' products so the life cycle impacts of their products may be effectively communicated in relation to their thermal performance.

#### **3.1.2 Intended Audience**

The intended audience for the results of this LCA study is both internal (identification of hotspots and opportunities for improvement) and external (energy code developers, architectural, engineering, and specifying professionals).

#### **3.1.3 Comparative Assertions**

This LCA does not include or infer any comparative assertion across the three products or other building materials or systems.



## 3.2 Scope of Considered System

### 3.2.1 Definition of the Functional Unit

The functional unit serves as the starting point for defining the scope of the study that will seek to consider its environmental impacts. The *functional unit* is defined in ISO 14040:2006 as the quantified performance of a product system for use as a reference unit.

The three functional units subject to analysis in this LCA are defined as follows:

1. Handcrafted Log Wall: Cradle-to-grave life cycle of 100 square feet handcrafted log walls (18 inch diameter); manufactured and installed at construction site in BC and then maintained for a service period of 60-years.
2. Milled Log Wall: Cradle-to-grave life cycle of 100 square feet milled profile log walls (8 inch diameter); manufactured and installed at construction site in BC and then maintained for a service period of 60-years.
3. Timber Frame: 1000 board feet heavy timbers; manufactured and installed at construction site in BC and then maintained for a service period of 60-years.

### 3.2.2 System Boundaries

This cradle-to-grave life cycle assessment considers impacts starting with extracting raw materials from the earth (the “cradle”) and ending with the treatment of waste at the end of the service life. Transportation of materials and energy inputs within and between all activity stages is included within the receiving life stage. The use phase, maintenance and disposal of the product systems are also included within the scope of this study. Disposal of on-site waste from product manufacture, on-site construction and periodic maintenance of the products are included in the system boundary. Table 1 lists the inclusions and exclusions from the system boundaries considered in this study.

**Table 1: General overview of the System Boundaries for this LCA study**

INCLUDED	EXCLUDED
<ul style="list-style-type: none"><li>• Input raw materials, energy, and fuel</li><li>• Transportation throughout life cycle</li><li>• On-site installation material and energy use</li><li>• Service life requirements (staining)</li><li>• Removal at the end of service life</li><li>• Special treatment after service life</li><li>• Landfilling of waste materials</li></ul>	<ul style="list-style-type: none"><li>• Fixed capital equipment and facilities</li><li>• Hygiene related water use</li><li>• Transportation of employees</li><li>• Land use</li></ul>

### **3.2.3 Multiple-output Allocation**

The study was completed using an attributional methodology, where average manufacturing data is employed throughout the value chain. In the attributional approach, the elementary flows and potential environmental impacts are assigned to a specific product system as an account of the history of the product. This differs from the consequential method, which seeks to model a cause-and-effect chain by using marginal data in the value chain. Allocation, where necessary, was conducted following ISO14040/44:2006 methodologies.

Multi-functionality has been identified as a significant methodological issue in LCA. The general situation is that most processes that constitute part of a product system are multi-functional: (1) they produce more than one product (co-production), (2) treat two or more waste inputs (combined waste treatment), (3) treat one waste input and produce one valuable output (open- or close-loop recycling) or (4) serve three or more valuable functions from both input and output (Heijungs and Suh, 2002).

In such cases the materials and energy flows, as well as associated environmental releases, shall be allocated to the different products according to clearly stated procedures (ISO 14044, Section 4.3.4). As per ISO 14044, allocation means partitioning the input or output flows of a process or a product system between the product system under study and one or more other product systems. The guidance provided by (ISO) recognizes the variety of approaches which can be applied dealing with multifunctional processes. ISO suggests a generic step-wise framework to address allocation issues in LCA (ISO 14044, 2006).

The following three steps are required:

1. Wherever possible allocation should be avoided by (1) dividing the unit process to be allocated into two or more sub-processes and collecting the input and output data related to these sub-processes, or (2) expanding the product system to include additional functions related to the co-products, taking into account the requirements of ISO 14044, Section 2.2.1.
2. Where allocation cannot be avoided, the inputs and outputs of the system should be partitioned between its different products and functions in a way that reflects the underlying physical relations between them; that is, they should reflect that inputs and outputs are changed by quantitative changes in the products or functions delivered by the system.
3. Where physical relationships alone cannot be established or used as the basis for allocation, the inputs should be allocated between the products and functions in a way that reflects other relationships between them. For example, input and output data might be allocated between co-products in relation to the economic value of the products.

ISO requirements and recommendations were followed in this LCA study for allocation procedures in general (4.3.4.2) and allocation procedures for reuse and recycling (4.3.4.3). The study also followed the recommendations of the UNEP-SETAC life cycle initiative, life cycle

inventory program, Task Force 3: Methodological consistency, Inventory methods in LCA: towards consistency and improvement.

### 3.2.4 Cut-off Criteria

The cut-off criteria for input flows to be considered within each system boundary are given in Table 2 below:

**Table 2: Cut-off Criteria**

CUT-OFF CRITERIA	THRESHOLD
Mass	If a flow is less than 1% of the total mass input of the product system being modeled it may be excluded, providing its environmental relevance is minor
Energy	If a flow is less than 1% of the total product system’s energy inputs it may be excluded, providing its environmental relevance is minor
Environmental relevance	If an input flow meets the above two criteria, but is determined (via secondary data analysis) to contribute 2% or more to any product life cycle impact category (see below), it is included within the system boundary

The sum of the neglected input flows must not exceed 3% of the total mass, energy or environmental relevance. Similar cut-off criteria were also used to identify which outputs should be traced to the environment; for example, by including waste treatment processes.

The primary LCI data for this study was collected from 6 BC facilities, representing the various product types, for the reference year 2011. Plant personnel provided allocated data for each of the gate-to-gate product systems considered in the scope of the system.

For other ancillary or process materials, such as the production of chemical inputs, fuels and power, secondary data from commercially available LCI databases were deemed acceptable during the goal and scope development for the project (e.g., US LCI Database, North American adjusted Ecoinvent database, etc.).

### 3.2.5 Data Quality

This section documents the achieved data quality requirements relative to ISO 14044 requirements. Data quality is judged by its precision (measured, calculated or estimated), completeness (e.g., unreported emissions), consistency (degree of uniformity of the methodology applied on a study serving as a data source) and representativeness (geographical, temporal, and technological).

### **Precision and Completeness**

Primary data on raw materials, energy, and emissions were provided by log and timber frame manufacturers based on 2011 annual purchases, production output, and reported process emissions. Some of the reported transportation distance data are estimates due to the complexity of each facility's supply chains. All upstream and downstream secondary data is consistently applied with sometimes unknown, but similar precision. See appendix A for secondary data sources.

All components of the final product were modeled and all raw material inputs, energy flows and emissions were included. Some small inconsistencies in the mass balance were noted due to imprecise calculations of material weight and/or inconsistency in tracking waste sent externally. All inventory flows were modeled and at no time were data excluded due to application of the study's cut-off criteria.

### **Consistency and Reproducibility**

To ensure consistency, only primary data as provided by the survey respondents were used to model gate-to-gate processes. All other secondary data (upstream and downstream) were consistently applied across the three product systems of interest. At various points in the study (data collection and modeling) a quality and consistency check was performed. The objective of these checks was to ensure that the data collection, the development of the LCI model, and the final results remained consistent with the scope of the study, and that the study delivered the required information. The quality check process included a review of the precision and completeness of the collected primary data (e.g. mass and energy balance was performed), applicability of LCI datasets used, general model structure, and results plausibility (e.g. comparison to other similar reports and the Athena Impact Estimator for Buildings database). The data was found to be within acceptable ranges compared to internally and publically available information.

Reproducibility by third parties is possible using the aggregated inventory data and background LCIs documented in Appendix A. Due to the diverse nature of background LCI datasets used in completing the project a statistical analysis of uncertainty was not possible.

### **Temporal Coverage**

Primary data collected from the manufacturing facilities for their operational activities related to the three product processes of interest are representative for the year 2011 (reference year). Additional data necessary to model base material production and energy use, etc. was adapted from various secondary databases (US LCI database, ecoinvent, etc.) and their use is described in Appendix A.

### **Geographical Coverage**

The geographical coverage for this study is based on North American (NA) system boundaries for all processes and products. Whenever North American background data was not readily available, European data (adjusted for N. American system boundaries) was used as a proxy (see Appendix A).

## 4. BC Log and Timber Products Manufacture Life Cycle Inventory

Log and timber manufacturing data was collected from manufacturers of the two log wall types and heavy timber frame materials in BC. Appendix 2 presents the LCI data collection questionnaires developed for the two various product types represented in this study.

All upstream resource and commodity material inputs were modeled using secondary LCI data from literature, including the US LCI database, the Institute’s proprietary database, and ecoinvent. All secondary data sources were updated for this project with USLCI energy and commodity material models where possible; updates included BC-specific, regional, and North American electricity grids developed by Athena for the USLCI. The source data used to model each technosphere flow in SimaPro is listed in Appendix 1.

### 4.1 Handcrafted Log Wall LCI

Handcrafted log wall manufacture begins with the delivery of raw logs that are air dried until they are dimensionally stable. The logs are then hand-hewn with a draw knife and the joinery is cut into the logs with chainsaws. The logs are then hand-fitted at the manufacturer’s site and a hoist is used to erect the structure which when complete it is broken down and loaded onto a truck to be delivered to the construction site. The life cycle inventory for handcrafted log walls is presented in Table 3.

**Table 3: Gate-to-gate Life Cycle Inventory for Handcrafted Log Wall Manufacture**

	<b>PRODUCT</b>	<b>UNIT</b>	<b>AMOUNT</b>
<b>OUTPUTS</b>	100 Sq. Ft. Handcrafted Wall	odkg	1389.26
	<b>WASTE</b>		
	Wood Waste	odkg	161.54
<b>WOOD MATERIAL</b>			
	Cedar Roundwood	m3	3.05
	Pine Roundwood	m3	0.44
	Spruce Roundwood	m3	0.11
<b>ENERGY</b>			
<b>INPUTS</b>	Electricity	kWh	86.21
	Diesel	L	13.27
	Gasoline	L	9.00
	Delivery of Materials by Truck	tkm	62.21
<b>OPERATING CONSUMABLES</b>			
	Hydraulic Fluid	L	0.08
	Lubricants	L	0.65
	Antifreeze	L	0.05
	Shrinkwrap	kg	0.08

For the survey respondents in this study, Western Red Cedar was the primary species that was used, with lesser amounts of pine and spruce also used. The hand-hewing and joining results in roughly 10% wood waste that is primarily used as biomass energy. Since this waste is removed without revenue or cost, it was assumed to leave the system boundary without burden or impacts attributed to it.

#### 4.2 Milled Profile Log Wall LCI

Milled profile log walls differ from handcrafted walls in that the raw log is first milled into a standardized cant, which is a rough sawn timber, before the piece is profiled to create the desired finish and fit. Milled profile log walls are available in a variety of shapes, with one or both sides flat or rounded. The functional unit in this study assumes an 8 inch diameter round finish. In this study, a majority of the production utilized pre-milled cants while the remainder milled the cants themselves. This is reflected in the life cycle inventory that includes log and cant inputs presented in Table 4.

**Table 4: Gate-to-gate Life Cycle Inventory for Milled Profile Log Wall Manufacture**

	PRODUCT	UNIT	AMOUNT
<b>OUTPUTS</b>	100 Sq. Ft. Milled Profile Wall	odkg	617.45
	<b>WASTE</b>		
	Wood Waste	odkg	293.57
<b>WOOD MATERIALS</b>			
	Douglas Fir Roundwood	m3	0.80
	Pine/Spruce Roundwood	m3	0.07
	Douglas Fir Cants	mbfm	0.91
<b>ENERGY</b>			
<b>INPUTS</b>	Electricity	kWh	258.96
	Diesel	L	31.50
	Gasoline	L	2.97
	Propane	L	0.81
	Delivery of Materials by Truck	tkm	100.62
	<b>OPERATING CONSUMABLES</b>		
	Hydraulic Fluid	L	0.38
	Lubricants	L	1.01
	Antifreeze	L	0.16
	Shrinkwrap	kg	1.72

After milling and shaping, the logs are then stacked similarly to handcrafted log walls to erect the structure which when complete is broken down and loaded onto a truck to be delivered to the construction site. Milled profile log walls may be either air-dried or kiln-dried. In this study, the material was assumed to be air-dried, which includes the use of standing dead timber. The sensitivity of the results to kiln-drying is presented in Chapter 7.

### 4.3 Heavy Timber Manufacture LCI

Similar to the milled wall manufacturing described in Section 4.2, a majority of the timber production utilized pre-milled rough timbers while the remainder milled the timbers from logs themselves. This is reflected in the life cycle inventory that includes log and rough lumber inputs. Also similar to the milled profile walls, the timbers may be either air-dried or kiln-dried. In this study, the material was assumed to be air-dried. The sensitivity of the results to kiln-drying is presented in Chapter 7. The life cycle inventory for the timber frame milling is presented in Table 5.

**Table 5: Gate-to-gate Life Cycle Inventory for Heavy Timber Manufacture**

	<b>PRODUCT</b>	<b>UNIT</b>	<b>AMOUNT</b>
<b>OUTPUTS</b>	1000 Board Feet Timbers	odkg	664.76
	<b>WASTE</b>		
	Wood Waste	odkg	287.34
	<b>WOOD MATERIALS</b>		
	Douglas Fir Roundwood	m3	0.79
	Pine/Spruce Roundwood	m3	0.07
	Rough Douglas Fir Lumber	mbfm	0.89
	<b>ENERGY</b>		
<b>INPUTS</b>	Electricity	kWh	237.53
	Diesel	L	21.79
	Gasoline	L	2.67
	Delivery of Materials by Truck	tkm	98.48
	<b>OPERATING CONSUMABLES</b>		
	Hydraulic Fluid	L	0.37
	Lubricants	L	0.99
	Antifreeze	L	0.16
	Shrinkwrap	kg	1.68

#### 4.4 Delivery and Construction

The three products are trucked to construction sites where they are installed through the use of a crane. The baseline scenario is that the building is constructed in BC, and since the log wall manufacturers are located throughout the province, the log walls are assumed to be transported 200 km to the construction site.

At the construction site, a diesel crane is used to stack the log walls and raise the timber frame. The crane idles through much of the construction process, with acceleration of the engine occurring when the load is lifted. It was estimated that a typical crane consumes 75 liters of diesel fuel to lift one 50 m<sup>3</sup> truckload of logs.

During the log wall construction process, steel bolts are inserted into pre-drilled holes spaced every 4 feet to provide greater rigidity of the finished wall. Two layers of low density polyethylene (LDPE) gasket are inserted into the channel at the bottom of each log to provide a weather proof seal. The delivery transportation, diesel used by the crane, and LDPE gasket use for 100 square feet of log wall are presented in Table 6. The variation in steel and insulation between the handcrafted and milled profile walls is a result of the greater diameter of the handcrafted logs which means fewer layers of logs are used (and gasket and bolts between them). Wool insulation is also sometimes placed between the gaskets but is excluded in this study because it is assumed not required and is assumed to be of negligible impact.

**Table 6: Delivery and Construction Inputs**

	<b>ENERGY INPUTS</b>	<b>UNIT</b>	<b>AMOUNT</b>
<b>HANDCRAFTED LOG WALL</b>	Diesel Truck Delivery	tkm	277.85
	Diesel Crane	l	4.84
	<b>MATERIAL INPUTS</b>		
	Steel Bolts	kg	7.36
	PVC Gasket	kg	1.16
<b>MILLED LOG WALL</b>	<b>ENERGY INPUTS</b>		
	Diesel Truck Delivery	tkm	123.49
	Diesel Crane	l	2.22
	<b>MATERIAL INPUTS</b>		
	Steel Bolts	kg	9.08
PVC Gasket	kg	2.62	
<b>TIMBER FRAME</b>	<b>ENERGY INPUTS</b>		
	Diesel Truck Delivery	tkm	132.95
	Diesel Crane	l	2.39



#### **4.5 Periodic Staining**

The exterior side of the log walls are stained at the point of construction, and periodically throughout the service life. A variety of stains are available to the log home owner. In this study, we assumed 1.5 gallons use of a water-based acrylic stain (which is the amount required for the recommended three coats) applied every 6 years throughout the 60 year service life. While this assumption is a conservative one with many homeowners likely not applying 3 coats during each stain, the sensitivity of additional staining is addressed in Chapter 7.

The interior side may be stained, treated with oil, and in some instances varnished or painted. The interior finishing was excluded in this analysis because no interior finishing is required to provide the log wall function. Additionally, when the interior is finished, the substance that is used varies and is insignificant compared to the exterior portion that is finished 10 times during the service life.

Similar to the interior log wall surface, the timber frame may or may not be finished with stain, oil, or polyurethane. The variety of potential finishes and the fact that no finishing is required for the performance of the product led to the exclusion of finishing for the timber frame.

#### **4.6 End of Life**

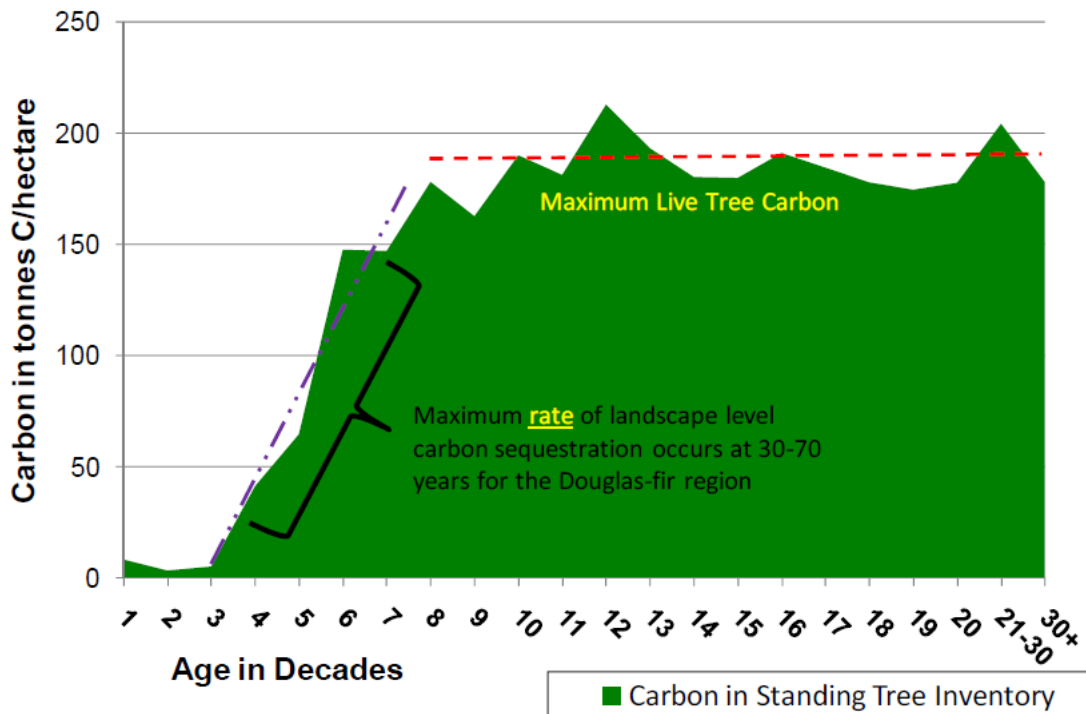
The end of life demolition and municipal waste treatment is included in the analysis for all three products and is based on Athena's internal models for these processes (which are typically of negligible impact). The influence of biogenic carbon emissions from the landfill is discussed in greater detail in Chapter 5 in relation to the over-all biogenic carbon balance of the product.

## 5. Biogenic Carbon Accounting

### 5.1 Background Rationale for Biogenic Carbon Accounting

The primary reason for including product carbon storage in LCA accounting is that sustainably managed forests are net carbon neutral over the long term - meaning that the carbon sequestered in a forest may rise and fall with growth and disturbance (burning for instance) but is neither increasing nor decreasing in carbon content in the long term. This stems from the fact that unlogged forests eventually reach a state of maturity where they no longer remove any carbon from the atmosphere - and means that any storage of carbon in products is additional to the storage in the forest.

Researchers at CORRIM<sup>2</sup>, the Consortium for Research on Renewable Industrial Materials, presented the graphic shown in Figure 2 that shows carbon storage by forest age and illustrates that sequestration levels off after year 80.

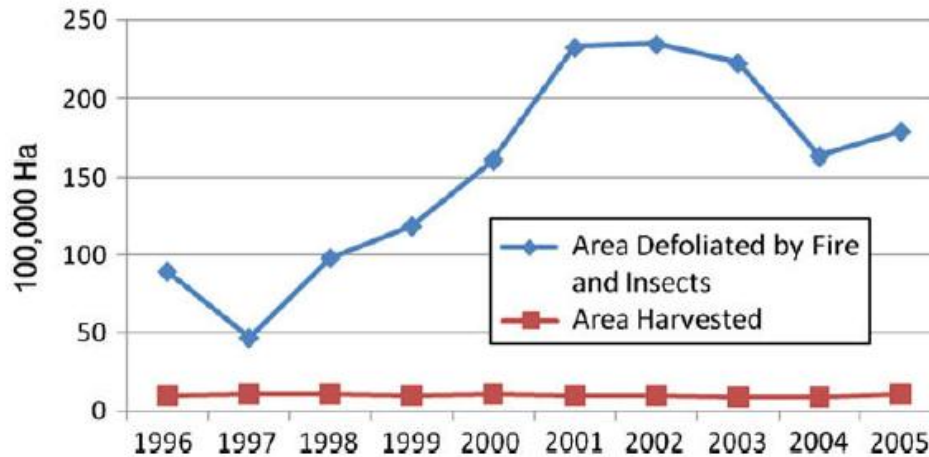


**Figure 2: Carbon Balance by Age Class of Forest in Western Washington**

It follows that logging a forest late in its growth phase prevents the forest from reaching the mature steady-state, and instead causes the forest to re-enter the highest growth phase that occurs in year 30-70 during the life cycle of the wood product.

<sup>2</sup> [http://www.corrim.org/pubs/reports/2010/biomass\\_vs\\_fossil/BiomassVSFossilEmissionsNov2010.pdf](http://www.corrim.org/pubs/reports/2010/biomass_vs_fossil/BiomassVSFossilEmissionsNov2010.pdf)

Forests only reach decline if they are not subjected to natural disturbance. In Canada, while the area of forests logged has remained relatively constant (around 1 million hectares annually), the area subjected to natural disturbance has varied from 47-243 million hectares (Shown in Figure 3). This means that in Canada, wood left unlogged is much more likely to be emitted by fire or insect than to be logged at a later date. This gives further credence to the notion that sequestering carbon in a product shelters the carbon from natural disturbance and replaces a high carbon risk mature forest with a younger forest that sequesters additional carbon as it regrows.



**Figure 3: Source of Forest Disturbance in Canada from 1996-2005**

When incorporating carbon sequestration in wood products LCA accounting, we must remind ourselves that the flow of carbon out of the atmosphere and into the forest only occurs while the forest is growing and not after the forest reaches maturity. We must also note that a durable wood product is typically still in service after 70-80 years, at which point the forest from which it came has regenerated and itself has reached maturity. The alternative baseline condition is a forest that in 80 years has either reached maturity and is no longer sequestering carbon or has been lost to disturbance.

## 5.2 Carbon Sequestration Product Baseline

The three functional units in this study are each primarily comprised of wood. The carbon sequestered in that wood is found by first converting from dry mass to carbon content by multiplying by 0.5, the carbon content in a kg of dry wood. Next, the carbon dioxide equivalent (which is the basis for greenhouse gas accounting) is found by multiplying by 44/12 which is the ratio of the molecular weight of carbon dioxide relative to carbon. The carbon dioxide equivalents sequestered in the three functional units are as follows:

1. Handcrafted Log Wall: 1389 odkg wood = 2547 kg CO<sub>2</sub>eq.
2. Milled Log Wall: 617 odkg wood = 1132 kg CO<sub>2</sub>eq.
3. Timber Frame: 665 odkg wood = 1219 kg CO<sub>2</sub>eq.

### 5.3 Carbon Dynamics at End of Life

The following end of life carbon dynamics description was adapted from an Athena Institute authored journal article *Prospects for Carbon Neutral Housing: The Influence of Greater Wood Use on the Carbon Footprint of a Single-Family Residence*; the reference to which is found in the references section.

The carbon that is sequestered in the wood products is subject to some decay once the wood product reaches the end of its service life and the material is taken to a landfill. Wood’s lignin content and imperfect conditions for anaerobic microbacteria that exist in landfills cause the majority of carbon in wood to remain intact while 24% is converted equally to carbon dioxide and methane. A portion of the methane that is produced, about 10%, is oxidized within the landfill before it reaches the surface. Thus, the composition of landfill gas (LFG) is 55% CO<sub>2</sub>, 45% CH<sub>4</sub> (on a molar basis) when it reaches the surface. Landfill gas capture systems operate at varying efficiencies. The USEPA estimates that the average landfill gas capture technology in landfills where solid wood products are disposed results in the capture of about 90% of emitted landfill gas. Of the 90% that is captured, only 70% is combusted in an industrial turbine to produce electricity. The remaining 30% is flared to eliminate methane but without energy recovery. The result of these carbon flows is three distinct sources of greenhouse gasses:

- Direct Emissions: Non-captured landfill gas that includes methane and carbon dioxide
- Emissions from Flaring: Carbon dioxide emissions released from flaring landfill gas
- Emissions from Energy Recovery: Carbon dioxide emissions released from burning landfill gas with energy recovery

The LFG that is utilized as fuel has a heating value of 15.8 MJ/kg and reduces demand for equivalent amounts of natural gas that would have otherwise been consumed as a fuel. This energy surplus causes a negative emission of the equivalent combustion of natural gas heat. The overall biogenic carbon emissions (and prevented emissions) for the three functional units are given in Table 7.

**Table 7: Carbon Sequestration Balance for Log and Timber Products**

	Biogenic Flows per ODKG (kg CO <sub>2</sub> e)	100 Sq. Ft. Handcrafted Log Wall (kg CO <sub>2</sub> e)	100 Sq. Ft. Milled Profile Log Wall (kg CO <sub>2</sub> e)	1000 Board Feet Timbers (kg CO <sub>2</sub> e)
Baseline Sequestration	-1.83	-2546.98	-1131.99	-1218.73
Direct Emissions	0.20	283.69	126.08	135.74
Emissions from flaring	0.12	165.04	73.35	78.97
Emissions from energy recovery	0.28	385.10	171.16	184.27
Prevented nat. gas emissions	-0.18	-243.79	-108.35	-116.65
Net Carbon Sequestration	-1.41	-1956.93	-869.75	-936.39

## 6. Life Cycle Impact Assessment

### 6.1 LCIA Methodology

The impact categories and assessment methods are the mid-point indicators from the U.S. EPA Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI). The TRACI methodologies were developed specifically for the US using input parameters consistent with US locations and consistent with ISO 21930, *Sustainability in building construction – Environmental declaration of building products*. They include primary energy (fossil fuel depletion), global warming, ozone depletion, photochemical oxidants (smog), eutrophication, and acidification potential.

It should be noted that while LCI enjoys a fairly consistent methodology, the life cycle impact assessment (LCIA) phase is very much a “work in progress” and there is no overall agreement on which LCIA categories should be included in a LCA or a single accepted methodology for calculating all of the impact categories to be included. Typically, LCIA is completed in isolation of the LCI, that is, the LCI requests a complete mass and energy balance for each unit process or product system under consideration and once completed the LCI is sifted through various LCIA indicator categories to determine possible impacts. For this study, we have relied on ISO 21930<sup>3</sup> to identify the various impact categories to be included in the LCIA and TRACI as the LCIA methodology. ISO 21930 provides an internationally accepted scope for decisions as to which LCIA categories should be supported for building sustainability metric analysis, while the TRACI LCIA methodology provides a North American context for the actual measures to be supported. ISO21930 stipulates a number of mid-point LCIA characterization measures to be supported and while not opposing end-point measures, dissuades their use until they are more internationally accepted. The measures advocated by ISO 21930 include:

1. Use of Resources and Energy
  - a. Depletion of non-renewable primary energy
  - b. Use of renewable primary energy
2. Climate change
3. Destruction of the ozone layer
4. Formation of photochemical oxidants
5. Acidification of land and water sources
6. Eutrophication

---

<sup>3</sup> ISO 21930:2007 – Building and Construction Assets – Sustainability in building constructions – Environmental declaration of building products.

Optional end-point LCIA measures listed in ISO 21930 include human toxicity and ecotoxicity; however, their uncertainty increases with movement from mid-point to end-point measures. Therefore we do not recommend using or reporting end-point measures. It is important to note that the impacts described by an LCA are estimates of relative and potential impacts, rather than direct measurements of real impacts, with limitations as described in the ISO international standards series 14040:2006. Table 20 sets out the impact categories supported by TRACI (2.0) and their inherent impact potential.

**Table 8: Impact categories in Tool for the Reduction and Assessment of Chemical and other Environmental Impacts (TRACI)**

IMPACT CATEGORY	NATURAL ENVIRONMENT	HUMAN HEALTH	RESOURCES
Global warming	◆		
Acidification	◆	◆	
Ozone depletion	◆	◆	
Eutrophication	◆	◆	
Photochemical Smog	◆	◆	
Ecotoxicity	◆		
Human health: criteria air		◆	
Human health: cancer		◆	
Human health: non-cancer		◆	
Fossil fuel			◆

While TRACI supports fossil fuel depletion (on a global scale), it does not readily report primary energy use. For purposes of this study the total primary energy use was tabulated and summarized as an impact indicator directly from the LCI results. Further, the study adopts the “Cumulative Energy Demand” method to organize and report primary energy resource use<sup>4</sup>. Total primary energy is the sum of all energy sources drawn directly from the earth, such as natural gas, oil, coal, biomass or hydropower energy. The total primary energy can be further broken down into categories. For this reason, the study provides a measure of total primary energy derived from the direct LCI flows broken down into renewable and non-renewable energy sources. Higher heating value (HHV) of primary energy carriers is used to calculate the primary energy values reported in the study.

With respect to the other LCIA measures, the following TRACI impact categories (IC) and characterization factors (CF)<sup>5</sup> were calculated and reported (also see Table 21).

<sup>4</sup> R. Frischknecht and N. Jungbluth (Editors), *Implementation of Life Cycle Impact Assessment Methods*, DataV1.1, Ecoinvent Report No. 3, 2004.

<sup>5</sup> Characterization factor is a factor derived from a characterization model which is applied to convert an assigned life cycle inventory analysis result to the common unit of the category indicator. The common unit allows calculation of the category indicator result [ISO 14040:2006].

- a. **Global warming (IC)** - TRACI uses global warming potentials (CF), a midpoint metric proposed by the International Panel on Climate Change (IPCC), for the calculation of the potency of greenhouse gases relative to CO<sub>2</sub>. The 100-year time horizons recommended by the IPCC and used by the United States for policy making and reporting are adopted within TRACI. Global warming potential (GWP) – the methodology and science behind the GWP calculation can be considered one of the most accepted LCIA categories. GWP<sub>100</sub> will be expressed on equivalency basis relative to CO<sub>2</sub> – i.e., equivalent CO<sub>2</sub> mass basis.
- b. **Acidification (IC)** - As per TRACI, acidification comprises processes that increase the acidity (hydrogen ion concentration, [H<sup>+</sup>]) of water and soil systems. Acidification is a more regional rather than global impact effecting fresh water and forests as well as human health when high concentrations of SO<sub>2</sub> are attained. The Acidification potential (CF) of an air emission is calculated on the basis of the number of H<sup>+</sup> ions which can be produced and therefore is expressed as potential H<sup>+</sup> equivalents on a mass basis.
- c. **Ozone depletion (IC)** - Stratospheric ozone depletion is the reduction of the protective ozone within the stratosphere caused by emissions of ozone-depleting substances. International consensus exists on the use of Ozone Depletion Potentials (CF), a metric proposed by the World Meteorological Organization for calculating the relative importance of CFCs, hydrochlorofluorocarbons (HFCs), and halons expected to contribute significantly to the breakdown of the ozone layer. TRACI is using the ozone depletion potentials published in the Handbook for the International Treaties for the Protection of the Ozone Layer (UNEP-SETAC 2000), where chemicals are characterized relative to CFC-11.
- d. **Eutrophication (IC)** - In TRACI, eutrophication is defined as the fertilization of surface waters by nutrients that were previously scarce. This measure encompasses the release of mineral salts and their nutrient enrichment effects on waters – typically made up of phosphorous and nitrogen compounds and organic matter flowing into waterways. The result is expressed on an equivalent mass of nitrogen (N) basis. The characterization factors estimate the eutrophication potential of a release of chemicals containing N or P to air or water, per kilogram of chemical released, relative to 1 kg N discharged directly to surface freshwater.
- e. **Photochemical smog (IC)** - *Photochemical ozone formation potential (CF)* – Under certain climatic conditions, air emissions from industry and transportation can be trapped at ground level where, in the presence of sunlight, they produce photochemical smog, a symptom of photochemical ozone creation potential (POCP). While ozone is not emitted directly, it is a product of interactions of volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>). The “smog” indicator is expressed on a mass of equivalent ozone (O<sub>3</sub>) basis.
- f. **Total primary energy (IC)** – Total primary energy is the sum of all energy sources which are drawn directly from the earth, such as natural gas, oil, coal, biomass or hydropower energy. The total primary energy contains further categories namely non-renewable and renewable energy, and fuel and feedstock energy. *Non-renewable energy* includes all fossil and mineral primary energy sources, such as natural gas, oil, coal and nuclear energy. *Renewable energy*

includes all other primary energy sources, such as hydropower and biomass. *Feedstock energy* is that part of the primary energy entering the system which is not consumed and/or is available as fuel energy and for use outside the system boundary. Total Primary Energy is expressed in MJ.

- g. **Respiratory effects (IC)** – The midpoint level selected by TRACI will be used based on exposure to elevated particulate matter (PM) less than 10 micrometers in diameter. Particulate matter is the term for particles found in the air, including dust, dirt, soot, smoke, and liquid droplets. Particles can be suspended in the air for long periods of time. Some particles are large or dark enough to be seen as soot or smoke. Others are so small that individually they can only be detected with an electron microscope. Many manmade and natural sources emit PM directly or emit other pollutants that react in the atmosphere to form PM. These solid and liquid particles come in a wide range of sizes. Particles less than 10 micrometers in diameter (PM10) pose a health concern because they can be inhaled into and accumulate in the respiratory system. Particles less than 2.5 micrometers in diameter (PM2.5) are referred to as "fine" particles and are believed to pose the greatest health risks. Because of their small size (approximately 1/30th the average width of a human hair), fine particles can lodge deeply into the lungs.
- h. **Weighted resource use (IC)** - Raw resource use can be measured in common units such as tonnes, but a unit of one resource like iron ore is not at all comparable to a unit of another resource like timber or coal when it comes to environmental implications of extracting resources. Since the varied effects of resource extraction, (e.g., effects on bio-diversity, ground water quality and wildlife habitat, etc.) are a primary concern, it is important to ensure they are taken into account. While these ecological carrying capacity effects are as important, they are much harder to incorporate for a number of reasons, especially their highly site-specific nature.

The approach adopted by the Athena Institute was to survey a number of resource extraction and environmental specialists across Canada to develop subjective scores of the relative effects of different resource extraction activities. The scores reflect the expert panel ranking of the effects of extraction activities relative to each other for each of several impact dimensions. The scores were combined into a set of resource-specific index numbers, which are as weights to the amounts of raw resources used to manufacture each building product. The Weighted Resource Use values reported by the Impact Estimator are the sum of the weighted resource requirements for all products used in each of the designs. They can be thought of as "ecologically weighted pounds or kilograms", where the weights reflect expert opinion about the relative ecological carrying capacity effects of extracting resources.



**Table 9: Selected Impact Indicators**

IMPACT CATEGORY	UNIT	SOURCE METHOD	LEVEL OF SITE SPECIFICITY
Global warming	kg CO2 eq	TRACI	Global
Smog	kg O3 eq	TRACI	North America
Acidification	mol H+ eq	TRACI	North America
Resp. effects	kg PM10 eq	TRACI	North America
Ozone depletion	kg CFC-11 eq	TRACI	North America
Eutrophication	kg N eq	TRACI	North America
Weighted Resource	kg	Athena	North America
Total energy	MJ eq	CED – Adapted	Global
<i>Fossil energy*</i>	MJ eq	CED – Adapted	Global
<i>Nuclear energy*</i>	MJ eq	CED – Adapted	Global
<i>Renewables**</i>	MJ eq	CED – Adapted	Global

\* Fossil energy, Nuclear energy, and Renewables are subsets of Total energy

\*\* Renewables includes hydro, solar, biomass, and geothermal energy

## 6.2 LCIA Results for Handcrafted Log Wall

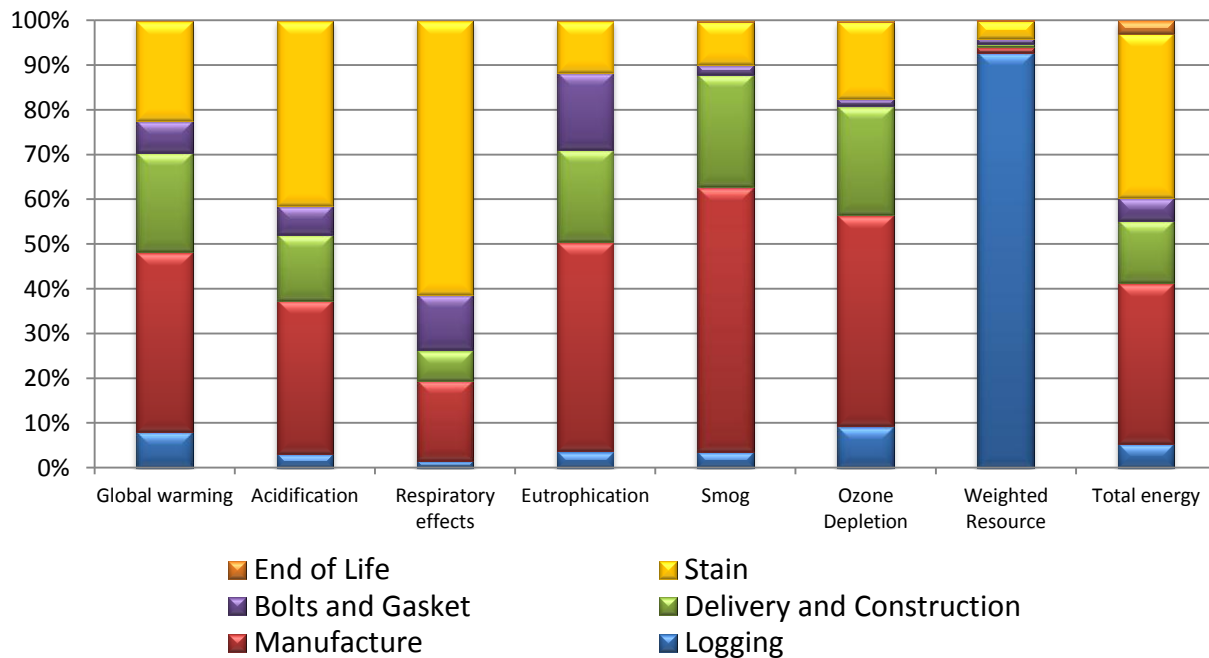
The life cycle impact assessment results of handcrafted log walls are presented in Table 10 on an absolute basis, in Table 11 on a percentage contribution basis, and graphically in Figure 4.

**Table 10: LCIA Results for 100 Square Feet Handcrafted Log Wall Manufactured and Constructed in British Columbia – Absolute Basis**

	Units	Total	Logging	Manufacture	Delivery and Construction	Bolts and Gasket	Stain	End of Life
Global warming	kg CO2 eq.	183.35	14.95	73.53	40.78	13.16	40.67	0.26
Acidification	H+ moles eq.	72.01	2.32	24.57	10.67	4.64	29.75	0.07
Respiratory effects	kg PM2.5 eq.	0.21	0.00	0.04	0.01	0.03	0.13	0.00
Eutrophication	kg N eq.	0.05	0.00	0.02	0.01	0.01	0.01	0.00
Smog	kg NOx eq.	0.79	0.03	0.47	0.20	0.02	0.08	0.00
Ozone Depletion	kg CFC 11 eq	6.50E-09	6.09E-10	3.06E-09	1.59E-09	1.07E-10	1.12E-09	1.09E-11
Weighted Resource	kg	2,259.99	2,097.00	28.52	15.58	28.64	90.14	0.09
Total energy	MJ eq	4,138.93	224.70	1,484.78	580.00	210.82	1,518.70	119.94
<i>Fossil energy</i>	MJ eq	3,739.64	222.00	1,160.81	574.26	178.67	1,483.96	119.94
<i>Nuclear energy</i>	MJ eq	54.14	2.20	9.66	4.89	6.20	31.19	0.01
<i>Renewable energy</i>	MJ eq	345.15	0.50	314.30	0.84	25.95	3.55	0.00

**Table 11: LCIA Results for 100 Square Feet Handcrafted Log Wall Manufactured and Constructed in British Columbia – Percentage Basis**

	Logging	Manufacture	Delivery and Construction	Bolts and Gasket	Stain	End of Life
Global warming	8.16%	40.10%	22.24%	7.18%	22.18%	0.14%
Acidification	3.22%	34.12%	14.81%	6.44%	41.31%	0.10%
Respiratory effects	1.65%	17.80%	6.89%	12.43%	61.18%	0.04%
Eutrophication	3.75%	46.75%	20.67%	17.27%	11.41%	0.15%
Smog	3.64%	59.09%	25.17%	2.32%	9.57%	0.21%
Ozone Depletion	9.37%	47.13%	24.43%	1.65%	17.25%	0.17%
Weighted Resource	92.79%	1.26%	0.69%	1.27%	3.99%	0.00%
<b>Total energy</b>	<b>5.43%</b>	<b>35.87%</b>	<b>14.01%</b>	<b>5.09%</b>	<b>36.69%</b>	<b>2.90%</b>
<i>Fossil energy</i>	5.94%	31.04%	15.36%	4.78%	39.68%	3.21%
<i>Nuclear energy</i>	4.07%	17.84%	9.04%	11.45%	57.60%	0.01%
<i>Renewable energy</i>	0.14%	91.06%	0.24%	7.52%	1.03%	0.00%



**Figure 4: LCIA Results for 100 Square Feet Handcrafted Log Wall Manufactured and Constructed in British Columbia – Percentage Basis**

The results indicate that the manufacturing portion of the life cycle is the greatest contributor to impacts in all categories except weighted resource use and respiratory effects. The logging process consumes the greatest resources because this process is the point in the life cycle where wood resources are extracted from the environment. The respiratory effects in the

staining portion of the life cycle is caused by nitrogen oxide emissions generated in propylene manufacture, which is a precursor to the acrylic portion of the stain.

Besides weighted resource use, the logging portion of the life cycle is a small contributor to impacts in all categories. The steel fasteners and gaskets, as well as the end of life processing, are similarly small overall contributors to the life cycle impacts.

The delivery and construction of the log walls accounts for roughly 20% of the life cycle global warming impacts. This amount is somewhat higher than is typical in residential construction due to the massive nature of the log walls that requires significant transportation burdens and the use of a crane to hoist the logs into place at the construction site.

### 6.3 LCIA Results for Milled Profile Log Wall

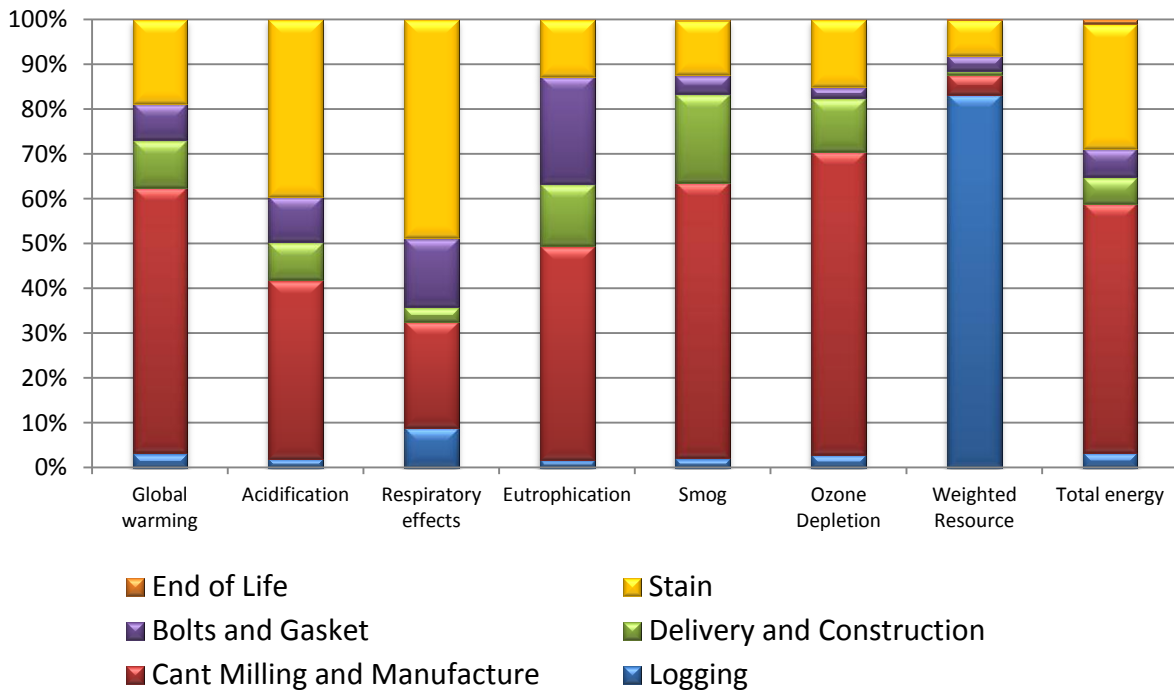
The life cycle impact assessment results of milled profile log walls are presented in Table 12 on an absolute basis, in Table 13 on a percentage contribution basis, and graphically in Figure 5.

**Table 12: LCIA Results for 100 Square Feet Milled Profile Log Wall Manufactured and Constructed in British Columbia – Absolute Basis**

	Units	Total	Logging	Cant Milling and Manufacture	Delivery and Construction	Bolts and Gasket	Stain	End of Life
Global warming	kg CO2 eq.	218.08	6.96	129.56	23.05	17.72	40.67	0.12
Acidification	H+ moles eq.	75.37	1.55	30.02	6.40	7.62	29.75	0.03
Respiratory effects	kg PM2.5 eq.	0.26	0.02	0.06	0.01	0.04	0.13	0.00
Eutrophication	kg N eq.	0.04	0.00	0.02	0.01	0.01	0.01	0.00
Smog	kg NOx eq.	0.62	0.01	0.38	0.12	0.03	0.08	0.00
Ozone Depletion	kg CFC 11 eq	7.49E-09	2.22E-10	5.07E-09	8.92E-10	1.84E-10	1.12E-09	4.85E-12
Weighted Resource	kg	1,120.89	933.66	50.63	8.52	37.90	90.14	0.04
Total energy	MJ eq	5,484.40	182.67	3,050.95	325.89	352.89	1,518.70	53.31
<i>Fossil energy</i>	MJ eq	4,371.66	108.13	2,091.51	322.67	312.10	1,483.96	53.31
<i>Nuclear energy</i>	MJ eq	61.08	0.86	17.52	2.75	8.76	31.19	0.00
<i>Renewable energy</i>	MJ eq	1,051.65	73.68	941.91	0.47	32.03	3.55	0.00

**Table 13: LCIA Results for 100 Square Feet Milled Profile Log Wall Manufactured and Constructed in British Columbia – Percentage Basis**

	Logging	Cant Milling and Manufacture	Delivery and Construction	Bolts and Gasket	Stain	End of Life
Global warming	3.19%	59.41%	10.57%	8.13%	18.65%	0.05%
Acidification	2.05%	39.83%	8.49%	10.11%	39.47%	0.04%
Respiratory effects	9.01%	23.61%	3.27%	15.42%	48.67%	0.02%
Eutrophication	1.79%	47.70%	13.81%	24.09%	12.53%	0.07%
Smog	2.16%	61.50%	19.76%	4.26%	12.21%	0.12%
Ozone Depletion	2.96%	67.67%	11.90%	2.45%	14.95%	0.06%
Weighted Resource	83.30%	4.52%	0.76%	3.38%	8.04%	0.00%
Total energy	3.33%	55.63%	5.94%	6.43%	27.69%	0.97%
<i>Fossil energy</i>	2.47%	47.84%	7.38%	7.14%	33.94%	1.22%
<i>Nuclear energy</i>	1.42%	28.69%	4.50%	14.34%	51.05%	0.00%
<i>Renewable energy</i>	7.01%	89.57%	0.04%	3.05%	0.34%	0.00%



**Figure 5: LCIA Results for 100 Square Feet Milled Profile Log Wall Manufactured and Constructed in British Columbia – Percentage Basis**

The results for the milled profile wall are similar to the handcrafted wall. Again, the cant milling and manufacturing portion of the life cycle is the greatest overall contributor to life cycle impacts, with the exception of the respiratory effects of the stain and the resource use attributed to the logging process.

The logging, delivery, and construction portions of the life cycle cause less impacts in the milled profile log wall life cycle than in the life cycle of the handcrafted log wall. This is due to the fact that the milled profile log wall consumes less raw material and weighs less than half as much as the handcrafted wall. The additional electricity consumed in the manufacturing portion of the life cycle as compared to the manufacturing of the handcrafted wall is inconsequential since the grid in BC is based entirely on hydro power which is a minor contributor to the reported environmental impacts.

#### 6.4 LCIA Results for Timber Frame System

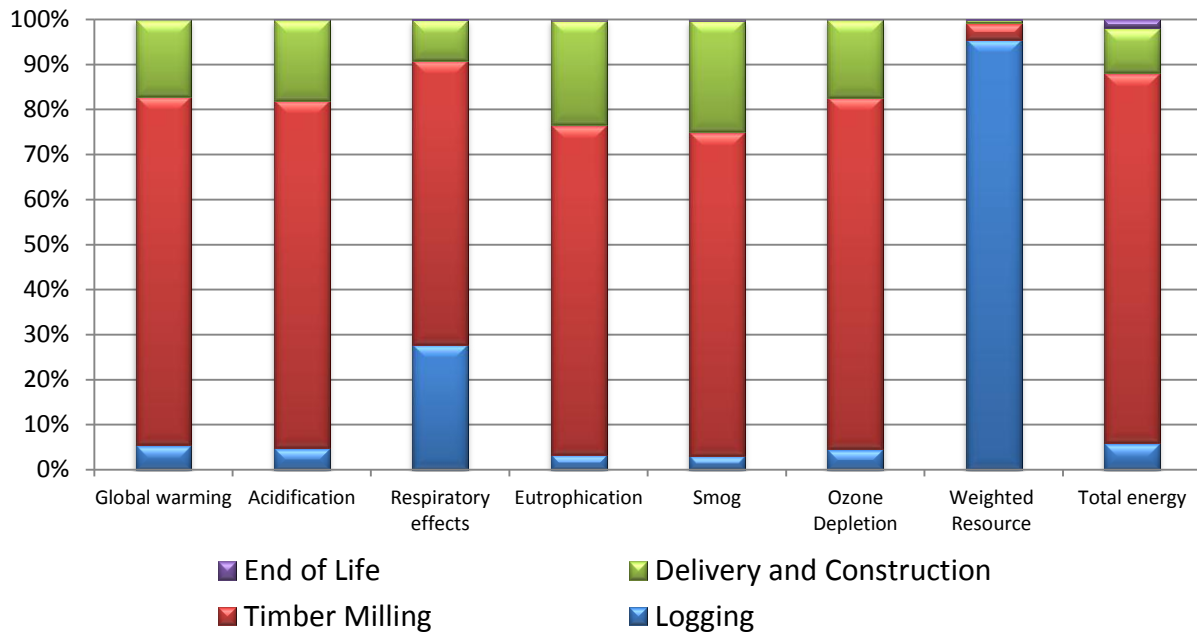
The life cycle impact assessment results of heavy timbers are presented in Table 14 on an absolute basis, in Table 15 on a percentage contribution basis, and graphically in Figure 6.

**Table 14: LCIA Results for 1000 Board Feet Heavy Timbers Manufactured and Constructed in British Columbia – Absolute Basis**

	Units	Total	Logging	Timber Milling	Delivery and Construction	End of Life
Global warming	kg CO2 eq.	123.49	6.82	95.45	21.10	0.13
Acidification	H+ moles eq.	31.46	1.51	24.28	5.63	0.04
Respiratory effects	kg PM2.5 eq.	0.08	0.02	0.05	0.01	0.00
Eutrophication	kg N eq.	0.02	0.00	0.02	0.01	0.00
Smog	kg NOx eq.	0.43	0.01	0.31	0.11	0.00
Ozone Depletion	kg CFC 11 eq	4.75E-09	2.17E-10	3.71E-09	8.19E-10	5.23E-12
Weighted Resource	kg	1,051.02	1,004.47	38.53	7.97	0.04
<b>Total energy</b>	<b>MJ eq</b>	<b>2,996.37</b>	<b>178.79</b>	<b>2,460.74</b>	<b>299.45</b>	<b>57.39</b>
<i>Fossil energy</i>	MJ eq	2,043.75	105.83	1,584.04	296.49	57.39
<i>Nuclear energy</i>	MJ eq	16.62	0.85	13.24	2.53	0.00
<i>Renewable energy</i>	MJ eq	936.00	72.11	863.45	0.43	0.00

**Table 15: LCIA Results for 1000 Board Feet Heavy Timbers Manufactured and Constructed in British Columbia – Percentage Basis**

	Logging	Timber Milling	Delivery and Construction	End of Life
Global warming	5.52%	77.30%	17.08%	0.10%
Acidification	4.81%	77.17%	17.90%	0.11%
Respiratory effects	27.75%	63.11%	9.09%	0.05%
Eutrophication	3.39%	73.19%	23.26%	0.15%
Smog	3.07%	71.97%	24.78%	0.18%
Ozone Depletion	4.57%	78.07%	17.25%	0.11%
Weighted Resource	95.57%	3.67%	0.76%	0.00%
<b>Total energy</b>	<b>5.97%</b>	<b>82.12%</b>	<b>9.99%</b>	<b>1.92%</b>
<i>Fossil energy</i>	5.18%	77.51%	14.51%	2.81%
<i>Nuclear energy</i>	5.09%	79.69%	15.20%	0.02%
<i>Renewable energy</i>	7.70%	92.25%	0.05%	0.00%



**Figure 6: LCIA Results for 1000 Board Feet Heavy Timbers Manufactured and Constructed in British Columbia – Percentage Basis**

The timber milling process is the greatest cause of impacts in the life cycle, with the logging causing less than 10% of impacts in all categories except weighted resource use. It should be noted that while the focus of this LCA was not to identify the overall scale of environmental impacts since no comparisons are involved, the overall impacts of all three products, and particularly the heavy timbers, is quite low across the board.

## 7. Sensitivity Analysis

### 7.1 Transportation to Construction Sites Outside BC

The functional unit in this study was based on the construction of the log walls and timber frames in British Columbia. The results may be translated to other locations by considering the impacts of transporting the various products to construction sites across North America, Asia, and Europe. These transportation scenarios may be derived by the transportation impacts presented in this section. Tables 15, 16, and 17 present the impacts of transporting the handcrafted walls, milled profile wall, and timber frame via truck, train, and shipping freighter.

**Table 16: Transportation Sensitivity Analysis for Handcrafted Log Walls**

	Units	Baseline Total	1000 km Truck	1000 km Truck % Increase	1000 km Train	1000 km Train % Increase	1000 km Ship	1000 km Ship % Increase
Global warming	kg CO2 eq.	183.35	124.64	68%	29.58	16%	24.88	14%
Acidification	H+ moles eq.	72.01	41.62	58%	29.99	42%	29.20	41%
Respiratory effects	kg PM2.5 eq.	0.21	0.05	26%	0.04	18%	0.03	16%
Eutrophication	kg N eq.	0.05	0.04	85%	0.03	68%	0.03	59%
Smog	kg NOx eq.	0.79	0.85	108%	0.70	88%	0.62	79%
Ozone Depletion	kg CFC 11 eq	6.50E-09	4.72E-09	73%	1.12E-09	17%	9.29E-10	14%
Weighted Resource	kg	2259.99	40.53	2%	9.65	0%	7.98	0%
<b>Total energy</b>	<b>MJ eq</b>	<b>4138.93</b>	<b>1724.46</b>	<b>42%</b>	<b>410.59</b>	<b>10%</b>	<b>339.64</b>	<b>8%</b>
<i>Fossil energy</i>	MJ eq	3739.64	1707.43	46%	406.54	11%	336.28	9%
<i>Nuclear energy</i>	MJ eq	54.14	14.53	27%	3.46	6%	2.86	5%
<i>Renewable energy</i>	MJ eq	345.15	2.50	1%	0.60	0%	0.49	0%

**Table 17: Transportation Sensitivity Analysis for Milled Profile Log Walls**

	Units	Baseline Total	1000 km Truck	1000 km Truck % Increase	1000 km Train	1000 km Train % Increase	1000 km Ship	1000 km Ship % Increase
Global warming	kg CO2 eq.	218.08	80.39	37%	19.08	9%	16.05	7%
Acidification	H+ moles eq.	75.37	26.84	36%	19.35	26%	18.83	25%
Respiratory effects	kg PM2.5 eq.	0.26	0.04	14%	0.02	9%	0.02	8%
Eutrophication	kg N eq.	0.04	0.03	60%	0.02	48%	0.02	42%
Smog	kg NOx eq.	0.62	0.55	89%	0.45	73%	0.40	65%
Ozone Depletion	kg CFC 11 eq	7.49E-09	3.04E-09	41%	7.25E-10	10%	5.99E-10	8%
Weighted Resource	kg	1120.89	26.14	2%	6.22	1%	5.15	0%
<b>Total energy</b>	<b>MJ eq</b>	<b>5484.40</b>	<b>1112.23</b>	<b>20%</b>	<b>264.82</b>	<b>5%</b>	<b>219.06</b>	<b>4%</b>
<i>Fossil energy</i>	MJ eq	4371.66	1101.25	25%	262.21	6%	216.89	5%
<i>Nuclear energy</i>	MJ eq	61.08	9.37	15%	2.23	4%	1.85	3%
<i>Renewable energy</i>	MJ eq	1051.65	1.61	0%	0.38	0%	0.32	0%

**Table 18: Transportation Sensitivity Analysis for Heavy Timbers**

	Units	Baseline Total	1000 km Truck	1000 km Truck % Increase	1000 km Train	1000 km Train % Increase	1000 km Ship	1000 km Ship % Increase
Global warming	kg CO2 eq.	123.49	67.56	55%	16.04	13%	13.49	11%
Acidification	H+ moles eq.	31.46	22.56	72%	16.26	52%	15.83	50%
Respiratory effects	kg PM2.5 eq.	0.08	0.03	36%	0.02	25%	0.02	22%
Eutrophication	kg N eq.	0.02	0.02	98%	0.02	78%	0.01	68%
Smog	kg NOx eq.	0.43	0.46	108%	0.38	89%	0.34	79%
Ozone Depletion	kg CFC 11 eq	4.75E-09	2.56E-09	54%	6.09E-10	13%	5.04E-10	11%
Weighted Resource	kg	1051.02	21.97	2%	5.23	0%	4.33	0%
<b>Total energy</b>	<b>MJ eq</b>	<b>2996.37</b>	<b>934.74</b>	<b>31%</b>	<b>222.56</b>	<b>7%</b>	<b>184.10</b>	<b>6%</b>
<i>Fossil energy</i>	MJ eq	2043.75	925.52	45%	220.36	11%	182.28	9%
<i>Nuclear energy</i>	MJ eq	16.62	7.87	47%	1.87	11%	1.55	9%
<i>Renewable energy</i>	MJ eq	936.00	1.35	0%	0.32	0%	0.27	0%

The transportation impacts are significant in terms of the overall life cycle impacts.

Transporting the log walls 1000 km by truck increases the global warming impacts between 37% and 68% for the various products. Considering the fact that the Rocky Mountain region of the United States is a significant market for BC log and timber products, this means that shipping a log wall from Vancouver to Denver (2,400 km) via truck more than doubles the global warming impacts of all three products. Similarly, a train shipment across the continent to the east coast (4,500 km) or a trans-atlantic shipment (5,500 km) would increase impacts by greater than 50% and by as much as 100%. It should be noted that these transportation impacts are only calculated in relation to the overall impacts of the rest of the life cycle which are generally quite low and any consideration between alternative materials should similarly include shipping as a portion of the life cycle.

## 7.2 Kiln Drying of Milled Profile Wall and Timber Frame

The baseline case in the analysis excluded kiln-drying as the industry’s standard practice is to use air-dried material – often from standing dead timber. The handcrafted log walls almost exclusively use air-dried material due to the difficulty of kiln drying whole logs, but the milled profile log walls and timbers are often sold as kiln-dried. The sensitivity analysis presented in Table 19 shows the relative impacts of the kiln drying process in relation to the life cycle impacts.



**Table 19: Kiln Drying Sensitivity Analysis for Milled Profile Log Walls and Timbers**

	Units	Milled Profile Baseline Wall	Kiln Drying	Kiln Drying % Increase	Timber Frame Baseline	Kiln Drying	Kiln Drying % Increase
Global warming	kg CO2 eq.	218.08	15.88	7%	123.49	19.84	16%
Acidification	H+ moles eq.	75.37	9.07	12%	31.46	11.34	36%
Respiratory effects	kg PM2.5 eq.	0.26	0.05	18%	0.08	0.06	72%
Eutrophication	kg N eq.	0.04	0.00	10%	0.02	0.01	24%
Smog	kg NOx eq.	0.62	0.31	50%	0.43	0.39	91%
Ozone Depletion	kg CFC 11 eq.	7.49E-09	1.26E-10	2%	4.75E-09	1.58E-10	3%
Weighted Resource	kg	1120.89	334.23	30%	1051.02	417.79	40%
<b>Total energy</b>	<b>MJ eq</b>	<b>5484.40</b>	<b>299.36</b>	<b>5%</b>	<b>2996.37</b>	<b>374.20</b>	<b>12%</b>
<i>Fossil energy</i>	MJ eq	4371.66	4.29	0%	2043.75	5.37	0%
<i>Nuclear energy</i>	MJ eq	61.08	30.58	50%	16.62	38.22	230%
<i>Renewable energy</i>	MJ eq	1051.65	0.00	0%	936.00	0.00	0%

The kiln drying process modestly increases the impacts of the milled log walls and timber products. Additional smog and weighted resource use are caused by the use of wood fuel in the drying process that causes additional nitrogen oxide emissions and wood resource consumption.

### 7.3 Staining Frequency

The baseline scenario assumed staining every 6 years whereas a fastidious log home owner may choose to stain more often than this. Doubling this frequency to once every 3 years causes the increased impacts presented in Table 20.

**Table 20: Staining Sensitivity for Handcrafted and Milled Profile Log Walls**

	Units	Handcraft Baseline Wall	Additional Stain	Additional Stain % Increase	Milled Profile Baseline Wall	Additional Stain	Additional Stain % Increase
Global warming	kg CO2 eq.	183.35	40.67	22%	218.08	40.67	19%
Acidification	H+ moles eq.	72.01	29.75	41%	75.37	29.75	39%
Respiratory effects	kg PM2.5 eq.	0.21	0.13	61%	0.26	0.13	49%
Eutrophication	kg N eq.	0.05	0.01	11%	0.04	0.01	13%
Smog	kg NOx eq.	0.79	0.08	10%	0.62	0.08	12%
Ozone Depletion	kg CFC 11 eq.	6.50E-09	1.12E-09	17%	7.49E-09	1.12E-09	15%
Weighted Resource	kg	2259.99	90.14	4%	1120.89	90.14	8%
<b>Total energy</b>	<b>MJ eq</b>	<b>4138.93</b>	<b>1518.70</b>	<b>37%</b>	<b>5484.40</b>	<b>1518.70</b>	<b>28%</b>
<i>Fossil energy</i>	MJ eq	3739.64	1483.96	40%	4371.66	1483.96	34%
<i>Nuclear energy</i>	MJ eq	54.14	31.19	58%	61.08	31.19	51%
<i>Renewable energy</i>	MJ eq	345.15	3.55	1%	1051.65	3.55	0%

The increased stain frequency doubles the contribution of this portion of the life cycle, adding roughly 20% in additional global warming impacts. This is noteworthy for portions of the log home and construction sites that are subject to above-average weathering conditions. It may similarly be concluded that a less maintenance-conscious home owner, and one in a less demanding climate, may stain less than once every 6 years and with less than 3 coats each time and subsequently reduce impacts (although potentially causing greater replacement and repair frequency).

## 8. Interpretation and Conclusions

### 8.1 Conclusions

The impacts of the three products are generally driven by the manufacturing portion of the life cycle. The stain is also a significant driver of impacts, accounting for roughly 20% of global warming impacts in the two log wall life cycles. The logging, construction, steel and gasket use, and end of life processing are less significant in terms of overall impacts.

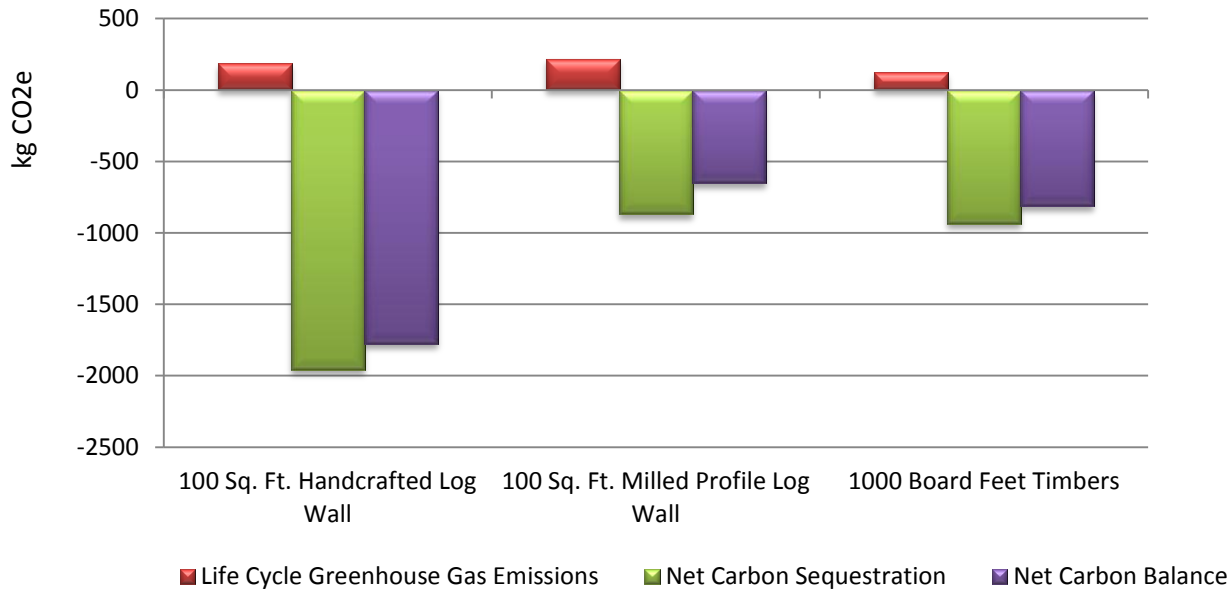
The sensitivity analysis revealed that the results are highly sensitive to the transportation distance and mode of transportation. Shipping the products via truck to a Rocky Mountain US city such as Denver roughly doubles the global warming impacts, as does shipping the materials via train across the continent or via ship to Asia or Europe. The kiln drying and staining frequency, while significant, were less influential to overall impacts.

The final consideration of this analysis is to compare the carbon sequestration as presented in Chapter 5 with the life cycle impacts presented in Chapter 6. Table 21 shows the net carbon footprint of the three products that includes both the net carbon sequestration as shown in Table 7 and the greenhouse gasses from the rest of the life cycle. This result is also shown graphically in Figure 8.

It is clear that the overall carbon sequestration benefits of the three products far outweigh the greenhouse gas emissions caused by the rest of the life cycle. In the case of the handcrafted log walls that cause very little impacts relative to the mass of the product, the carbon sequestered in the wood is greater than 10 times the greenhouse gas emissions from the rest of the life cycle.

**Table 21: Net Carbon Balance for Log and Timber Products**

	100 Sq. Ft. Handcrafted Log Wall (kg CO2e)	100 Sq. Ft. Milled Profile Log Wall (kg CO2e)	1000 Board Feet Timbers (kg CO2e)
Life Cycle Greenhouse Gas Emissions	183.35	218.08	123.49
Net Carbon Sequestration	-1956.93	-869.75	-936.39
Net Carbon Balance	-1773.59	-651.66	-812.90



**Figure 7: Net Carbon Balance for Log and Timber Products**

## 8.2 Limitations

The sensitivity analysis revealed several areas of uncertainty in the study. First, the construction sites were limited to the BC region and assumed that the materials were transported 200 km to the construction site. To expand the analysis to the rest of the BC log and timber industry’s sales regions throughout the world, the mode of transportation would first need to be established and the impacts recalculated. The underlying data to derive these balances are available in the sensitivity analysis which identified this as a major area of sensitivity in the model.

The stain and kiln-drying are also sources of uncertainty in the model. The kiln-drying is less influential to overall impacts, but the stain frequency is a significant source of uncertainty as it is reliant on the tendencies of individual home owners and other burdens that may be site specific and even vary within a building depending on orientation.

## 8.3 Recommendations

The overall impacts are quite low for all of the products that were assessed in this LCA as the life cycle draws heavily on BC electricity which is generated by low impact hydropower. The carbon balance that includes carbon sequestration also identifies that the log walls have the potential to be well beyond carbon neutral and result in an overall carbon sink. This gives the

BC LTBIA significant leverage to push for the incorporation of life cycle impacts as a justification for alternative compliance or exceptions with regards to thermal performance based standards and building codes. We would recommend that these results be combined with ongoing energy research to gain a full understanding of the sustainability of log and timber building to put both sets of results into perspective.

We would also like to suggest that the industry consider LCA-based declarations of their products, such as an ISO 14025 compliant environmental product declaration. Such a declaration, which is fairly well established in European markets and is increasingly being sought in North America, would firmly put the industry in a position of proactive disclosure – and would allow the industry to emphasize the positive attributes of their products as demonstrated in this LCA.

## 9. References

1. ISO 14040:2006. Environmental Management – Life Cycle Assessment – Principles and Framework.
2. ISO 14044:2006. Environmental Management – Life Cycle Assessment – Requirements and guidelines.
3. ISO 21930:2007. Sustainability in Building Construction – Environmental Declaration of Building Products.
4. Bare, Jane C, and others. 2003. TRACI- The Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts, Journal of Industrial Ecology, Volume 6, Number 3
5. Bare, Jane C (2011) TRACI 2.0: the tool for the reduction and assessment of chemical and other environmental impacts 2.0. Clean Techn. Environ. Policy 13:687-696
6. Frischknecht, R. and N. Jungbluth (editors). 2004 Implementation of Life Cycle Impact Assessment Methods. Ecoinvent Report No. 34. Data V1.1. Dübendorf, Switzerland: Ecoinvent.
7. Leiden University. Guide on Environmental Life Cycle Assessment. Part 2B Operation Annex. 2001. Leiden, Netherlands: Leiden University.
8. Lundie, Sven, Andreas Ciroth, and Gjalt Huppes. 2007. Inventory Methods in LCA: Towards Consistency and Improvement. 135 pages. UNEP-SETAC Life Cycle Initiative, Life Cycle Inventory Program, Task Force 3: Methodological Consistency.
9. Salazar, J. and J. Meil (2009) *Prospects for carbon neutral housing: The influence of greater wood use on the carbon footprint of a single family residence*. Journal of Cleaner Production: 17(17): 1563-1571.
10. U.S. LCI Database. Maintained by National Renewable Energy Laboratory. <http://www.nrel.gov/lci/>.

## Appendix 1: Life Cycle Inventory Secondary Data Sources

Technosphere Input	LCI Data Source
Cedar Roundwood	CIPEC (LCA by Athena/Forintek)data for logs at roadside
Diesel	USLCI data for diesel combusted in equipment; pre-combustion dummy processes corrected
Diesel Crane	USLCI data for diesel combusted in equipment; pre-combustion dummy processes corrected
Diesel Truck Delivery	USLCI data for diesel transport, combination truck, diesel powered; pre-combustion dummy processes corrected
Douglas Fir Roundwood	CIPEC (LCA by Athena/Forintek)data for logs at roadside
Douglas Fir Lumber	CIPEC (LCA by Athena/Forintek)data for rough cut green lumber; includes logging
Electricity	Athena data for % electricity source and line loss, USLCI data for combustion processes
Gasoline	USLCI data for gasoline combusted in equipment; pre-combustion dummy processes corrected
Hydraulic Fluid	USLCI data for gasoline production; pre-combustion dummy processes corrected
LDPE Gasket	USLCI data for low density polyethylene resin
Lubricants	USLCI data for gasoline production; pre-combustion dummy processes corrected
Natural gas	USLCI data for natural gas combusted in boiler; pre-combustion dummy processes corrected
Pine Roundwood	CIPEC (LCA by Athena/Forintek)data for logs at roadside
Propane	USLCI data for propane combusted in equipment; pre-combustion dummy processes corrected
Shrinkwrap	USLCI data for low density polyethylene resin
Spruce Roundwood	CIPEC (LCA by Athena/Forintek)data for rough cut green lumber; includes logging
Steel Bolts	Athena data for screws, nuts, bolts; based on World Steel data

## Appendix 2: Data Collection Questionnaires

Please provide as much detail as possible for all questions. Units of measure are specified for some materials, but if you have other units that are easier to report, please replace our units and add yours.

We have provided lists of inputs, waste, and emissions as placeholders. Please replace these lists with ones that you maintain in-house. We have also provided emissions reporting templates that you may use or simply insert your existing emissions tables into the Air Emissions and Water Emissions worksheets.

All responses you provide should be for production in the reporting year 2010 or if based on a different year noted by that response.

For production inputs and outputs, we prefer responses that incorporate changes to inventory levels between year beginning and end. Otherwise, these may be reported as amount purchased in that time period and an estimation given as to whether inventory was roughly the same at year beginning and end. The preferred response is to include changes to inventory in the reported year for both purchased and produced materials based on the following formula:

Quantity Produced = Sold + (Inventory<sub>year end</sub> - Inventory<sub>year beginning</sub>)

Quantity Consumed = Purchased + (Inventory<sub>year beginning</sub> - Inventory<sub>year end</sub>)

Add comments or clarifications directly on the questionnaire if needed.

Thank you for your valuable time and careful effort to fill in all the blanks.

Please contact James Salazar (phone: 250.306.0638, email: james.salazar@athenasmi.org) at the Athena Institute with any questions.



# ATHENA INSTITUTE LCI PROCESS DATA WORKSHEET

## General Information

Please complete this worksheet based on 2010 year production

If basis other than 2010 calendar year production, describe here:

### PARTICIPANT INFORMATION

Prepared by:

Contact Phone Number:

Position:

Email:

Facility Location:

Date Prepared:

### DATA COLLECTION METHOD

**ATHENA:**  
Optional Section

Please check the boxes for the data collection methods used to fill out this survey.

	Material In	Energy In	Product Out	Waste Out	Emissions
Inventory Records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accounting Records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipment spec's	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Engineering estimates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (describe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### TOTAL PRODUCTION

	Amount	Units
Log Wall System:	<input style="width: 100%; height: 20px;" type="text"/>	Sq. Ft Walls (avg. Thickness)
Heavy Timbers	<input style="width: 100%; height: 20px;" type="text"/>	mbfm
Milled Log Wall System:	<input style="width: 100%; height: 20px;" type="text"/>	Sq. Ft Walls (avg. thickness)
Other Products (Estimated by Category):	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>
Other Products (Estimated by Category):	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>
Other Products (Estimated by Category):	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>
Other Products (Estimated by Category):	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>
Other Products (Estimated by Category):	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>
Other Products (Estimated by Category):	<input style="width: 100%; height: 20px;" type="text"/>	<input style="width: 100%; height: 20px;" type="text"/>

**ATHENA:** Units to with those used in keeping - these un need to get with t

*Add Rows if Necessary*

## ATHENA INSTITUTE LCI PROCESS DATA WORKSHEET

### Handcrafted Log Wall Manufacture

**PRODUCT INFORMATION**

Average Log Wall Thickness:

Total Log Wall Production in 2010

**ATHENA:** This section to be revised entirely if records not available on wall area basis

**PRIMARY PRODUCT OUTPUT IN 2010**

	Amount	Units	Log Diameter	Species
Log Wall Type 1				
Log Wall Type 2				
Log Wall Type 3				
Log Wall Type 4				
Log Wall Type 5				
Other				
Other				
Other				
Other				
Other				

*Add Rows if Necessary*

**ATHENA:** Only provide data for log wall portion of production in this section

**PRIMARY MATERIAL INPUTS IN 2010**

	Amount	Units	Species	Distance to Supplier (miles)	Mode of Transport		
					% Road	% Rail	% Ship
Raw Unpeeled Log (Species 1)							
Raw Unpeeled Log (Species 2)							
Raw Unpeeled Log (Species 3)							
Raw Unpeeled Log (Species 4)							
Raw Unpeeled Log (Species 5)							
Other							
Other							
Other							
Other							
Other							

*Add Rows if Necessary*

**ATHENA:** To be given as % of inputs if total waste not tracked

**LOG WALL SPECIFIC WASTE IN 2010**

	Amount	Units kg	% of Inputs (if known)	Disposal Method		
				Municipal Waste	Recycle	Other Treatment
Bark						
Shavings						
Chips						
Sawdust						
Other						
Other						
Other						
Other						

*Add Rows if Necessary*

**ATHENA INSTITUTE LCI PROCESS DATA WORKSHEET**  
**Handcrafted Log Wall Manufacture**

**PRODUCT INFORMATION**

Average Log Wall Thickness:

Total Log Wall Production in 2010:

**PRIMARY PRODUCT OUTPUT IN 2010**

	Amount	Units	Wall Thickness	Flat or Rounded
Log Wall Type 1				
Log Wall Type 2				
Log Wall Type 3				
Log Wall Type 4				
Log Wall Type 5				
Other				
Other				
Other				
Other				
Other				

*Add Rows if Necessary*

**PRIMARY** ATHENA: Only provide data for log wall portion of production in this section

ATHENA: Please feel free to change these if glulam, roundwood, or other inputs are used

	Amount	Units	Dimensions	Moisture Content	Species	Distance to Supplier (miles)	Mode of Transport		
							% Road	% Rail	% Ship
Timber Input 1									
Timber Input 2									
Timber Input 3									
Timber Input 4									
Timber Input 5									
Other									
Other									
Other									
Other									
Other									

*Add Rows if Necessary*

**LOG WALL SPECIFIC WASTE IN 2010**

	Amount	Units	% of Inputs (if known)	Disposal Method		
				Municipal Waste	Recycle	Other Treatment
Bark						
Shavings						
Chips						
Sawdust						
Other						
Other						
Other						

*Add Rows if Necessary*

## ATHENA INSTITUTE LCI PROCESS DATA WORKSHEET

### Heavy Timber Manufacture

#### PRODUCT INFORMATION

Total Timber Production in 2010:

	mbfm
--	------

#### PRIMARY PRODUCT OUTPUT IN 2010

	Amount	Units	Dimensions	Species
Timber Product 1				
Timber Product 2				
Timber Product 3				
Timber Product 4				
Timber Product 5				
Other				
Other				
Other				
Other				
Other				

Add Rows if Necessary

#### PRIMARY MATERIAL INPUTS IN 2010

**ATHENA:** Only provide data for heavy timber portion of production in this section

	Amount	Units	Species	Distance to Supplier (miles)	Mode of Transport		
					% Road	% Rail	% Ship
Raw Unpeeled purchase - i.e. rough or planed timbers, glulam, etc.							
Raw Unpeeled <small>Please provide dimensions of inputs</small>							
Raw Unpeeled Log (Species 3)							
Raw Unpeeled Log (Species 4)							
Raw Unpeeled Log (Species 5)							
Other							
Other							
Other							
Other							
Other							

Add Rows if Necessary

#### HEAVY TIMBER SPECIFIC WASTE IN 2010

	Amount	Units	% of Inputs (if known)	Disposal Method		
				Municipal Waste	Recycle	Other Treatment
Bark		kg				
Shavings						
Chips						
Sawdust						
Other						
Other						
Other						
Other						

Add Rows if Necessary

## ATHENA INSTITUTE LCI PROCESS DATA WORKSHEET

### Facility Energy Use

**FACILITY ENERGY INPUTS IN 2010**

	Amount	Units	% Milled Wall Production	% Heavy Timber Production	% Handcrafted Wall Production	% Other
Purchased Elect.		kWh				
Natural gas		m3				
Diesel fuel		liters				
Gasoline		liters				
Propane		liters				
Other (specify)						
Other (specify)						
Other (specify)						

*Add Rows if Necessary*

**ATHENA:** In this section please make your best estimate as to the portion of energy used to manufacture the different products

Energy Use by Product

## ATHENA INSTITUTE LCI PROCESS DATA WORKSHEET

### Facility Ancillary Materials

**ANCILIARY MATERIAL "INPUTS" IN 2010**

	Amount	Units	Distance to Supplier (miles)	% Milled Wall Production	% Heavy Timber Production	% Handcrafted Wall Production	% Other
Hydraulic fluid		liters					
Lubricants		liters					
Antifreeze		liters					
Shrink wrap		kg					
Pallets (not reused)		#					
Cardboard		kg					
Other							
Other							

*Add Rows if Necessary*

Material Use by Product

**ANCILIARY MATERIAL "WASTE" IN 2010**

	Amount	Units	% of Inputs (if known)	Municipal Waste	Recycle	Other Treatment
Hydraulic fluid		liters				
Lubricants		liters				
Antifreeze		liters				
Shrink wrap		kg				
Pallets (not reused)		#				
Cardboard		kg				
Other						
Other						

*Add Rows if Necessary*

Disposal Method

**Date:** September 21, 2021

**To:** Nikki Gilmore, Chief Administrative Officer

**From:** Gwendolyn Kennedy, Legislative Assistant

**Subject:** Electronic Meetings – Response to COVID-19 Legislated Changes

---

## **PURPOSE**

The purpose of this report is to seek input from the Committee of the Whole regarding electronic and hybrid meeting formats after the term of Ministerial Order M192 ends on September 28<sup>th</sup>.

## **BACKGROUND**

Since June 17, 2020, local governments have been operating under Ministerial Order M192, permitting meetings and public hearings to be conducted electronically during the COVID-19 pandemic. On June 30, 2021 the COVID-19 provincial state of emergency was ended; however, certain orders and regulations including M192 were extended to allow time to transition back to normal.

On September 28, 2021, 90 days after the end of the provincial state of emergency, the authority to hold electronic meetings under M192 will expire. On September 29, 2021, *Bill 10, Municipal Affairs Statutes Amendments Act*, providing permanent authority for local governments to conduct meetings electronically, will come into effect. Once the amendments come into force, local governments may provide public notice, communicate changes to the public, and begin to do readings of an amended procedure bylaw. Until this process has been completed, meetings must be held under the provisions of the existing procedures bylaw.

Council Procedures Bylaw No. 788, 2015, Amendment Bylaw No. 888, 2020, added provision for electronic meetings only during a health, environmental, or safety emergency. A consolidated version of the Bylaw is attached for reference as **Appendix A**. Thus, effective September 29, 2021, and remaining in effect until the necessary provisions are added to the Council Procedures Bylaw, Council and Council Committee meetings must be held in person, with no more than two Council members, excluding the presiding member, permitted to attend by electronic means at any meeting.

## **DISCUSSION & COMMENTS**

During the tenure of Ministerial Order M192, Council meetings have been held remotely by ZOOM webinar with all Council members, Staff, delegations, media, and the public participating electronically, and recordings being made available to the public after the meeting. The format has enabled the Village to comply with COVID-19 distancing requirements while facilitating public participation in meetings and ensuring transparency of proceedings.

The COVID-19 pandemic accelerated the acceptance of online or electronic alternatives to in-person meetings and forever changed expectations regarding accessibility and transparency. There is now an assumption from delegations and the public that provision will be made for electronic attendance at meetings, and that meetings will continue to be either live-streamed or recorded and posted online. Thus, although a return to in-person meetings in the format used prior to the onset of the COVID-19 pandemic is one solution to managing meetings after the expiry of M192, Staff acknowledge that electronic and hybrid meeting formats may be necessary to satisfy expectations in the post COVID-19 world, particularly for delegations to Council who may be reluctant to travel unnecessarily due to COVID-19 and carbon footprint considerations. Also, Staff acknowledge the possibility that COVID-19 pandemic-related physical distancing requirements and occupancy limits may be reinstated and that personal comfort with indoor gatherings varies. As a result, some meeting participants may prefer or may be required to attend meetings by electronic means.

### **Legislative Consideration**

*Bill 10, Municipal Affairs Statutes Amendments Act*, requires that local governments holding meetings in a format that includes electronic participation provide a place for the public to hear, or watch and hear, the meetings. Council Chambers is equipped with a large screen which would permit the public in attendance to watch and hear those participating in the meeting by electronic means, provided COVID-19 pandemic-related occupancy limits and physical distancing requirements are not reinstated. The *Act* also requires that a municipal officer (Chief Administrative Officer, Corporate Officer, or Finance Officer) be in attendance at the place where the public can attend. As such, if Council Chambers is offered as the location for the public to attend to watch and hear meetings, one of the above noted staff members would also have to be in attendance regardless of whether public were present.

*Guidance for Adapting to the New Electronic Meetings Framework*, published by the Ministry of Municipal Affairs, Governance and Structure Branch, Local Government Division (**Appendix B**), provides a list of questions for Council and Staff consideration when adding authorization for electronic meetings to a council procedures bylaw. Staff have included the questions, with answers if available, as **Appendix C**, and ask that the Committee provides comment on these questions to assist Staff in drafting an amendment to Council Procedures Bylaw No. 788, 2015.

*Guidance for Adapting to the New Electronic Meetings Framework* suggests best practices for inclusion in a procedure bylaw or electronic meeting policy to support elected officials, staff, and the public in participating in and attending electronic meetings. Key considerations include the following:

- describe the circumstances under which electronic meetings are permitted;
- avoid referring to specific technology (i.e.: ZOOM, Microsoft Teams, or Google meets);
- outline procedures for determining quorum, taking and verifying votes, addressing conflict of interest, shifting from open to closed meetings, adding items to the agenda, and the methods for making a motion or a point of order; and
- provide as much notice as possible and publish the agenda well in advance of the meeting date.

Staff are suggesting that, if an amendment is made to Council Procedures Bylaw No. 788, 2015 to permit electronic and hybrid meetings, it should be crafted to allow sufficient flexibility to accommodate the need for fully electronic and hybrid meeting formats as circumstances, technology, and the Village's needs evolve. Further rules and procedures could be included in an

Electronic Meetings Policy that would supplement the bylaw and could be amended in response to changing circumstances and technology. Video Recording and Broadcasting Policy COU-011, approved by Council on May 26, 2020, attached as **Appendix D**, has guided electronic meetings under Ministerial Order M192, but is restricted to meetings held by ZOOM webinar under M192. Thus, Staff recommend that a new policy, applicable to electronic and hybrid meetings held pursuant to Bill 10, be drafted to provide additional details not included in the amendment to Council Procedures Bylaw No. 788, 2015.

### ***Technology Considerations***

The Village does not currently have the video conferencing hardware to facilitate hybrid meetings in a manner that would ensure a consistent, unified experience for all participants. Furthermore, the shape and size of Council Chambers are not conducive to satisfactory audio and video recording.

Staff have tested the hybrid meeting format using existing technology including laptops in Council Chambers and have found the arrangement to be cumbersome to implement and marginally satisfactory. Acceptable audio and video broadcasting and recording can be achieved if each participant joins the meeting through the ZOOM application on a personal device and disconnects the personal audio feed. This enables video feed for each participant while avoiding the feedback that results from multiple audio devices in one room. One laptop with audio connected provides adequate audio feed for participants and attendees in Council Chambers, provided background noise is not excessive.

Disadvantages of this arrangement include the inability of ZOOM to recognize the individual speaker, as all speakers use the same microphone; variable audio quality depending on the relative positions of the microphone and the speaker; the screech of audio interference if someone in the room neglects to disconnect their personal audio; and the need for each meeting participant to join the meeting through ZOOM on their personal laptop, making it more cumbersome to simultaneously view the agenda and other files on the laptop. As well, if Council, Staff, and the public are in attendance in the room, everyone will be required to wear a mask which could result in further difficulty in hearing speakers talk. Staff would like to emphasize that this is a short-term solution only, and that hardware upgrades would be necessary to ensure that hybrid meetings meet the requirements of accessibility, transparency, and accountability, and enhance the user experience for remote and in-person participants and attendees.

Staff have consulted with the Squamish-Lillooet Regional District (SLRD) regarding the video conferencing system installed in the SLRD Boardroom and have inquired regarding the possibility of the Village renting the boardroom for Council meetings. The system installed in the SLRD boardroom includes a 360-degree Owl camera with multiple built-in speakers and microphones as well as a ceiling mounted camera and microphone unit. Meeting participants do not need to join the meeting through their personal devices, and instead may use these to access the agenda and files during the meeting. Screen sharing is facilitated through USB connections to the system, and remote participants join the meeting through their personal devices. Unfortunately, renting the space is not an option at this time, but implementing a similar video conferencing system in Council Chambers may be a consideration, depending on budget constraints.

To guide the discussion, three options are presented below:

#### **Option One: Return to pre-COVID-19 in-person meetings:**

- Council Procedures Bylaw No. 788, 2015, would not be amended.



- Staff, elected officials, media, and the public would attend meetings in person.
- Subject to the restrictions of Council Procedures Bylaw No. 788, 2021, **up to two Council members who are unable to attend in person, but not the presiding member**, would be permitted to attend electronically, no more than four times in a calendar year. Remote attendance would be by telephone, as was the case prior to COVID-19, but could be adjusted subject to new technology being installed in Council Chambers.
- Under current public health orders, in-person meeting attendees, participants, and members of the public would be required to wear masks when anyone other than elected officials and staff is present in Council Chambers (i.e.: public or delegations).
- Meetings would not be live-streamed, recorded or broadcasted online unless technology upgrades are made to facilitate this.

**Option Two: Return to pre-COVID in-person meetings but use ZOOM or a similar video conferencing platform to permit recording & broadcasting of meetings:**

- Council Procedures Bylaw No. 788, 2015, would not be amended but an electronic meeting policy would need to be developed.
- Video conferencing hardware upgrades would be necessary.
- All elected officials and relevant staff would attend in person in Council Chambers and would simultaneously attend through a ZOOM webinar or a similar video conferencing platform by means of video conferencing hardware and software.
- Subject to the restrictions of Council Procedures Bylaw No. 788, 2021, **up to two Council members who are unable to attend in person, but not the presiding member**, would be permitted to attend electronically, no more than four times in a calendar year. Remote attendance would include video and audio feed.
- Other staff, media, delegations, and the public would have the option of participating and attending the meeting remotely using ZOOM (or another similar video conferencing platform) or in person.
- Under current public health orders, in-person meeting attendees, participants, and members of the public would be required to wear masks when anyone other than elected officials and staff is present in Council Chambers (i.e.: public or delegations).
- Meetings would be live-streamed, recorded and broadcasted online.
- The public would have the option of watching and hearing remote participants on the large screen in Council Chambers.

**Option Three: Permit hybrid and fully electronic meetings, subject to conditions determined by Council:**

- Council Procedures Bylaw No. 788, 2015, would be amended to permit electronic meetings.
- An electronic meetings policy would be developed.
- Video conferencing hardware upgrades would be necessary.
- Subject to conditions specified by Council in an amendment to Council Procedures Bylaw No. 788, 2015, and an electronic meetings policy, Council members would have the option of attending a meeting in person or electronically.

- The media, delegations, staff, and the public would have the option of attending a meeting in person or electronically.
- Under current public health orders, in-person meeting attendees, participants, and members of the public would be required to wear masks when anyone other than elected officials and staff is present in Council Chambers (i.e.: public or delegations).
- The public would have the option of watching and hearing meetings on the large screen in Council Chambers.
- To meet the legislated requirements to accommodate the above, an officer (CAO, Corporate Officer or Finance Officer) of the Village would be required to be present in Council Chambers during fully electronic meetings.
- Meetings would be live-streamed, recorded and broadcasted online.

If options two or three are selected, Staff recommend exploring the possibility of moving the meetings out of the existing Council Chambers. As noted above, the room is small and attempts to accommodate the hybrid meeting format have not been very successful in test runs. A portable trailer located at Municipal Hall, outfitted with the appropriate technology to facilitate in-person, electronic, and hybrid meeting formats, may be a viable solution that would permit the Village to continue to live-stream and record meetings, providing greater opportunities for the public to attend and participate in meetings. This would have the added benefit of alleviating the space challenges we are facing as we bring Staff back to the workplace after a year and a half of working remotely.

Should the Committee wish to pursue this option, Staff would work with an audio-visual provider to ensure that the selected video conferencing hardware meets the Village's needs, is comfortable for those in attendance both in person and electronically, is easy to use, and enhances the meeting experience for all.

### **COMMUNICATIONS**

This issue does not require a communications element at this stage. However, an amendment to Council Procedures Bylaw No. 788, 2015, will trigger the need for notice to the public. Should the Committee recommend to Council that an amendment be considered, Staff will ensure that notification to the public is provided in accordance with section 124 of the *Community Charter*.

### **LEGAL CONSIDERATIONS**

*Bill 10, Municipal Affairs Statutes Amendments Act*, extends to Council the authority to allow, by bylaw, Council and Council Committee meetings to be held by electronic means, effective September 29, 2021.

### **IMPACT ON BUDGET & STAFFING**

The costs associated with establishing facilities for hybrid and electronic meetings have not been confirmed. However, these costs may be eligible to be covered by funds remaining from the Village's COVID-19 Restart Grant.

## **INTERDEPARTMENTAL IMPACT & APPROVAL**

Interdepartmental Approval by:	Nikki Gilmore, Chief Administrative Officer
--------------------------------	---

## **IMPACT ON THE REGION OR NEIGHBOURING JURISDICTIONS**

This initiative will have no impact on the region or on neighbouring jurisdictions.

## **ALTERNATIVE OPTIONS**

**Option 1: THAT** the Committee provides input to Staff regarding an amendment to Council Procedures Bylaw No. 788, 2015, that would permit council, committee, and commission meetings to be held electronically pursuant to *Bill 10, Municipal Affairs Statutes Amendments Act*.

**Option 2: THAT** the Committee directs Staff not to pursue an amendment to Council Procedures Bylaw No. 788, 2015, and that council, committee, and commission meetings be held in accordance with the existing bylaw.

## **RECOMMENDATIONS**

**Recommendation 1: THAT** the Committee of the Whole provides direction regarding facilitating electronic and hybrid meetings after September 28, 2021.

**Recommendation 2: THAT** the Committee of the Whole provides comment on amending Council Procedures Bylaw No. 788, 2015, to permit electronic council, committee, and commission meetings to be held electronically subject to specified conditions.

**Recommendation 3: THAT** the Committee of the Whole recommends to Council that Staff be directed to draft an amendment to Council Procedures Bylaw No. 788, 2015, to permit electronic attendance at council, committee, and commission meetings for review at a future Committee of the Whole Meeting (or we could put a set date);

**Recommendation 4: THAT** the Committee of the Whole recommends to Council that Staff be directed to present at a future meeting of Council recommendations for meeting space along with suitable hardware and software for the facilitation of electronic meetings.

## **ATTACHMENTS:**

**Appendix A:** Village of Pemberton Council Procedures Bylaw No. 788, 2015, Consolidated November 2020, proposed changes shown in red.

**Appendix B:** *Guidance for Adapting to the New Electronic Meetings Framework*, published by the Ministry of Municipal Affairs, Governance and Structure Branch, Local Government Division

**Appendix C:** Questions for Consideration

**Appendix D:** Video Recording and Broadcasting Policy COU-11

Prepared by:	Gwendolyn Kennedy, Legislative Assistant
Manager Approval:	Sheena Fraser, Manager, Corporate & Legislative Services
CAO Approval by:	Nikki Gilmore, Chief Administrative Officer

Committee of the Whole

# VILLAGE OF PEMBERTON COUNCIL PROCEDURE BYLAW NO. 788, 2015

**Fourth & Final Readings  
July 7, 2015**



**OFFICE CONSOLIDATION: November 5, 2020**

This document is an office consolidation of the Village of Pemberton Council Procedure Bylaw No. 788, 2015 (adopted July 7, 2015) and subsequent amendments adopted by Village Council as noted on the next page.

All persons making use of this consolidation are reminded that it has no Council sanction, that amendments have been incorporated only for convenience of reference, and that for all purposes of interpretation and application that original bylaw should be consulted.

The Village of Pemberton will, in no event, be liable or responsible for damages of any kind arising out the use of this consolidation.

This is not the official version of the Village of Pemberton Council Procedure Bylaw No. 788, 2015, nor is it admissible in a court of law. For such purposes, official certified copies can be obtained from the Village Office or by contacting us at: [admin@pemberton.ca](mailto:admin@pemberton.ca).

## List of Amending Bylaws

<b>Bylaw No</b>	<b>Section Amendment</b>	<b>Council Meeting</b>	<b>Date</b>
Village of Pemberton Council Amendment (Section 31) Bylaw No. 864, 2019	Section 31 – Reconsideration by Council Member	Regular Council Meeting No. 1494	June 11, 2019
Council Procedure Amendment (Electronic Participation) Bylaw No. 875, 2020	Section 10 – addition of sub-clause (h)	Special Council Meeting No. 1511	March 31, 2020
Council Procedure Amendment (Order of Proceedings) Bylaw No. 888, 2020	Sections 6, 13, 22, 26, 31 – numbering corrections Section 10 (h) – clarification that electronic participation deemed present Section 18 – Order of Proceedings Adjustment	Regular Council Meeting No. 1526	November 3, 2020

## Village of Pemberton

### BYLAW No. 788, 2015

---

A bylaw to repeal and replace the Village of Pemberton Council Procedure Bylaw No. 656, 2011 and its amendments, Bylaw No. 687, 2012 and Bylaw No. 737, 2013.

---

**WHEREAS** the Council of the Village of Pemberton must by bylaw regulate Council meetings and their conduct, and must by bylaw provide for the procedure that is to be followed in passing bylaws, pursuant to Section 124 (1) of the *Community Charter*.

**THEREFORE BE IT RESOLVED** that the Municipal Council of the Village of Pemberton enacts a Procedure Bylaw as follows:

#### TABLE OF CONTENTS

##### **PART 1 - INTRODUCTION**

1. Title
2. Table of Contents
3. Definitions
4. Application of Rules of Procedures

##### **PART 2 – COUNCIL MEETINGS**

5. Inaugural Meeting
6. Dates, Times and Locations of Meetings
7. Notice of Regular Council Meetings
8. Notice of Special Meetings
9. Confidential Matters
10. Electronic Participation at Meetings (Amended 2020)

##### **PART 3 – DESIGNATION OF MEMBER TO ACT IN PLACE OF MAYOR**

11. Appointment of Acting Mayor

##### **PART 4 – COUNCIL PROCEEDINGS**

12. Attendance of Public at Meetings
13. Minutes of Meetings to Be Maintained and Available to Public
14. Release of In Camera (Closed) Meeting Items
15. Calling Meeting to Order
16. Adjourning Meeting Where No Quorum
17. Agenda
18. Order of Proceedings and Business
19. Late Business
20. Notice of Motion
21. Petitions and Correspondence

22. Voting at Meetings
23. Delegations
24. Points of Order
25. Conduct and Debate
26. Motions Generally
27. Motions to Commit
28. Motion for the Main Question
29. Amendments Generally
30. Reconsideration by Mayor
31. Reconsideration by Council Member (Amended 2019)
32. Adjournment

#### **PART 5 - BYLAWS**

33. Copies of Proposed Bylaws to Council Members
34. Form of Bylaws
35. Reading and Adopting Bylaws
36. Bylaws Must Be Signed

#### **PART 6 - RESOLUTIONS**

37. Copies of Resolutions to Council Members

#### **PART 7 – COMMITTEE OF THE WHOLE**

38. Notice for COTW
39. Minutes of COTW to Be Maintained and Available to the Public
40. Presiding Members of COTW Meetings and Quorum
41. Points of Order at Meetings
42. Conduct of Debate
43. Voting at Meetings
44. Adjournment

#### **PART 8 - COMMITTEES**

45. Duties of Standing Committees
46. Duties of Select Committees
47. Ratification of Committee Resolutions by Council
48. Notice of Committee Meetings
49. Minutes of Committee Meetings to Be Maintained and Available to Public
50. Quorum
51. Conduct and Debate
52. Voting at Meetings

#### **PART 9 - COMMISSIONS**

53. Commission Meeting Conduct

#### **PART 10 - GENERAL**

54. Validity of the Bylaw
55. Repeal



## PART 1 – INTRODUCTION

### 1. Title

This Bylaw may be cited as the “**COUNCIL PROCEDURE BYLAW NO. 788, 2015**”.

### 2. Table of Contents

The table of contents is for convenience of reference only, and is not for use in interpreting or enforcing this Bylaw.

### 3. Definitions

“**Chief Administrative Officer**” means the Chief Administrative Officer for the Village;

“**Chair**” means the Mayor, Acting Mayor or other Member who is chairing a meeting;

“**Commission**” means a municipal commission established under s. 143 of the *Community Charter*;

“**Committee**” means a standing, select, or other committee of Council established under s. 141 and 142 of the *Community Charter*;

“**Committee of the Whole**” means a committee comprised of all Council Members of the Village of Pemberton to consider and recommend to Council on matters of the Village’s business. The Committee sits in a deliberative rather than a legislative capacity, for informal debate and preliminary consideration of matters awaiting action;

“**Corporate Officer**” means the municipal officer assigned responsibility under section 148 [*corporate officer*];

“**Council**” means the council of the Village of Pemberton;

“**Councillor**” means a member of a council other than the mayor;

“**Council Chambers**” means the premises located at 1350 Aster Street, Pemberton, B.C. or the Village Office, 7400 Prospect Street;

“**Delegation**” means an individual or group who wishes to bring information to Council or committee or other advisory body on a topic specified on a Request to Appear as a Delegation Form;

“**Inaugural Meeting**” means the first meeting of the newly elected Council at which the members elected at the most recent general local election are sworn in or are meeting for the first time after the swearing in ceremony;

**“In Camera”** means a meeting of the Village of Pemberton Council, committees or commissions which is closed to the public pursuant to the provisions of s. 90 of the *Community Charter*;

**“Mayor”** means the Mayor of the Village of Pemberton;

**“Public Notice Posting Places”** means the notice board at the Village Office at 7400 Prospect Street, the Post Office at 7431 Prospect Street and on the Village Web Site;

**“Special Council Meeting”** means a meeting of the Council other than a Regular or Inaugural Meeting.

**“Swearing In Ceremony”** means the event at which the newly elected members of Council take the oath of office. This could take place at the Inaugural Meeting or at a different time and place prior to the Inaugural meeting of Council.

**“Village”** means the Village of Pemberton;

**“Village Office”** means the premises located at 7400 Prospect Street, Pemberton, B.C.;

**“Village Web Site”** means the information resource found at an internet address provided by the Village.

#### **4. Application of Rules of Procedure**

- a) The provisions of this Bylaw govern the proceedings of Council, and all standing, select committees and commissions of Council, as applicable.
- b) In cases not provided for under this Bylaw, the then most current edition of Robert's Rules of Order applies to the proceedings of Council, committees and commissions to the extent that those Rules are:
  - i) applicable in the circumstances, and
  - ii) consistent with provisions of this Bylaw or the *Community Charter*.

### **PART 2 – COUNCIL MEETINGS**

#### **5. Inaugural Meeting**

- a) Following a general local election the first Council meeting must be held on the first Tuesday of November.

- b) If a quorum of council members elected at the general local election has not taken office by the date of the meeting referred to in section 4 (a), the first Council meeting must be called by the Corporate Officer and held as soon as reasonably possible after a quorum has taken office.

## 6. Dates, Times and Locations of Meetings

- a) All Council meetings must take place at the Council Chambers within the Village except when Council resolves to hold meetings elsewhere.
- b) Regular Council meetings must:
  - i) be held on Tuesdays the dates and times shall be established by Council resolution before December 15th of each year for the subsequent year;
  - ii) be adjourned no later than three (3) hours after being called to order unless Council resolves to proceed beyond that time in accordance with section 32; (section number correction Amended BL 888, 2020)
  - iii) notwithstanding clause (b) (i) above, there shall not be a meeting during the month of August unless Council otherwise resolves.
- c) Regular Council meetings may:
  - i) be cancelled or postponed to a different day, time and place by Council by resolution, provided that two consecutive meetings are not cancelled; and
  - ii) be postponed to a different day, time and place by the Mayor, provided the Corporate Officer is given at least two (2) days' written notice.
- d) In Camera (Closed) Council meetings may:
  - i) be held on the same day as the Regular Council Meeting as established in section 6 (b) (i).
- e) Special Meetings, being a meeting other than a statutory, regular or adjourned meeting, may:
  - i) be called by Council at a Regular meeting of Council;
  - ii) be called by the Mayor at his or her discretion at any time;

- iii) be requested by two or more Council Members, in writing to the Mayor, Chief Administrative Officer and Corporate Officer. If the Mayor or Acting Mayor is absent or unable to act, or for any reason neither have arranged within twenty-four (24) hours after receiving a request under this section then two (2) or more members of Council may themselves call for a Special Meeting to be held within the next seven (7) days.

## **7. Notice of Regular Council Meetings**

- a) In accordance with section 127 of the *Community Charter*, Council must prepare annually on or before January 1 each year, a schedule of the dates, times and places of Regular Council meetings and must make the schedule available to the public by posting it at the Public Notice Posting Places.
- b) In accordance with section 127 of the *Community Charter*, Council must give notice annually on or before January 1 of the time and duration that the schedule of Regular Council meetings will be available beginning on that date in accordance with section 94 of the *Community Charter*.
- c) If revisions are necessary to the annual schedule of the Regular Council meetings, the Corporate Officer must, as soon as possible, post a notice at the Public Notice Posting Places and publish in the newspaper to indicate any revisions to the date, time, duration and place of, or cancellation of, a Regular Council Meeting.

## **8. Notice of Special Meetings**

- a) Except where notice of a special meeting is waived by unanimous vote of all council members under section 127(4) of the *Community Charter*, a notice of the date, hour, and place of a Special Council meeting must be given at least twenty-four (24) hours before the time of meeting, by:
  - i) posting a copy of the notice at the Public Notice Posting Places, and
  - ii) providing the notice and the agenda electronically by email as well as providing a copy of both for each Council member in the Council member's mailbox at the Village Office as requested.
- b) The notice under section 7 (a) must describe in general terms the purpose of the meeting and be signed by the Mayor or the Corporate Officer.
- c) Notice of any Meeting called under Section 5 (e) (ii) will be signed by the Members calling the Meeting, or by the Corporate Officer in place of the Mayor.

## 9. Confidential Matters

- a) As stated in the *Community Charter*, matters deemed to be of a confidential nature in accordance with the provisions of section 90 may be considered in a meeting closed to the public (In Camera).

## 10. Electronic Participation at Meetings

- a) Provided that all of the conditions set out in section 128 (2) of the *Community Charter* are met, and subject to section 9 (b), a member of council or of a council committee or commission, other than the presiding member, who is unable to attend at any council, committee, commission or special meeting, as applicable, may participate in the meeting by means of electronic or other communications facilities.
- b) As a limit on section 9 (a), no more than two (2) members of Council, committee or commission may participate at any one meeting by way of electronic or other communications facilities.
- c) In instances where the Mayor will participate in a meeting electronically, the Council member designated to act in place of the Mayor shall preside.
- d) In absence of the Mayor and the Council member designated to act in the place of the Mayor the member present shall elect from among themselves a presiding member for that meeting;
- e) Where a meetings is held under this section the facilities must enable the public to hear, or see and hear, the participation of the member or members participating electronically unless the meeting is closed pursuant to section 90 of the *Community Charter*;
- f) Members of Council who are participating in a meeting under this section are deemed to be present at the meeting;
- g) Council members may not attend by electronic means more than a maximum of four (4) meetings as identified in this section per calendar year.
- h) Despite (b) and (c) above, in the event of a health, environmental or safety emergency, where it is not possible to have a quorum or the Mayor or Acting Mayor physically present for a meeting, all or any portion of the members may participate in a Council, committee, commission or special meeting by means of electronic or other communication facilities, and are deemed to be present at the meeting (**Amendment BL 888, 2020**), so long as they comply with the remaining requirements of this Section. (**Amendment Bylaw No. 875, 2020**)

## **PART 3 - DESIGNATION OF MEMBER TO ACT IN PLACE OF MAYOR**

### **11. Appointment of Acting Mayor**

- a) Annually by December, Council must from amongst its members designate Councillors to serve on a rotating basis as the member responsible for acting in the place of the Mayor when the Mayor is absent or otherwise unable to act or when the office of the Mayor is vacant for the subsequent year.
- b) Each Councillor designated under section 10 (a) must fulfill the responsibilities of the Mayor in his or her absence.
- c) If both the Mayor and the member designated under section 10 (a) are absent from the Council meeting, the Council members present must choose a Councillor to preside at the Council meeting pursuant to section 14 (b).
- d) The member designated under section 10 (a) or chosen under section 10 (c) has the same powers and duties as the Mayor in relation to the applicable matter.

## **PART 4 – COUNCIL MEETING PROCEEDINGS**

### **12. Attendance of Public at Meetings**

- a) Except where the provisions of section 90 of the *Community Charter [meetings that may or must be closed to the public]* apply, all Council meetings must be open to the public.
- b) Before closing a Council meeting or part of a Council meeting to the public, Council must pass a resolution in a public meeting in accordance with section 92 of the *Community Charter [requirements before Council meeting is closed]*.
- c) This section applies to all meetings of the bodies referred to in section 93 of the *Community Charter*, including without limitation:
  - i) Committee of the Whole
  - ii) Standing and Select Committees,
  - iii) Parcel Tax Review Panel,
  - iv) Board of Variance,
  - v) Advisory bodies as established by Council.
- d) Despite section 11(a), the Mayor or the Councillor designated as the member responsible for acting in the place of the Mayor under

section 10 may expel or exclude from a Council meeting a person in accordance with section 24 (h).

### **13. Minutes of Meetings to Be Maintained and Available to Public**

- a) Minutes of the proceedings of Council and its Committees and Commissions must be:
  - i) legibly recorded,
  - ii) certified as correct by the Corporate Officer or designate, and
  - iii) signed by the Mayor or other member presiding after adoption of the minutes.
- b) Minutes of the proceedings of Council and its committees and commissions shall record:
  - i) The place, date and time of meeting;
  - ii) The names of the Presiding Member or members and record of the attendance of members;
  - iii) Motions of the meeting without note or comment.
- c) With exception to the Mayor and Councillor reports only the motions and actions of Council (action minutes) will be recorded.
- d) Subject to section 13 (e) (**Amended BL 888,2020**), and in accordance with section 97(1) (b) of the *Community Charter*, minutes of the proceedings of Council must be open for public inspection at the Village Office during its regular office hours.
- e) Section 13 (d) (**Amended BL 888, 2020**) does not apply to minutes of a Council meeting or that part of a Council meeting from which persons were excluded under section 90 of the *Community Charter*.

### **14. Release of In Camera (Closed) Meeting Items**

- a) At the first Regular Meeting of Council after a Closed Meeting, the Mayor shall announce the decisions made in the Closed Meeting that Council has determined by resolution are no longer confidential matters, and that this include which Councillors declared conflict in a closed matter when brought forward to the public.
- b) Biannually, the Corporate Officer shall bring to the attention of the Council those items that were dealt with in a Closed Meeting and have not been released for public information, and Council shall then determine by resolution which items are no longer confidential

matters and announce the decisions at the next Regular Meeting of Council.

### **15. Calling Meeting to Order**

- a) As soon after the time specified for a Council meeting as there is a quorum present, the Mayor, if present, must take the Chair and call the Council meeting to order, however, where the Mayor is absent, the Councillor designated as the member responsible for acting in the place of the Mayor in accordance with section 10 must take the Chair and call such meeting to order.
- b) If a quorum of Council is present but the Mayor or the Councillor designated as the member responsible for acting in the place of the Mayor under section 10 do not attend within twenty (20) minutes of the scheduled time for a Council meeting:
  - i) the Corporate Officer must call to order the members present, and
  - ii) the members present must choose a member to preside at the meeting.

### **16. Adjourning Meeting Where No Quorum**

- a) If there is no quorum of Council present within twenty (20) minutes of the scheduled time for a Council meeting, the Corporate Officer or designate must:
  - i) record the names of the members present, and those absent, and
  - ii) adjourn the meeting until the next scheduled meeting.

### **17. Agenda**

- a) Prior to each Regular Council meeting, the Corporate Officer must prepare an Agenda setting out all the items for consideration at that meeting.
- b) The Corporate Officer must make the agenda available to the members of Council on the Friday afternoon prior to the meeting.
- c) The Corporate Officer must make the agenda available to the members of the public no later than the Friday afternoon prior to the meeting.
- d) Council must not consider any matters not listed on the Agenda unless a new matter for consideration is properly introduced and approved as a late item of business pursuant to section 18.



- e) Materials relating to late items of business presented at a Regular Council meeting shall be distributed to the Corporate Officer, Chief Administrative Officer, Recording Secretary and all senior staff in attendance.

## 18. Order of Proceedings and Business

- a) The agenda for all regular Council meetings contains the following matters in the order in which they are listed below (**Amended BL 888, 2020**):
  - i) Call to Order
  - ii) Approval of Agenda
  - iii) Rise with Report from In Camera (Closed) [*If applicable*]
  - iv) Adoption of Minutes
  - v) Business Arising from the Minutes
    - (1) Regular Meeting
    - (2) Committee of the Whole
  - vi) Committee Minutes – for Information
  - vii) Delegations – requests to address Council
  - viii) Staff Reports
  - ix) Bylaws
    - (1) First and second Reading
    - (2) First, Second and Third Reading
    - (3) Third Reading
    - (4) Adoption
  - x) Mayor’s Report
  - xi) Councillor Reports
  - xii) Correspondence
    - (1) For action
    - (2) For information
  - xiii) Decision on Late Business
  - xiv) Late Business
  - xv) Notice of Motion

xvi) Question Period

xvii) Adjournment

- b) Particular business at a Council meeting must in all cases be taken up in the order in which it is listed on the agenda unless otherwise resolved by Council.

## **19. Late Business**

- a) An item of business not included on the Agenda must not be considered at a Council meeting unless introduction of the late business is approved by Council at the time allocated on the Agenda for such matters.
- b) If the Council makes a resolution under section 18 (a) to deal with a matter at the same meeting it is introduced, information pertaining to the late business must be distributed to the members.

## **20. Notice of Motion**

- a) Any Council member may give a “Notice of Motion” respecting an item which he or she intends to present by giving a copy of such motion to the Corporate Officer during a meeting of Council.
- b) Upon the member being acknowledged by the Chair and the Notice of Motion being read to the meeting, such motion shall appear in the minutes of that meeting as a Notice of Motion and must be placed on the agenda of the next Regular Council Meeting or other future meeting designated by the member bringing forward the Notice of Motion for consideration.

## **21. Petitions and Correspondence**

- a) Petitions and correspondence, presented to Council must be legibly written or printed, signed and contain a return address and telephone number.
- b) Unsigned email correspondence will be accepted if it contains the name of the author, return mailing and civic address, and telephone number. All communication presented to Council will be subject to *Freedom of Information and Protection of Privacy Act*.
- c) Every petition or correspondence for a Council meeting must be delivered to the Corporate Officer by 12 noon on the Wednesday prior to a regular meeting.

## 22. Voting at Meetings

- a) The following procedures apply to voting at Council meetings:
  - i) when debate on a matter is closed the presiding member must put the matter to a vote of Council members;
  - ii) when the Council is ready to vote, the presiding member must put the matter to a vote by stating:

"Those in favour raise your hands." and then "Those opposed raise your hands."
  - iii) when the presiding member is putting the matter to a vote under section 22 (Amended BL888, 2020) (a) (i) and (ii) a member must not:
    - (1) leave the room;
    - (2) make a noise or other disturbance; or
    - (3) interrupt the voting procedure under section 21 (a) (ii) unless the interrupting member is raising a point of order.
  - iv) after the presiding member finally puts the question to a vote under section 22 (Amended BL 888, 2020) (a) (ii), a member must not speak to the question or make a motion concerning it;
  - v) the presiding member's decision about whether a question has been finally put is conclusive;
  - vi) whenever a vote of Council on a matter is taken, each member present shall signify their vote by raising their hand;
  - vii) Should any member refrain from voting when any question is put, the member shall be regarded as having voted in the affirmative and the members vote shall be counted accordingly;
  - viii) if a vote is not unanimously in favour the presiding member must ask the opposing member if they wish their vote and name to be recorded in opposition and the recording secretary will be so instructed;
  - ix) the presiding member must declare the result of the voting by stating that the question is decided in either the affirmative or the negative.

## 23. Delegations

- a) Persons or groups of persons wishing to appear as a delegation before Council shall advise the Corporate Officer in writing by noon on the seventh (7) day prior to the date of the meeting.
- b) Requests to appear as a delegation before Council must include the name, address and telephone number of the person who wishes to speak on behalf of the delegation and the purpose of the presentation that will form part of the presentation must be provided at the time of the application.
- c) Each address must be limited to ten (10) minutes with a question period of five (5) minutes for a total of fifteen (15) minutes unless a longer period is agreed to by unanimous vote of those members present.
- d) Where written application has not been received by the Corporate Officer as prescribed in section 22 (a), an individual or delegation may address the meeting if approved by the majority vote of the members present.
- e) Council must not permit a delegation to address a meeting of the Council regarding a bylaw in respect of which a public hearing has been held, where the public hearing is required under an enactment as a pre-requisite to the adoption of the bylaw.
- f) The Corporate Officer may schedule a maximum of two (2) delegations to any Council meeting. Delegations shall be placed on the agenda on a first come basis.
- g) The Corporate Officer may schedule delegations to another Council meeting, a committee or advisory body or ask staff to address the delegate's issue as deemed appropriate according to the subject matter of the delegation.
- h) The Corporate Officer may decline to place a delegation on the agenda if the issue is not considered to fall within the jurisdiction of Council. If the delegation wishes to appeal the Corporate Officer's decision, the information must be distributed under separate cover to Council for their consideration.
- i) Council shall not act on a request from a delegation until the next regular meeting, unless consent by two-thirds vote of Council present is given to consider the matter following the delegation presentation.
- j) A delegate may not speak on an issue that is the subject of a staff report not yet presented to a Council meeting.

## 24. Points of Order

- a) Without limiting the presiding member's duty under section 132(1) of the *Community Charter*, the presiding member must apply the correct procedure to a motion:
  - i) if the motion is contrary to the rules of procedure in this bylaw, and
  - ii) whether or not another Council member has raised a point of order in connection with the motion.
- b) When the presiding member is required to decide a point of order:
  - i) the presiding member must cite the applicable rule or authority if requested by another Council member,
  - ii) another member must not question or comment on the rule or authority cited by the presiding member under section 23 (b) (i), and
  - iii) the presiding member may reserve the decision until the next Council meeting.

## 25. Conduct and Debate

- a) A Council member may speak to a question or motion at a Council meeting only if that member first addresses the presiding member.
- b) Members must address the presiding member by that person's title of Mayor, Acting Mayor or Councillor.
- c) Members must address other non-presiding members by the title Councillor.
- d) No member must interrupt a member who is speaking except to raise a point of order.
- e) If more than one member speaks the presiding member must call on the member who, in the presiding member's opinion, first spoke.
- f) Members who are called to order by the presiding member:
  - i) must immediately stop speaking,
  - ii) may explain their position on the point of order, and
  - iii) may appeal to Council for its decision on the point of order in accordance with section 132 of the *Community Charter*.
- g) Members speaking at a Council meeting:

- i) must use respectful language,
  - ii) must not use offensive gestures or signs,
  - iii) must speak only in connection with the matter being debated,
  - iv) may speak about a vote of Council only for the purpose of making a motion that the vote be rescinded, and
  - v) must adhere to the rules of procedure established under this Bylaw and to the decisions of the presiding member and Council in connection with the rules and points of order.
- h) If a member does not adhere to section 24 (g), the presiding member may order the member to leave the member's seat, and
- i) if the member refuses to leave, the presiding member may cause the member to be removed by a peace officer from the member's seat, and
  - ii) if the member apologizes to the Council, Council may, by resolution, allow the member to retake the member's seat.
- i) A member may require the question being debated at a Council meeting to be read at any time during the debate if that does not interrupt another member who is speaking.
- j) The following rules apply to limit speech on matters being considered at a Council meeting:
- i) a member may speak more than once in connection with the same question only:
    - (1) with the permission of Council, or
    - (2) if the member is explaining a material part of a previous speech without introducing a new matter;
  - ii) a member who has made a substantive motion to the Council may reply to the debate;
  - iii) a member may speak to a question, or may speak in reply, for longer than a total time of ten (10) minutes only with the permission of Council.

## **26. Motions Generally**

- a) Council may debate and vote on a motion only if it is first made by one Council member and then seconded by another.

- b) A Council member may make only the following motions, when the Council is considering a question:
  - i) to refer to committee;
  - ii) to amend;
  - iii) to lay on the table;
  - iv) to postpone indefinitely;
  - v) to postpone to a certain time;
  - vi) to move the previous question, or the question;
  - vii) to adjourn.
- c) A motion made under section 26 (Amended BL888, 2020) (b) (iii) to (vii) is not amendable or debatable.
- d) Council must vote separately on each distinct part of a question that is under consideration at a Council meeting if requested by a Council member.

## **27. Motion to Commit**

- a) Until it is decided, a motion made at a Council meeting to refer to a committee precludes an amendment of the main question.

## **28. Motion for the Main Question**

- a) In this section, "main question", in relation to a matter, means the motion that first brings the matter before the Council.
- b) At a Council meeting, the following rules apply to a motion for the main question, or for the main question as amended:
  - i) if a member of Council moves to put the main question, or the main question as amended, to a vote, that motion must be dealt with before any other amendments are made to the motion on the main question; and
  - ii) if the motion for the main question, or for the main question as amended, is decided in the negative, the Council may again debate the question, or proceed to other business.

## **29. Amendments Generally**

- a) Council member may, without notice, move to amend a motion that is being considered at a Council meeting.

- b) An amendment may propose removing, substituting for, or adding to the words of an original motion.
- c) A proposed amendment must be reproduced in writing by the mover if requested by the presiding member.
- d) A proposed amendment must be decided or withdrawn before the motion being considered is put to a vote unless there is a call for the main question.
- e) An amendment may be amended once only.
- f) An amendment that has been negated by a vote of Council cannot be proposed again.
- g) A Council member may propose an amendment to an adopted amendment.
- h) The presiding member must put the main question and its amendments in the following order for the vote of Council:
  - i) a motion to amend a motion amending the main question;
  - ii) a motion to amend the main question, or an amended motion amending the main question if the vote under section 28 (h) (i) is positive;
  - iii) the main question.

### **30. Reconsideration by Mayor**

- a) In accordance with section 131 of the *Community Charter*, the Mayor may at the same council meeting as the vote took place or at any time within thirty (30) days after the adoption or rejection of any bylaw, resolution or proceeding, return same for consideration by Council subject to the following:
  - i) it has not had the approval or assent of the electors and been adopted,
  - ii) it has not already been reconsidered by Council; and
  - iii) it has not been acted upon by any Officer, employee or Agent of the Village.
- b) In returning matters for council's reconsideration the Mayor may state the reasons or objections, which will be recorded in the minutes. Council shall as soon thereafter as convenient, consider the reasons or objections and either;



- i) reaffirm the Bylaw, resolution or proceedings; or
  - ii) reject the bylaw, resolution or proceedings.
- c) Bylaws and resolutions that are rejected after reconsideration are deemed to be absolutely vetoed, rescinded and repealed, and are of no force or effect whatsoever, and shall not be reintroduced for a period of six (6) months except with the unanimous consent of Council.
- d) A bylaw, resolution, or proceeding that is reaffirmed under section 131 of the *Community Charter* is as valid and has the same effect as it had before reconsideration

**31. Reconsideration by Council Member (Amendment Bylaw No. 864, 2019)**

- a) Subject to subsection d) a Council Member who voted with the majority either for or against a motion, may at the next Council Meeting introduce a motion;
  - i. to reconsider a matter on which a vote, other than to postpone indefinitely, has been taken, and
  - ii. to reconsider an adopted bylaw after an interval of at least twenty-four (24) hours following its adoption.
- b) Council must not discuss the main matter referred to in subsection a) unless a motion to reconsider that matter is adopted by an affirmative vote of Council.
- c) A vote to reconsider must not be reconsidered.
- d) Council may only reconsider a matter that has not:
  - i. had the approval or assent of the electors and been adopted;
  - ii. been reconsidered under subsection (1) of section 131 of the Community Charter [Mayor may require council reconsideration of a matter]; or
  - iii. been acted on by an officer, employee or agent of the Municipality.
- e) A motion under subsection a) must be introduced in compliance with section 19 (Late Business).
- f) If a motion to reconsider is defeated, the subject matter of the resolution or proceeding may not be open for consideration by the Council within six months except by way of a new and substantially different motion.

- g) A bylaw, resolution, or proceeding that is reaffirmed under section 31 (a) is deemed as valid and has the same effect as it had before reconsideration.
- h) Bylaws or resolutions that are rejected after reconsideration under section 31 (Amended BL888, 2020) (a) are deemed to be absolutely vetoed, rescinded and repealed, and are of no force or effect whatsoever, and shall not be reintroduced for a period of six (6) months except with the unanimous consent of Council.

### **32. Adjournment**

- a) Council may continue a council meeting after three (3) hours only by an affirmative vote.

## **PART 5 – BYLAWS**

### **33. Copies of Proposed Bylaws to Council Members**

- a) A proposed bylaw may be introduced at a Council meeting only if a copy of it has been delivered to each Council member at least twelve (12) hours before the Council meeting, or all Council members unanimously agree to waive this requirement.

### **34. Form of Bylaws**

- a) A bylaw introduced at a council meeting must:
  - i) be printed;
  - ii) have a distinguishing name;
  - iii) have a distinguishing number;
  - iv) contain an introductory state of purpose;
  - v) be divided into sections.

### **35. Reading and Adopting Bylaws**

- a) The presiding member of a Council meeting may:
  - i) have the Corporate Officer read a synopsis of each proposed bylaw, and then;
  - ii) request a motion that the proposed bylaw be read.
- b) The readings of the bylaw may be given by stating its title and object.

- c) A proposed bylaw may be debated and amended at any time during the first three readings unless prohibited by the *Community Charter*.
- d) Subject to section 882 of the *Local Government Act [OCP Adoption Procedures]*, each reading of a proposed bylaw must receive the affirmative vote of a majority of the Council members present.
- e) In accordance with section 135 of the *Community Charter [Requirements for passing bylaws]*, Council may give two or three readings to a proposed bylaw at the same Council meeting.
- f) Despite section 135 (3) of the *Community Charter*, and in accordance with section 890(9) of the *Local Government Act [Public Hearings]*, Council may adopt a proposed official community plan or zoning bylaw at the same meeting at which the plan or bylaw passed third reading.

### **36. Bylaws Must Be Signed**

- a) After a bylaw is adopted, and signed by the Corporate Officer and the presiding member of the Council, the Corporate Officer must have it placed in the Village's records for safekeeping and endorse upon it:
  - i) the Village's Corporate Seal;
  - ii) the dates of its readings and adoption; and
  - iii) the date of Ministerial Approval or Approval of the Electorate as applicable.

## **PART 6 – RESOLUTIONS**

### **37. Copies of Resolutions to Council Members**

- a) A resolution may be introduced at a Council meeting only if a copy of it has been delivered to each Council member at least twelve (12) hours before the Council meeting, or all Council members unanimously agree to waive this requirement.

## **PART 7 – COMMITTEE OF THE WHOLE (COTW)**

### **38. Notice for COTW Meetings**

- a) A notice of the day, hour and place of a COTW meeting must be given at least twenty-four (24) hours before the time of the meeting by:

- i) posting a copy of the notice at the Public Notice Posting Places; and
- ii) providing the notice and agenda electronically by email as well as providing a copy of both for each Council Member in the Council member's mailbox at the Village Office as requested.

### **39. Minutes of COTW Meetings to Be Maintained and Available to Public**

- a) Minutes of the proceedings of COTW must be:
  - i) legibly recorded,
  - ii) certified by the Corporate Officer,
  - iii) signed by the member presiding at the meeting, and
  - iv) open for public inspection in accordance with section 97(1)(c) of the *Community Charter*.

### **40. Presiding Members at COTW Meetings and Quorum**

- a) The Mayor shall preside the COTW if present, however, where the Mayor is absent the Councillor designated as the member responsible for acting in the place of the Mayor in accordance with section 10 must take the Chair and call the meeting to order. The quorum of COTW is the majority of Council members.

### **41. Points of Order at Meetings**

- a) The presiding member must preserve order at a COTW meeting and, subject to an appeal to other members present, decide points of order that may arise.

### **42. Conduct and Debate**

- a) The rules of procedure of the Council shall be observed in the COTW, so far as may be applicable, except that:
  - i) a member may speak any number of times on the same question; and
  - ii) no member shall speak continuously for more than five (5) minutes to a question.

### **43. Voting at Meetings**

- a) Votes at a COTW meeting must be taken by a show of hands if requested by a member.
  - i) the presiding member must declare the results of voting.

#### **44. Adjournment**

- a) When all matters referred to COTW have been considered a motion to terminate and report to Council shall be adopted.

### **PART 8 -- COMMITTEES**

#### **45. Duties of Standing Committees**

- a) Standing committees must consider, inquire into, report, and make recommendations to Council about all of the following matters:
  - i) matters that are related to the general subject indicated by the name of the committee;
  - ii) matters that are assigned by Council;
  - iii) matters that are assigned by the Mayor.
- b) Standing committees report and make recommendations to Council through their minutes.

#### **46. Duties of Select Committees**

- a) Select committees must consider, inquire into, report, and make recommendations to Council about the matters referred to the committee by the Council.
- b) Select committees report and make recommendations to Council through their minutes.

#### **47. Ratification of Committee Resolutions by Council**

- a) All resolutions adopted by a Committee must be presented to Council for ratification except for the following:
  - i) Resolutions referring items to staff;
  - ii) Resolutions deferring an item;
  - iii) Resolutions receiving a report or information; and
  - iv) Defeated resolutions.

#### **48. Notice of Committee Meetings**

- a) Notice and Agenda of committee meetings, including the times, dates and places of the meetings must be given by:

- i) posting a notice of the meeting at the Public Notice Posting Places; and
- ii) providing a copy of the notice and agenda electronically by email to each member of the committee at least twenty-four (24) hours prior to the meeting.

**49. Minutes of Committee Meetings to Be Maintained and Available to Public**

- a) Minutes of the proceedings of a committee must be:
  - i) legibly recorded,
  - ii) certified by the Corporate Officer or his/her designate and the presiding member, and
  - iii) open for public inspection in accordance with section 97(1)(c) of the *Community Charter*.

**50. Quorum**

- a) The quorum for a committee is a majority of all of its members.

**51. Conduct and Debate**

- a) The rules of the Council procedure must be observed during committee meetings, so far as is possible and unless as otherwise provided in this Bylaw.
- b) Council members attending a meeting of a committee, of which they are not a member, may participate in the discussion only with the permission of a majority of the committee members present.

**52. Voting at Meetings**

- a) Council members attending a meeting of a committee of which they are not a member must not vote on a question.
- b) The Mayor is an ex officio member of all Committees and therefore is entitled to vote on any matter before the Committee.

**PART 9 - COMMISSIONS**

**53. Commission Meeting Conduct**

- a) The procedures for governing conduct of Commissions shall be set out within the Commissions establishing bylaw and shall reflect the Council Meeting Proceedings as noted in Part 4 of this Bylaw as amended from time to time.

## **PART 10 – GENERAL**

### **54. Validity of the Bylaw**

- a) If any section, subsection or clause of this bylaw is for any reason held to be invalid by the decision of a court of competent jurisdiction, such decision will not affect the validity of the remaining portions of this bylaw.
- b) This bylaw may not be amended or repealed and substituted unless Council first gives notice in accordance with section 94 of the *Community Charter*.

### **55. Repeal**

- a) Village of Pemberton Council Procedure Bylaw No. 656, 2011 and its amendments, Bylaw No. 687, 2012 and Bylaw No.737, 2013, are hereby repealed.

**NOTICE OF INTENTION TO CONSIDER** Council Procedures Bylaw No. 788, 2015 **WAS PUBLISHED IN THE** Pique Newsmagazine **on June 4th and June 11th.**

**READ A FIRST TIME** this 16<sup>th</sup> day of June, 2015

**READ A SECOND TIME** this 16<sup>th</sup> day of June, 2015

**READ A THIRD TIME** this 16<sup>th</sup> day of June, 2015

**ADOPTED** this 7<sup>th</sup> day of July, 2015

---

Mike Richman  
Mayor

---

Sheena Fraser  
Corporate Officer



# Guidance for Adapting to the New Electronic Meetings Framework

## Introduction

This document provides municipal councils, regional district boards, Islands Trust local trust committees and local government staff with information about the new electronic meetings rules and best practices to consider when amending a procedure bylaw to allow for electronic meetings.

Since June 17, 2020, local governments have been operating under Ministerial Order [M192](#), which allows all meetings and public hearings to be conducted electronically during the COVID-19 pandemic. M192 became part of the [COVID Related Measures Act](#) (CRMA) on July 8, 2020.

### COMMON QUESTIONS: Electronic meetings vs electronic participation

*Electronic meetings*, if authorized by bylaw, are meetings where all members of a council or board may participate electronically (e.g., videoconference, audioconference or telephone).

*Electronic participation*, if authorized by bylaw, allows for a hybrid meeting where some members of a council or a board attend in person, and other members attend by electronic means.

On June 1, 2021, [Bill 10 Municipal Affairs Statutes Amendments Act](#) was passed. Bill 10 includes change to the Community Charter to provide permanent authority for municipalities to choose, by bylaw, whether to conduct regular and committee meetings electronically (in addition to special meetings already authorized under the Charter). These new rules will come into force by regulation on September 29, 2021 after the authority to hold electronic meetings under the CRMA and M192 expires on September 28, 2021.

### Amended Sections of the Community Charter

- Section 128, 128.1, 128.2, 128.3

#### Ministry of Municipal Affairs

Governance and Structure Branch  
Local Government Division

Mailing Address:  
Po Box 9839, STN PROV GOVT  
Victoria, BC V8W 9T1

Phone: 250 387-4020  
Fax: 250 387-7972

Location:  
4th Floor, 800 Johnson Street

[www.gov.bc.ca/muni](http://www.gov.bc.ca/muni)

Village of Pemberton  
Committee of the Whole Meeting No. 218  
Tuesday, September 21, 2021  
160 of 175



Further work will be done to update regulations and align meeting rules to ensure that the new, broader electronic meeting authorities apply to all local governments, including the City of Vancouver, regional districts and the Islands Trust. The intention is that the updated regulations will be brought into force at the same time as the amendments to the Charter and coincide with the expiration of M192 under CMRA. This will allow time for local governments to consider the new authorities and whether to amend their procedure bylaw.

Under the permanent new rules, local governments are not required to adopt electronic meeting provisions in their procedure bylaw if there is no intention to hold electronic meetings. However, local governments are encouraged to proactively consider whether there are circumstances where electronic meetings may be beneficial for the community. The Ministry has heard many local governments express the advantages and enhanced transparency and accessibility that electronic meetings offer their residents. The decision whether to authorize electronic meetings in a procedure bylaw will depend on local circumstances such as:

- Population size;
- Available technology; and
- The needs of the council or board, staff and the public, for example improved accessibility or flexibility.

#### **COMMON QUESTIONS: When can local governments amend their procedure bylaw to allow for electronic regular and committee meetings?**

- The new authorities for electronic regular and committee meetings in the Community Charter will be brought into force by regulation on September 29, 2021 once Ministerial Order [M192](#) and the [COVID Related Measures Act](#) (CRMA) have expired, 90 days after the end of the provincial state of emergency (September 28, 2021).
- Local governments are encouraged to initiate a review of their current procedure bylaw and consider whether any amendments are required to prepare for when the authority to hold electronic meetings under M192 ends.
  - **Local governments must not amend their procedure bylaws until the provincial amendments are brought into force on September 29, 2021.**
  - Local governments can continue to hold electronic meetings and electronic public hearings under the authority of M192.
- Once the amendments are brought into force, local governments can then provide public notice, communicate changes to the public, and begin to do readings of an amended procedure bylaw.

## Electronic Meetings

All local government meetings must be open to the public unless the subject matter falls under the closed meetings provisions in the legislation. The requirement for open meetings is intended to ensure openness, transparency and accountability.

Electronic meetings may be a useful tool for councils and boards in certain circumstances; however, as a best practice, they should not be a substitute for all in-person meetings. Local government electronic meetings should attempt to resemble in-person meetings as much as possible, adhering to rules of procedural fairness and the local government's procedure bylaw.

When brought into force, the new electronic meeting rules will give authority to councils and boards to conduct regular and committee meetings electronically, if authorized in their procedure bylaw. Councils and boards may want to consider under what circumstances to allow electronic meetings in their community, for example, emergency circumstances only or to increase accessibility and create more flexibility.

The legislation continues to provide councils and boards the option to hold special meetings electronically, by bylaw, and to allow some electronic participation of members at meetings (regular, special or committee). Best practices for electronic special meetings and electronic participation can be found in the [Procedure Bylaw Guide: For B.C.'s Local Governments](#).

If a council or board authorizes electronic meetings in the procedure bylaw they should consider additional rules or policies for the conduct of electronic meetings. Some of these rules may be included in the procedure bylaw and others may be more appropriately placed in an electronic meetings policy, technology policy, code of conduct, or public participation policy.

It is at the discretion of local governments to determine procedural rules for other kinds of advisory committees and bodies barring any legislated rules. Although there is no requirement to put procedures

*Regular council and board meetings are regularly scheduled meetings of a council or board as required by the local government legislation*

*A special meeting is a council or board meeting other than a regular or statutory meeting.*

*A council or board committee may be:*

- a select or standing committee that includes council or board members and members of the public appointed to the committee
- any other body established by a council or a board that is composed solely of council or board members.

for electronic meetings for other advisory bodies in the procedure bylaw, as a best practice, local governments are encouraged to align meeting rules to ensure accessibility, openness and transparency for the public also exists for these other types of meetings (e.g., community commissions).

If a council or board wants to allow for electronic regular and committee meetings in emergency situations only, ensure that consideration is given to defining what constitutes an emergency, such as a provincial or local state of emergency. Depending on how the council or board chooses to word the bylaw, the local government may wish to seek legal advice to be certain that there is a common understanding of when the bylaw would allow for electronic regular and committee meetings to be held.

### **COMMON QUESTIONS: Electronic public hearings and the procedure bylaw**

Amendments to the *Local Government Act* will also enable local governments – at their discretion - to hold electronic public hearings. These amendments will also be brought into force at the same time as the amendments for electronic meetings, once M192 is no longer in force.

Procedures for public hearings are not required in a local government procedure bylaw; however, those local governments that have included public hearing procedures in their procedure bylaw are encouraged to review their public hearing procedures and update as necessary to accommodate the new authorities.

## **Amending the Procedure Bylaw to Enable Electronic Meetings**

For detailed information about amending a local government procedure bylaw please see [Procedure Bylaw Guide: For B.C.'s Local Governments \(PDF\)](#). **The procedure bylaw must not be amended until the new electronic meeting rules are in force.**

Local governments will want to proactively consider whether electronic regular and committee meetings are appropriate for their community before making changes to the procedure bylaw. If amendments are planned, local governments are encouraged to consider an opportunity for the public to provide comment and questions on electronic meetings.

Councils and boards may want to use the existing authorities for special electronic meetings and electronic participation (if permitted in the local government procedure bylaw) to assist with the process of amending the procedure bylaw. This may include holding a special electronic meeting to do the readings of the amended procedure bylaw (with some council or board members participating electronically).

### **COMMON QUESTIONS: What to consider before authorizing electronic meetings**

- Do electronic meetings increase accessibility for elected officials and the public?
- Does the council or board want to authorize electronic regular and committee meetings? If yes, under what circumstances?
- Can the legislative requirements for electronic meetings be met (e.g. meeting participants are able to hear, or watch and hear, each other; members of the public may attend a specified place to hear, or watch and hear, the proceedings)?
- Does the procedure bylaw currently authorize electronic special meetings and electronic participation? Are there limits on the number of times or consecutive number of meetings a council or board member can participate electronically? Do these limits apply in emergency scenarios?
- Are there electronic meetings procedures (e.g. procedure bylaw, electronic meetings policy or technology policy) for the chair and staff to follow for electronic meetings?
- Can council or board members participate in both open and closed meetings electronically? If closed meetings are authorized, how is confidentiality being maintained by the participating council or board members?
- Is the technology available reliable? How secure is the wifi used for remote access? Are there plans for new or additional technology to support electronic meetings?
- Does the technology support elected officials and the public to participate in electronic meetings (and allow everyone to hear, or watch and hear the meeting)?
- Does the code of conduct (if applicable) support electronic meetings?
- Is there a public facing document for the public to understand how to participate in electronic meetings?
- Are electronic meetings accessible to persons with disabilities (e.g. closed captioning)?
- Is there staff capacity to support electronic meetings?

# New Legislative Requirements for Electronic Meetings - Municipalities

## Electronic Regular Council Meetings

Under the Charter, electronic regular council meetings must:

- Be authorized in the procedure bylaw;
- Be conducted in accordance with the procedure bylaw;
- Establish procedures for giving advance notice of regular meetings to be held electronically;
- Provide notice of the way in which the regular meeting is to be conducted and the place where the public can attend to hear, or watch and hear, the regular meeting;
- Provide a location for the public to attend to hear, or watch and hear the meeting;
- Use technology that enables the meeting participants and the public to hear, or watch and hear, each other (members participating in electronic regular council meetings are deemed to be present at the meeting); and,
- Have a designated municipal officer at the place where the public can attend.

### Municipalities

#### *Community Charter*

- Section 128 Electronic regular council meetings

The term “facilities” in the legislation is used to refer to the technology used for conducting electronic meetings.

The term “municipal officer” refers to those officer positions established by bylaw. The term “municipal officer” also applies to the officer’s deputy and any person designated by the council to act in the officer’s place.

## Electronic Council Committee Meetings

Electronic council committee meetings must:

- Be authorized in the procedure bylaw;
- Be conducted in accordance with the procedure bylaw;
- Provide advance public notice and establish procedures for giving notice including the way in which the committee meeting is to be conducted;
- Use technology that enables the meeting participants and the public to hear, or watch and hear, the meeting (members participating in electronic council committee meetings are deemed to be present at the meeting).

### Municipalities

#### *Community Charter*

- Section 128.2 Electronic council committee meetings

## Adapting to the New Requirements for Electronic Meeting

### **Procedure Bylaw Best Practices for Electronic Meetings**

The choice of when to use the electronic meetings authority (e.g., how often and in what circumstances) and other rules for electronic meetings is up to each local government.

In addition to the legislative requirements, there are some best practices local governments may wish to consider including in their procedure bylaw to support elected officials, staff and the public navigate electronic meetings.

- Describe the circumstances when electronic meetings are permitted (e.g., regular, special, committee, open/closed);
- Provide as much notice as possible if a meeting will be held electronically;
- Provide adequate instructions in the notice so the public knows how to access or participate in the meeting electronically (e.g. provide a teleconference number or a link to the local government website for information on how to watch an audio or video conference);
- Include procedures for shifting from an open to a closed meeting during electronic meetings;
- Outline procedures to determine quorum (and procedures to follow if quorum is lost due to technical difficulties);
- Avoid referring to a specific technology to use for electronic meetings in case it changes;
- Outline the methods for members to make a motion or point of order during the meeting (either in the procedure bylaw or an electronic meeting policy);
- Select and outline the method of taking and verifying votes in the electronic context (e.g. amending bylaws; secret ballot for election of board chair);
- Determine how conflict of interest is dealt with for electronic meetings;
- Provide the process for delegations and the public to participate in electronic meetings and how to deal with members of the public that have not been invited to speak;
- Outline how council or board members may add items to the agenda in an electronic meeting; and,
- Publish the agenda well in advance of meeting date (if possible).

### **Electronic Meeting Policies**

Local governments may decide to include further electronic meeting rules and procedures to guide council and board members, staff and the public in an electronic meetings policy. Local government staff may also want to provide additional training to council or boards on how to chair electronic meetings and the associated electronic meeting policies. Ideas to consider could include:

- Initiate a roll call in alphabetical order at beginning of each meeting to ensure those attending/ watching know who is present;

- Develop and provide scripts for Chairs to ensure that the rules of voting procedures are stated at the beginning of each meeting so all attendees are aware of procedure;
- Determine whether the Chair or Acting Chair must be physically present with the staff in council chambers to determine next steps in the event of a technology failure;
- Outline how to deal with connectivity issues or interruptions to video/audio (e.g. loss of quorum or during voting);
- Discuss where members may attend electronic meetings from (e.g. must be in B.C. or Canada due to FOI concerns);
- Provide clear expectations to members to remain connected throughout the entire meeting and set parameters around when members must be on or off camera or muted;
- Provide information to members on etiquette (e.g. lighting, privacy, use of virtual backgrounds).
- Develop a process the Corporate Officer will use to temporarily remove someone from a meeting due to a declared conflict of interest (e.g. person must disconnect or be placed in waiting room);
- Determine how quorum will be monitored and how it will be determined and recorded that a member is present, has left or returned to the meeting;
- Detail information on how voting will be handled in electronic meetings and how concerns about accuracy of the vote will be dealt with;
  - how to handle connectivity issues and potential legalities (e.g. when quorum might have been lost or when votes are recorded inaccurately)
  - how to ensure the public has clear info and managed expectations
- Provide a contact person for the public to contact with technical difficulties (e.g. email or telephone number on local government website and/or in the public notice);
- How staff will assist the chair to recognize council or board members or the public who may want to speak;
- If livestreaming ensure a staff member outside of the meeting checks and confirms that the livestream is working; and,
- Describe what will be used for backup technology if it fails during a meeting (e.g. regular phone conference line)

### **Aligning Corporate Policies and Procedures**

Local governments may have supporting policies and procedures to review and amend to align with procedure bylaw amendments for electronic meetings. Electronic meeting policies can contain more details about electronic meeting processes and the technology used than the procedure bylaw itself. Having these details set out in policy may in turn help increase transparency, openness, accountability and consistency around electronic meetings.

Such policies may include:

- Electronic meetings policy (e.g. procedures for public question period; etiquette guidelines or tip sheet for electronic meetings; how personal privacy will be protected under Freedom of Information and Protection of Privacy Act)
- Records retention policy (e.g. recording and retention of electronic meetings);
- Technology policy (e.g. technology used to access meetings and closed meetings);
- Code of Conduct (e.g. include conduct for electronic meetings);
- Respectful workplace policy (e.g. inclusion of electronic meetings);
- Procedures for public participation in meetings (including delegations and public question period); and,
- Remuneration policy (e.g. for electronic attendance at meetings).

## RESOURCES

**Note: Once the legislation is in force, the procedure bylaw guidance about electronic regular and committee meetings will be incorporated into the Procedure Bylaw Guide: For B.C.'s Local Governments.**

[Procedure Bylaw Guide: For B.C.'s Local Governments](#)

[Open Meetings: Best Practices Guide for Local Governments](#)

[Electronic Meetings & Public Hearings Considerations for Local Governments](#)

[Bill 10 – Municipal Affairs Statutes Amendments Act](#)

[Ministerial Order 192 Local Government Meetings and Bylaw Process Order No. 3](#)



## APPENDIX C

### Council Procedure Bylaw Amendment – Questions for Consideration

Question	Corporate Response	CAO Comment
Do electronic meetings increase accessibility for elected officials and the public?	Yes, elected officials and members of the public who must interrupt other activities to attend meetings find it saves time to attend electronically.	Yes, further to Corporate’s response, this also allows work efficiencies by Staff who can continue to work while listening to the Council meeting until it is their turn to present.
Does the council or board want to authorize electronic regular and committee meetings? If yes, under what circumstances?		n/a
Can the legislative requirements for electronic meetings be met (e.g. meeting participants are able to hear, or watch and hear, each other; members of the public may attend a specified place to hear, or watch and hear, the proceedings)?	No, the Village does not currently have the hardware (speakers, microphones, cameras) necessary to hold hybrid meetings in Council Chambers and to record and broadcast the meetings. Staff are considering alternative meeting spaces and hardware requirements.	No further comments to add
Does the procedure bylaw currently authorize electronic special meetings and electronic participation?	Yes, see section 10. Details below.	n/a
Are there limits on the number of times or consecutive number of meetings a council or board member can participate electronically? Do these limits apply in emergency scenarios?	<ul style="list-style-type: none"> <li>• Section 10 authorizes no more than two (2) members of Council, committee, or commission, but not the presiding member, to participate in a meeting by electronic means.</li> <li>• Council members may not attend by electronic means more than a maximum of four (4) meetings as identified in this section per calendar year</li> <li>• In the event of a health, environmental or safety emergency, where it is not possible to have a quorum or the Mayor or Acting Mayor physically present for a meeting, all or any portion of the members may participate in a Council, committee, commission or special meeting by means of electronic or other communication facilities, and are deemed to be present at the meeting (<i>Amendment BL 888, 2020</i>),</li> </ul>	No further comments to add
Are there electronic meeting procedures for the chair and staff to follow for electronic meetings?	<ul style="list-style-type: none"> <li>• Yes, Staff provides notes to assist the presiding member at each meeting.</li> <li>• Staff and Council have been guided by Policy COU-11 under M192, but this policy is no longer applicable.</li> </ul>	No further comments to add

## APPENDIX C

<p>Can council and board members participate in both open and closed meetings electronically? If closed meetings are authorized, how is confidentiality being maintained by participating council or board members?</p>	<ul style="list-style-type: none"> <li>• Yes, Council members have been participating in both open and closed meetings through Zoom webinar under M192.</li> <li>• Closed meetings are locked to prevent access to the webinar by unauthorized attendees.</li> </ul>	<p>No further comments to add</p>
<p>Is the technology available reliable?</p>	<ul style="list-style-type: none"> <li>• Yes, the Zoom technology is reliable, but some Council members have experienced technical difficulties accessing meetings due to home network deficiencies.</li> <li>• The Zoom technology meets the needs of electronic meetings when all participants attend electronically from a remote location; the Village does not currently have the technology necessary for hybrid meetings.</li> </ul>	<p>Although we have been using the Zoom platform for electronic meetings, Staff are currently exploring alternative platforms that may be more user-friendly or have less costs.</p>
<p>How secure is the wifi used for remote access?</p>	<p>This is unknown.</p>	<p>Each individual user's wifi has differing security settings, at this time, no minimum security standards have been established.</p>
<p>Are there plans for new or additional technology to support electronic meetings?</p>	<ul style="list-style-type: none"> <li>• Yes, new hardware will be required to permit hybrid meetings, to equip a location from which the public may hear, or watch and hear, electronic meetings, and to record and broadcast meetings, even if they are held entirely in person. Meeting hardware systems that accomplish these tasks are available.</li> </ul>	<p>No further comments to add</p>
<p>Does the code of conduct support electronic meetings?</p>	<ul style="list-style-type: none"> <li>• COU-004, Code of Conduct Policy, is not applicable.</li> <li>• It is recommended that Conduct for Electronic Meetings Policy be developed.</li> </ul>	<p>No further comments to add</p>
<p>Is there a public facing document for the public to understand how to participate in electronic meetings?</p>	<ul style="list-style-type: none"> <li>• Yes, Staff provide this for each meeting. A sample is attached. The document was drafted pursuant to M192 and will be revised and updated once the Council Procedures Bylaw amendment has been adopted.</li> </ul>	<p>No further comments to add</p>
<p>Are electronic meetings accessible to persons with disabilities (e.g. closed captioning)?</p>	<ul style="list-style-type: none"> <li>• No. Zoom does not provide this service. Staff will search for a solution to this.</li> </ul>	<p>Through preliminary review of other platforms, it has been identified that at least one alternative can provide closed captioning.</p>
<p>Is there staff capacity to support electronic meetings?</p>	<ul style="list-style-type: none"> <li>• Yes, staff have been facilitating electronic meetings through Zoom and will support other electronic meeting formats to the extent of their ability. However, Staff are not IT experts and may need support from our IT contractor if a new format is selected or if electronic meetings are held in other facilities.</li> </ul>	<p>Alternatively, we may need to contract to another provider should our current contractor not have the capacity to dedicated to recurring Council meetings.</p>

**Video Recording & Broadcasting of Electronically Held Council, Committee and Board Meetings**

Department:	<u>Council</u>	Policy No.:	<u>COU-011</u>
Sub-department:	<u>Corporate</u>	Created By:	<u>Sheena Fraser</u>
Approved By:	<u>Council</u>	Amended By:	<u></u>
Approved Date:	<u>26 May 2020</u>	Amendment:	<u></u>
Meeting No.:	<u>1515</u>	Meeting No.:	<u></u>

**POLICY PURPOSE**

The Video Recording and Broadcasting of Electronically Held Council Meetings Policy will provide guidelines for Broadcasting and management of video recordings of Council and Committee Meetings that are open to the public in the event of an emergency situation which requires the meetings to be held via electronic means and which also prevents the public from attending.

**REFERENCES**

The Village of Pemberton Records Management Bylaw  
 Village of Pemberton Records Retention Schedule  
 Council Procedure Bylaw  
 Ministerial Orders 139, dated May 1, 2020, as amended or replaced

**DEFINITIONS**

“Chair” means the Mayor or Chair of the meeting.

“Chief Administrative Officer” means the Chief Administrative Officer as appointed by Council or their designate from time to time.

“Council” means the Council of the Village of Pemberton and in this policy includes the Committee of the Whole.

“Committee” means any committees, commissions or boards as established by Council.

“Open Meeting” means any meeting of Council or a Committee open to the public in accordance with section 89 of the *Community Charter*.

“Village” means the Village of Pemberton.

“Village Website” means the website administered and controlled by the Village of Pemberton which may include other social media platforms controlled by the Village.

Department:	<u>Council</u>	Policy No.:	<u>COU-011</u>
Sub-department:	<u>Corporate</u>	Created By:	<u>Sheena Fraser</u>
Approved By:	<u>Council</u>	Amended By:	<u></u>
Approved Date:	<u>26 May 2020</u>	Amendment:	<u></u>
Meeting No.:	<u>1515</u>	Meeting No.:	<u></u>

**POLICY**

In the event of an emergency situation that precludes in-person attendance by Council, Staff or the public at open meetings of Council or Committees, meetings may be held by electronic means and may be broadcast, video recorded and posted on the Village’s website in an effort to ensure transparency, public participation and access to municipal decision making pursuant to a Ministerial Order.

Any Council meeting or portion of a Council meeting closed to the public in accordance with section 90 of the *Community Charter* will not be broadcast or recorded.

**PROCEDURE**

Meeting Technical Procedure:

The Village of Pemberton has elected to utilize the ZOOM Webinar program to facilitate virtual meetings during emergency situations that prevents Council, Staff and the public to attend an open meeting in person.

Council and Committee Meetings conducted using the ZOOM Webinar program allow Council or Committee members to attend as Panelists and the public to attend as Attendees.

Attendees making a presentation will be invited into the meeting to participate as a Panelist at the time the agenda item is considered. Following the presentation and if there are no questions from Council or Committee members the presenter’s role will be changed from Panelist back to Attendee.

During Open Question Period, members of the public who wish to ask a question (in accordance with Open Question Period Policy COU-002) will be unmuted by Staff in order to present their question to Council. Once the individual’s opportunity for questions is finished, their microphone will be returned to mute. A member of the public participating in Open Question Period remains an Attendee and does not have video capability.

Department:	<u>Council</u>	Policy No.:	<u>COU-011</u>
Sub-department:	<u>Corporate</u>	Created By:	<u>Sheena Fraser</u>
Approved By:	<u>Council</u>	Amended By:	<u></u>
Approved Date:	<u>26 May 2020</u>	Amendment:	<u></u>
Meeting No.:	<u>1515</u>	Meeting No.:	<u></u>

Staff will be responsible for issuing the meeting invitation, testing and making best efforts to try to make links workable and providing information on how to join a meeting. Staff will be responsible for facilitating the hosting duties of the webinar.

Other video conferencing platforms may be utilized as deemed appropriate.

### **MEETING RECORDINGS:**

The official record of Council or Committee meetings shall be the written minutes. The keeping of a video recording of a Council or Committee meeting shall in no way detract or undermine the position of approved minutes as the official record of Council or Committee decisions.

The Village of Pemberton will make every reasonable effort to ensure that broadcasting and video recordings are available to the public. However, there may be situations where due to technical difficulties the broadcasting and video recording may be unavailable or delayed. Meetings will not be cancelled, postponed or delayed due to technical issues with broadcasting or recordings of meetings.

The Chair of the meeting will make a statement at the beginning of the meeting to ensure that presenters and members of the public attending via electronic means are aware that the meeting is being broadcast, recorded and will be made available over the internet.

Recordings will be accessible to the public on the Village's website within five (5) days of the meeting and will remain on the website for a period of three (3) years from the date of the meeting. By participating in a ZOOM or live streamed meeting attendees consent to the utilization, storage and availability of recordings as set out in this Policy.

Original unmodified recordings will be classified, stored and retained in accordance with the Village's Records Management Bylaw.

Department:	<u>Council</u>	Policy No.:	<u>COU-011</u>
Sub-department:	<u>Corporate</u>	Created By:	<u>Sheena Fraser</u>
Approved By:	<u>Council</u>	Amended By:	<u></u>
Approved Date:	<u>26 May 2020</u>	Amendment:	<u></u>
Meeting No.:	<u>1515</u>	Meeting No.:	<u></u>

**RISK MITIGATION:**

Council meetings are a public forum of statements, questions and answers.

Opinions expressed and statements made during a Council or Committee meeting are those of the individual making them and not those of Council. Unless set out in a resolution of Council, Council does not endorse or support the views, opinions, standards, or information that may be expressed by individuals at a Council or Committee meeting and which may be contained in the recording.

It is possible that statements could be made which may be regarded as offensive, defamatory, incorrect, or contrary to law and may be the subject of potential liability. As the broadcasting and publishing of recordings of meetings increases the potential audience, potential risks may also increase.

Accordingly, the Chair has the discretion and authority at any time to direct the termination or interruption of the broadcasting and recording of the meeting if they consider it prudent or advisable to do so. Such direction will only be given in exceptional circumstances.

Council may by a majority vote:

- a) Direct the Chief Administrative Officer to direct Staff to terminate or interrupt the recording of a Council meeting if they consider it advisable to do so due to conduct that is deemed inappropriate; or
- b) Direct the Chief Administrative Officer to direct Staff to remove recordings or portions of recordings from the Village’s website where they consider it advisable to do so due to content, they deem inappropriate to be published.

Material considered to be inappropriate may include, but is not limited to, material that may:

- Be false or misleading communication which damages the reputation of another individual or organization;
- Infringe on copyright;
- Breach the privacy of an individual or unauthorized disclosure of the personal information of an individual;

Department:	<u>Council</u>	Policy No.:	<u>COU-011</u>
Sub-department:	<u>Corporate</u>	Created By:	<u>Sheena Fraser</u>
Approved By:	<u>Council</u>	Amended By:	<u></u>
Approved Date:	<u>26 May 2020</u>	Amendment:	<u></u>
Meeting No.:	<u>1515</u>	Meeting No.:	<u></u>

- Be offensive;
- Constitute discrimination;
- Constitute hatred of a person or group of people and is likely to offend, insult, humiliate or intimidate;
- Disclose confidential or privileged information.

**LICENCE AND USE:**

Unless otherwise indicated, copyright to the recordings of meetings made available on the Village’s website is owned by the Village of Pemberton. Permission is granted to produce or reproduce the recordings posted on the website, or any substantial part of such recordings, for personal, non-commercial, educational and new reporting purposes only, provided that the copied material is not modified or altered and ownership of the material is attributed to the Village.

For certainty, no person may use the recordings for commercial activity.

Unless expressly authorized herein, no part of the recorded materials posted on the Village’s website may be reproduced except in accordance with the provisions of the *Copyright Act*, as such *Act* may be amended or replaced from time to time, or with the express written permission of the Village.

**RESPONSIBILITIES**

Council is responsible to:

- a) Approve this Policy and any amendment thereto.

The Chief Administrative Officer is responsible to:

- a) Implement, monitor and evaluate this Policy.