

To: Electoral Area Services Committee

Date: 2023-06-08

From: Julie Mundy, Planner I

File No: 3015-20 2023-04

Subject: Agricultural Land Commission Application – Non-Farm Use in the Agricultural Land Reserve at 59710 Lougheed Hwy, Area G

RECOMMENDATION

THAT the Fraser Valley Regional District Board forward the application for a Non-Farm Use at 59710 Lougheed Highway, Area B, to the Agricultural Land Commission.

BACKGROUND

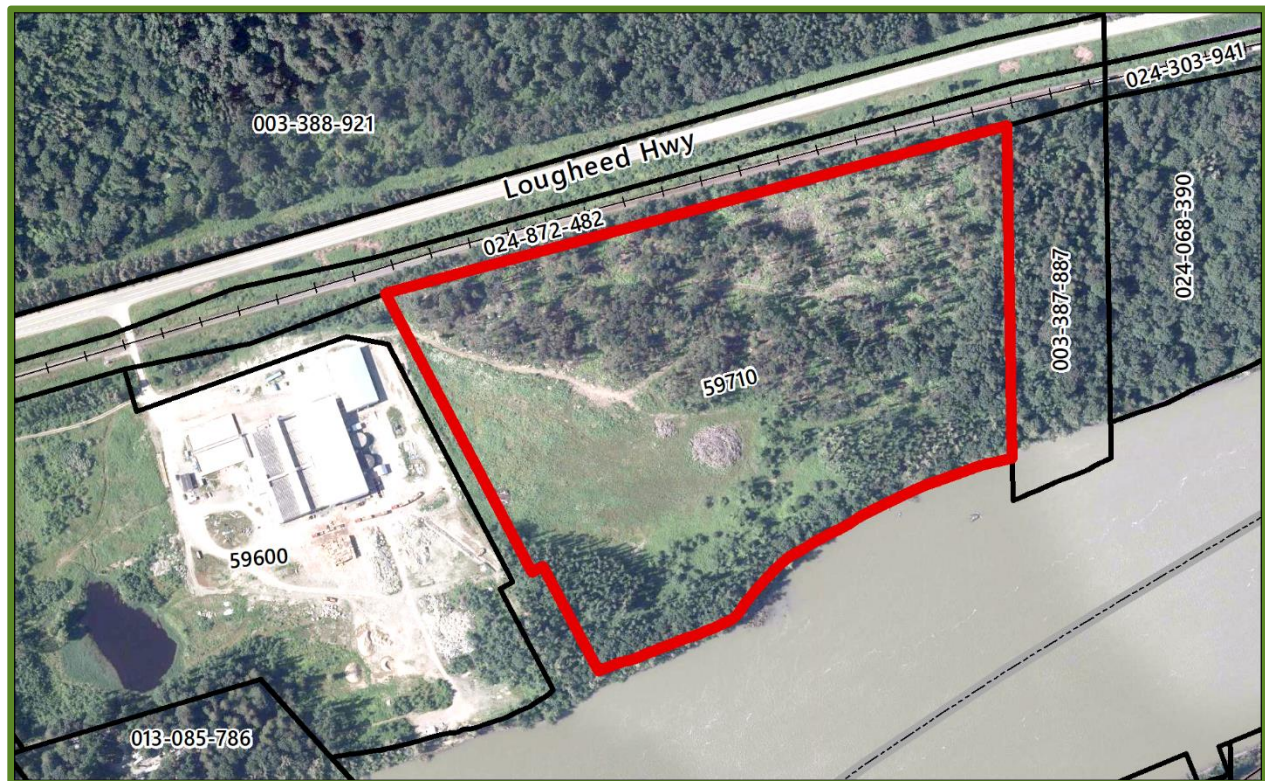
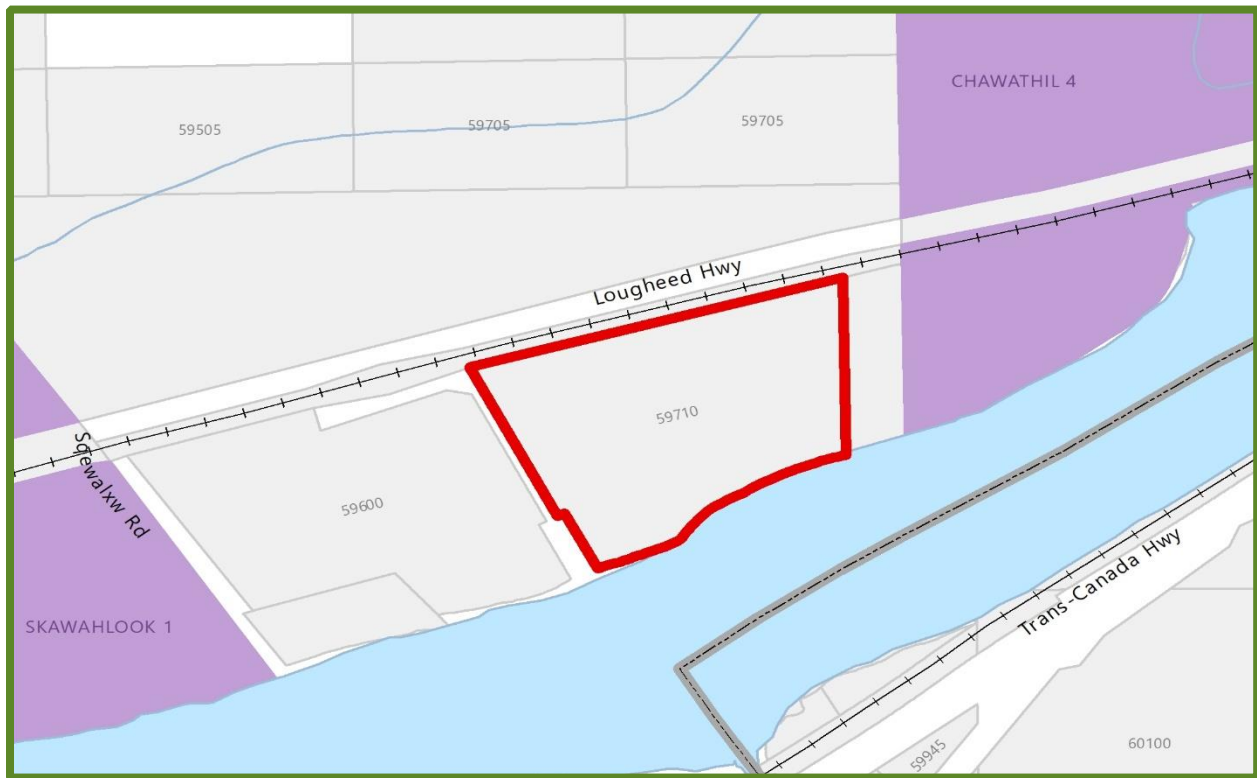
FVRD has received a referral from the Agricultural Land Use Commission (ALC) for a Non-Farm Use at 59710 Lougheed Hwy, Area B. The proposal is to construct a 68,000 sq. ft. **building for “processing bamboo cash-crops into prismatic carbon-negative construction products”**.

The FVRD Board considered this item at the May 18, 2023 Board meeting and referred the application back to staff for more information. In response, the applicant has provided additional information about bamboo growth patterns, best farming practices, potential job creation, and anticipated timelines. See Schedule A – Additional Correspondence.

PROPERTY DETAILS			
Address	59710 Lougheed Hwy	Area	B
PID	002-119-803	Owner	Xbase Farm Partnership
Folio	732.00201.400	Agent	Peter Liu
Lot Size	31.58 acres		
Current Zoning	Rural 5 (R-5)/Resource Industrial 1(RI-1)	Proposed Zoning	No change
Current OCP	n/a	Proposed OCP	No change
Current Use	Vacant	Proposed Use	Industrial/Farm
Development Permit Areas	6-BC – Riparian Areas		
Agricultural Land Reserve	Yes		

ADJACENT ZONING & LAND USES		
North	^	Highway Commercial 3 (HC-3); Lougheed Hwy, Canadian Pacific Railway, Forest
East	>	Chawathil Band
West	<	Resource Industrial 1(RI-1); Mushroom Compost Facility
South	v	Fraser River

NEIGHBOURHOOD MAP



DISCUSSION

Property Description

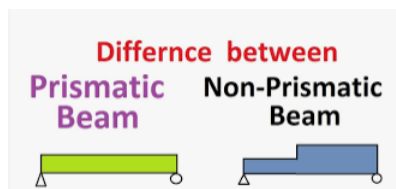
The property is 12.7 ha in size and is located off Lougheed Highway, in Area B between the District of Kent and District of Hope boundaries. The property is surrounded by a mushroom composting facility to the east, Chawathil reserve lands to the west, Lougheed Highway and CPR railway to the north, and the Fraser River to the south. The property is accessed by an undeveloped road right of way adjacent to the composting facility.

The property is partially treed and partially cleared with herbaceous plants growing. There are no agricultural activities on the property at this time.

Applicant Proposal

The application states the purpose of the proposal is:

For processing bamboo cash crops into prismatic carbon-negative construction products. Require construction of a 68,000 sq ft processing facility and outdoor yard to sort cultivated bamboo that will be grown on the property.



That application states:

- *We are providing value-added products grown from land-based farming activity*
- *In the long term: the proposed building will be equipped with an extensive green roof and rooftop bee farm to supplement agricultural activities that could have occurred if the building is not constructed. We will increase biodiversity, maintain soil fertility, and secure pre-development watershed infiltration rates on the property.*

The proposal includes the placement of 12,634 m³ of structural fill for the proposed building to meet the flood construction level set out in the FVRD Floodplain Management Bylaw.

Correspondence with the applicant (see Schedule A) indicates the facility will be used for processing harvested bamboo and locally purchased timber into structural applications. The applicant has provided images that illustrate the process of bamboo processing for structural products.



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Bamboo processing of prismatic structural products

Process steps & photos

1. Harvest bamboo
2. Dry bamboo
3. Cut and split bamboo
4. Layup bamboo for pressing
5. Press bamboo
6. Package & ship

Bamboo harvesting



Bamboo drying and cutting



Bamboo splitting



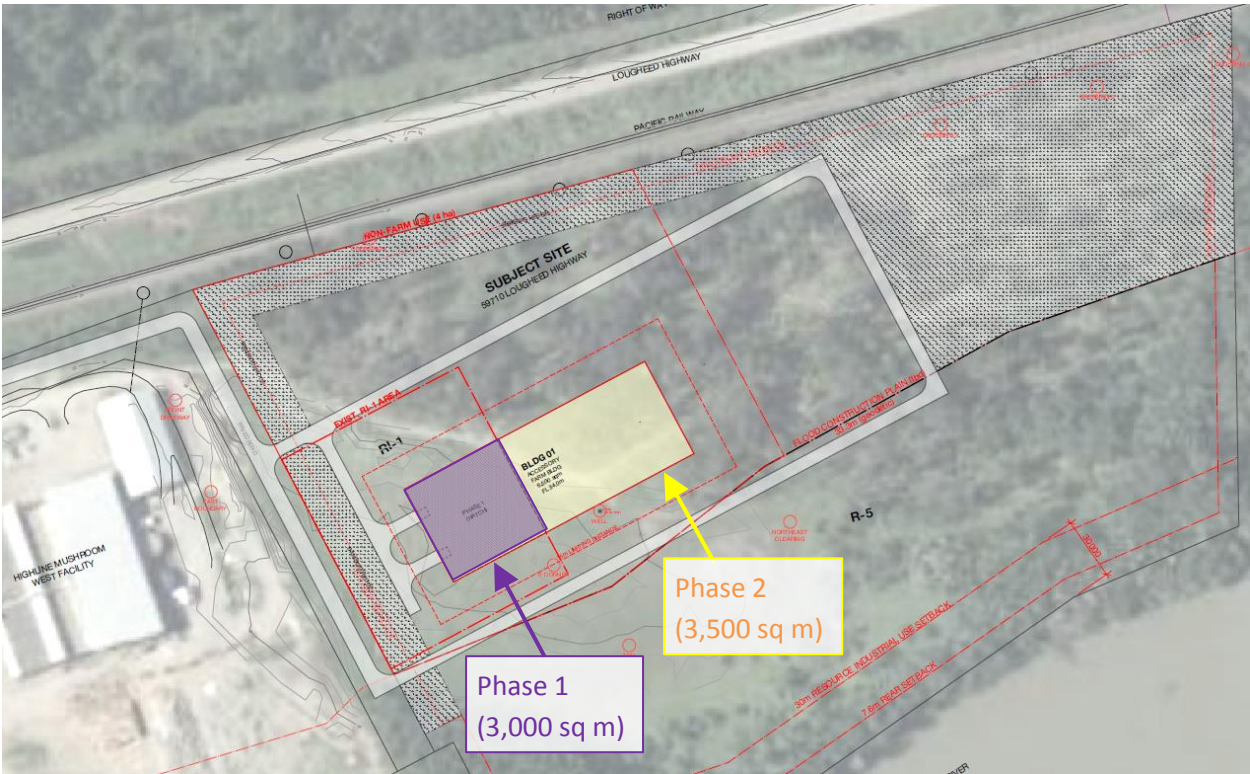
Bamboo pressing



Product packing & storage before shipping



The applicant indicates phase 1 of the proposal will be about 3,000 sq. m. (32,290 sq. ft.). See attached full size preliminary site plan.

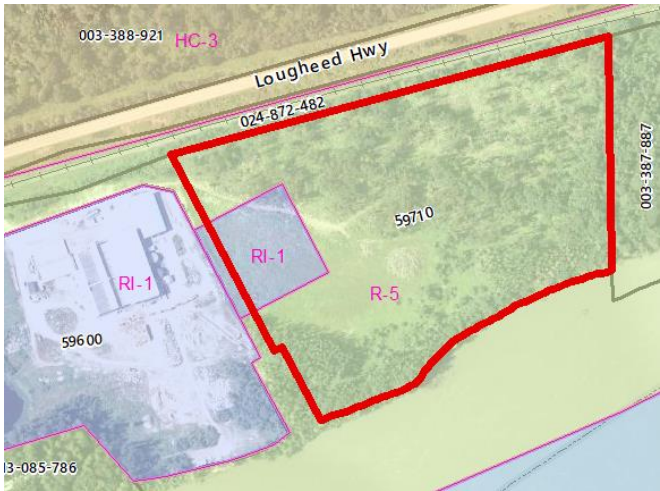


FVRD Regulations & Policies

Zoning

The property is zoned Resource Industrial 1 (RI-1) and Rural 5 (R-5), under *Zoning Bylaw 1638, 2021*. The primary uses permitted in each zone are:

RI-1	R-5
Farm	Farm
Resource Extraction	Residential
Resource Industrial	Cemetery
Cannabis Production Facility	Kennel
	Natural Camping Ground
	Outdoor Recreation
	Resource Extraction
	Cannabis Production Facility



FVRD understands the proposed bamboo and timber processing to be an industrial use. The proposed processing is permitted in the RI-1 zone under Resource Industrial use and is not permitted in the R-5 zone.

Phase 1 of the proposal is located in the RI-1 zone and complies with zoning. If the application proceeds, additional information will be required to ensure BC Building Code requirements are met.

Phase 2 of the proposal is located in the R-5 zone where industrial uses are not permitted. Based on the current proposal and site conditions, Phase 2 will require a zoning amendment to proceed. A zoning amendment is a separate process that requires Board approval, public consultation and in this instance, MOTI approval. Forwarding the ALC application allows the applicant to seek ALC approval prior to making further investments. It does not constitute a decision on a future zoning amendment application.

FVRD may re-assess the land use and zoning requirements should the proposal or site conditions change, including the presence of any primary farm products.

Floodplain Setbacks

FVRD Floodplain Management Bylaw 1669, 2022 includes a setback from the Fraser River which impacts the property. New construction must adhere to the prescribed floodplain setbacks and flood construction levels.

Official Community Plan (OCP)

The property is outside the Official Community Plan area boundaries.

Consultation

The subject property is located in close proximity to the Skawahlook and Chawthil communities. FVRD recommends the Agricultural Land Commission undertake consultation with both First Nations to assess the impact the proposed non-farm use may have on the communities and on aboriginal rights and title.

ALC Regulations

Agricultural Land Reserve Use Regulation s11 (2) states:

- The use of agricultural land for storing, packing, preparing, and processing farm products is designated as farm use and may not be prohibited if at least 50% of the farm product is
 - a. produced either on that agricultural land or by an association to which the owner of the agricultural land belongs, or
 - b. feed required for farm use on that agricultural land

There are currently no farm products being produced on the property. Therefore, the proposed structure cannot be approved without an ALC non-farm use application.

If the application proceeds, the ALC can assess whether the proposed processing would be considered a farm use under the Agricultural Land Reserve Use Regulation once the bamboo is being produced on the property.

ALC Application Process

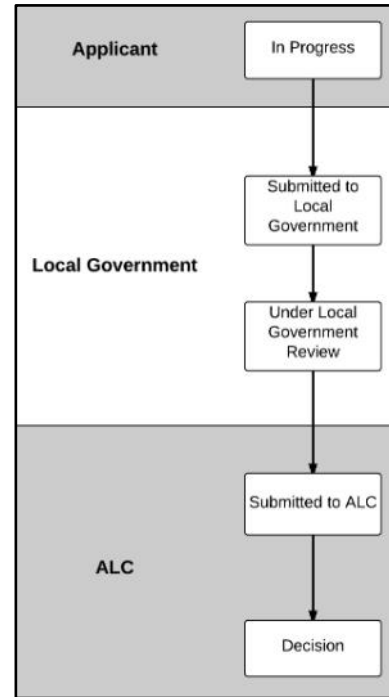
Non-Farm Use applications are submitted by the applicant to the ALC portal. The portal then forwards the application to the appropriate local government for review.

The FVRD Board must decide if the application should proceed to the ALC for further consideration. The FVRD Board may either:

1. Authorize the application to proceed to the ALC, or
2. Refuse to authorize the application to proceed to the ALC

If the application is forwarded, the ALC will make a decision on the application.

Any additional applications (zoning amendments, building permits, etc.) will be made directly to the FVRD.



COST

The \$750 FVRD portion of the application fee has been paid. The applicant will pay the ALC portion of the fee (\$750) if the application is forwarded.

CONCLUSION

The role of FVRD in an ALC application is to review and decide if the application should proceed to the ALC for a decision. Staff recommend the Non-Farm Use application for 59710 Lougheed Hwy be forwarded to the ALC for the following reasons:

- Phase 1 of the proposal (within the RI-1 zone) complies with zoning requirements
- ALC comments on the proposal will provide direction for Phase 2 developments
- The proposal may be of economic benefit to Area B

If ALC approval is granted, the applicant can proceed through the FVRD building permit process.

Option 1 – Forward to the ALC (Staff Recommendation)

MOTION: THAT the Fraser Valley Regional District Board forward the application for a Non-Farm Use at 59710 Lougheed Highway, Area B, to the Agricultural Land Commission.

Option 2 - Refuse

MOTION: THAT the Fraser Valley Regional District Board refuse to forward the application for a Non-Farm Use at 59710 Lougheed Highway, Area B, to the Agricultural Land Commission.

COMMENTS BY:

Hasib Nadvi, Manager of Planning: reviewed and supported

Graham Daneluz, Director of Planning & Development: reviewed and supported

Kelly Lownsbrough, Director of Corporate Services/CFO: Reviewed and supported.

Jennifer Kinneman, Chief Administrative Officer: Reviewed and supported.

Schedule A – Additional Correspondence



To: Julie Mundy
From: Sol Rodriguez, Chief Operating Officer Bamboo Nations
Date: May 25, 2023

Subject: Agricultural Land Commission Application - Non-Farm Use in Agricultural Land Reserve at 59710 Lougheed Hwy, Area B - Response to Electoral Area Director Due Diligence Questions

Questions 1 - Bamboo - invasive plant- How to protect surrounding farms and lands?

There are over 1500 species of bamboo in the world classified in two primary groups: monopodial and sympodial. Monopodial and sympodial are two different growth patterns observed in bamboo plants.

Monopodial Bamboo:

1. Monopodial bamboo is characterized by the presence of a single dominant main stem, known as the culm, which grows vertically upwards. This main stem is responsible for the majority of the plant's growth and height. Monopodial bamboos have a more upright growth habit, with the culms growing in a relatively straight manner. The branches and leaves emerge from nodes along the culm, and new shoots arise from the base of the plant or from underground rhizomes.

Sympodial Bamboo:

2. Sympodial bamboo, also known as running bamboo, exhibits a different growth pattern. Instead of a single dominant culm, sympodial bamboo grows in clusters or groves consisting of multiple culms. Each culm grows to a certain height and then terminates, while new shoots emerge from the base of the culm or from the rhizomes in the ground. The new shoots can grow in various directions, creating a spreading or clumping growth habit. This type of bamboo tends to expand horizontally by sending out rhizomes, which can give rise to new culms and shoots some distance away from the original plant.

At 59710 Lougheed Hwy we will plant monopodial bamboo species also known as clumping bamboo. Precedent shows that monopodial bamboo species grow well contained in BC. Examples can be observed at Canada's Bamboo World located along Hwy 1 in Chilliwack, BC (8450 Banford Rd, Chilliwack, BC V2P 6H3). It grows in clumps to a diameter of about 5 meters, therefore posing little to no risk to run onto adjacent property. Additionally, we have the option to install root barriers around the perimeter of the bamboo clumps as an additional layer of protection to prevent spread onto adjacent farms.

Question 2 - How to prevent any soil leach into Fraser River and water systems?

To minimize soil leaching from an agricultural bamboo plantation into the Fraser river, our risk mitigation plan includes the following strategies:

Site Selection and Buffer Zones:

1. Choose a suitable location for the bamboo plantation, considering factors such as slope, soil type, and proximity to the river. Maintain buffer zones between the plantation and the river to reduce the risk of direct runoff and soil erosion into the water.

Soil Conservation Practices:

2. Implement erosion control measures such as contour plowing, terracing, or the construction of retention ponds to slow down water flow and prevent soil erosion. These practices help retain soil on-site and minimize the potential for sediment and nutrients to enter the river.

Water Management:

3. Optimize irrigation practices to reduce excess water use and minimize runoff. Use techniques like drip irrigation or precision watering to target specific areas and avoid overwatering. This helps prevent excessive leaching of nutrients and contaminants from the plantation into the river.

Nutrient Management:

4. Develop a nutrient management plan that considers the specific nutrient requirements of bamboo and avoids excessive application of fertilizers. Conduct soil testing to determine the existing nutrient levels and apply fertilizers judiciously based on the plant's needs. This helps minimize the risk of nutrient leaching into the river.

Pesticide and Herbicide Management:

5. Follow Integrated Pest Management (IPM) practices to minimize the use of pesticides and herbicides. Choose environmentally friendly alternatives and apply them according to recommended guidelines. Carefully monitor and document pesticide applications to minimize the risk of runoff and leaching into the river.

Riparian Zone Protection:

6. Protect and maintain a healthy riparian zone along the riverbank adjacent to the plantation. Plant native vegetation in this zone to stabilize the soil, filter runoff, and reduce the potential for sediment and pollutants to enter the river.

Monitoring and Regular Assessment:

7. Regularly monitor soil conditions, water quality in the river, and plant health to assess the effectiveness of the mitigation plan. Adjust management practices as needed based on the monitoring results and any identified risks or issues.

We will consult with local agricultural and environmental experts, as well as adhere to any applicable regulations or guidelines specific to the region, to ensure that the risk mitigation plan aligns with local requirements and best practices for sustainable agriculture.

Question 3 - Potential job opportunities - full/part-time?

Bamboo Plantation & Cultivation

- Full-time jobs: 4
- Seasonal jobs: 30 during harvesting season

Bamboo processing plant

- Full-time jobs: 25

Question 4 - What is the timeline for construction start to business production?

Please see below timeline taken from our business plan presentation deck. If we can get site development permits approved from FVRD/ALC this year we anticipate to be in service by 2027.

Bamboo Nations Execution Plan

Construction Overview	Execution timeline								
<ul style="list-style-type: none">• Modular plant construction• Lump sum turn-key EPC contract	<table><tbody><tr><td>2022</td><td><ul style="list-style-type: none">• Land purchase agreement• Bamboo materials LOI sales</td></tr><tr><td>2023</td><td><ul style="list-style-type: none">• Site development permits• Demo residential project with bamboo materials</td></tr><tr><td>2024 - 2026</td><td><ul style="list-style-type: none">• Bamboo plantation establishment• Factory construction</td></tr><tr><td>2027</td><td><ul style="list-style-type: none">• Anticipated in-service</td></tr></tbody></table>	2022	<ul style="list-style-type: none">• Land purchase agreement• Bamboo materials LOI sales	2023	<ul style="list-style-type: none">• Site development permits• Demo residential project with bamboo materials	2024 - 2026	<ul style="list-style-type: none">• Bamboo plantation establishment• Factory construction	2027	<ul style="list-style-type: none">• Anticipated in-service
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2027	<ul style="list-style-type: none">• Anticipated in-service								
<ul style="list-style-type: none">• Key First Nations, Agricultural Land Commission & Provincial approvals received• Fraser River, CP Railway & Highway connectivity logistics route									



Highly executable mass timber-bamboo project

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SUSTAINABLE COMMUNITIES

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From: Sol Rodriguez
Sent: April 26, 2023 8:00 AM
To: Julie Mundy
Cc: Peter Liu
Subject: Re: 59710 Lougheed Hwy - Non Farm Use Application

Hi Julie,

The construction of our **Farm Building** is divided into two phases. The activities happening within Farm Building is bamboo splitting, pressing and packaging.

- Phase 1 (shown hatched in the plan) is about 3000 sqm
- Phase 2 (includes hatched and non-hatch area) is 6500 sqm

Our **bamboo planting** scheme is also phased and aligned with our building expansion.

- Phase 1: ~ 2 ha
- Phase 2: ~ 3 ha

Regards,
Sol Rodriguez
BASc., MASc., EIT | Bamboo Nations COO



From: Sol Rodriguez |
Sent: March 7, 2023 7:29 PM
To: Julie Mundy <JMundy@fvrd.ca>
Cc: Peter Liu
Subject: Re: Pre Application - 59710 Lougheed Hwy, Area B

Dear Julie,

I am writing with respect to proposed buildings for 59710 Lougheed Hwy property.
Upon review of Zoning Bylaw 1638, my team and I propose the following buildings for this site:

Table 1. Proposed Buildings				
ID	Building Type	Size (sq. ft.)	Zoning	Description of uses
BLDG 01	Bamboo & Timber Processing	68,000	RI-1 (formerly I-1)	For processing harvested bamboo and locally purchased timber into prismatic elements for structural applications.
BLD 02	Greenhouse	20,000	R-5 (formerly R-4)	For growing bamboo, fruit trees & flowers.
BLDG 03	Accessory farm building	20,000	R-5	For storage of machinery and testing for research and development of engineered bamboo products.
HM 01	1 st House	5,000	R-5	Principal dwelling unit.
HM 02	2 nd House	2,200	R-5	Accessory personal care residential.
HM 03	3 rd House	3,200	R-5	Accessory employee residential.
TR 01	1 st Tree House	1,500	R-5	Seasonal boarding.
TR 02	2 nd Tree House	1,500	R-5	Seasonal cottage industry.

Please let us know your comments. If no major concerns are present from your end, we would like to move forward with BLDG 01 permit application.

Thanks,

Sol Rodríguez
BASc., MASc., EIT, Bamboo Nations COO



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