

Abattoir Feasibility Report
for
Lillooet Agriculture and Food Society
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Executive Summary

The Lillooet Agriculture Food Society (LAFS) is a non-profit group formed to promote agriculture economic development in Lillooet. LAFS is leading an initiative to investigate the feasibility of an abattoir in the Lillooet region. A provincially inspected Class A abattoir, providing meat processing and cut and wrap services for local ranchers, is an avenue to expand market access, create local jobs, and increase economic viability in the region. There are no stand-alone butcher shops in the area, so it is important that the abattoir also perform cut, wrap and further processing services that customers demand.

The feasibility study outlines opportunities/barriers for a local abattoir in the community, business structure of a stationary versus a mobile abattoir, potential sources of funding and abattoir location considerations. A market analysis confirmed support from local community stakeholders, and a provincially inspected plant would promote greater market access by allowing for sales throughout BC.

The primary data collected for the feasibility study analysis was an online survey targeting local residents (80 participants), interviews with key local retailer and producer stakeholders (9 participants), feedback on project with presentation at local St'át'imc band meeting, and informal discussions with consumers at a local farmers market. This was further supported by industry research and consultation with industry experts. From this came awareness of potential barriers, such as year-round production for market consistency and abattoir production balancing, adequate capital investment/funding, recruitment of skilled labor, and steps necessary to meet regulatory requirements for licensing.

Overall the study found that a provincially inspected abattoir in Lillooet would provide a valuable service for the region, create opportunities for local producers and retailers, allow for more choice of local products for the community and tourists, and promote Lillooet branded products to markets throughout BC. Adequate capital funding and management of the facility would be key for success.

1. Catchment Area and Community Description

The Squamish Lillooet Regional District (SLRD) is made up of four regions. The catchment area for this study is considered to be Areas A, B and C including members of the St'át'imc communities. According to Census Canada 2016, Area A has a population of 187, Area B (including Lillooet and First Nations Reserves) of 3,825 and Area C (including Pemberton and First Nations Reserves) of 5,792.

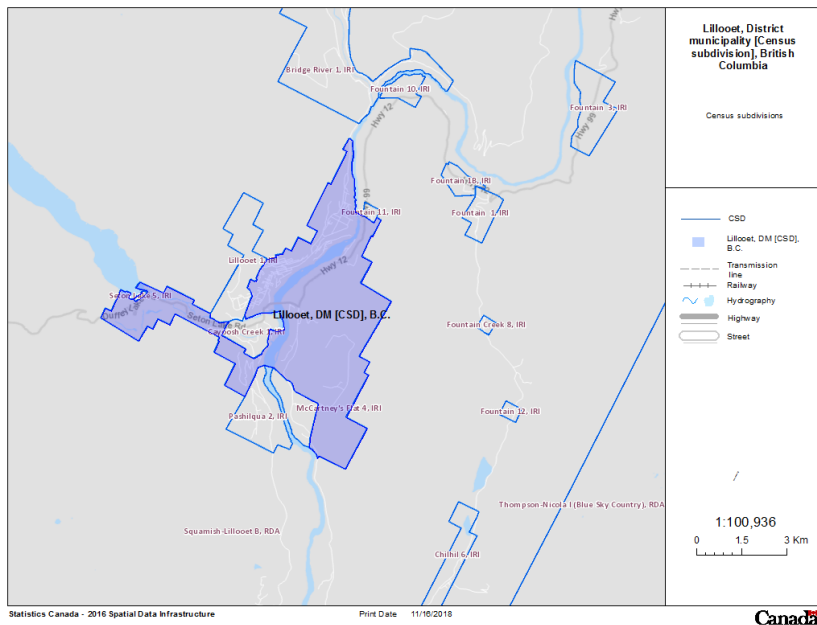
In addition to farmers and ranchers in the SLRD using an abattoir in Lillooet, customers may come from outside the Regional District. For example, the distance from Clinton to Lillooet is 106 km while the distance from Clinton to the closest licenced and inspected abattoir operating in 2018 that does red meat species is 95.5 kms.

Figure 1: Squamish Lillooet Regional District



<https://www.slrld.bc.ca/>

Figure 2: District Municipality of Lillooet Map



Select Map at <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/search-recherche/lst/results-resultats.cfm?Lang=E&GeoCode=59&Letter=L&TABID=1&G=1&Geo1=&Code1=&Geo2=PR&Code2=59#>

Table 1: Population of Lillooet and Surrounding Area

Area SLRD B	2011	2016
Lillooet District Municipality	2321	2275
SLRD Area B	451	363
Necait 6	16	20
Mission 5	25	23
Slosh 1	223	177
Bridge River 1	236	241
Pavilion 1	51	52
Fountain 1	130	111
Fountain 1B	51	73
Fountain 3	10	10
Fountain 8	0	0
Fountain 10	5	5
Fountain 11	0	0
Fountain 12	15	10

Lillooet 1	222	243
Seton Lake 5	5	0
Cayoosh 1	54	66
McCarney's Flat 4	32	26
Pashilqua 2	30	45
Chilhil 6	70	70
Towinock 2	5	5
Neskiep 6	5	10
Total Population	3,957	3,825

*Source: 2016 Statistics Canada Census Profile

Area – SLRD A	2011	2016
Regional District	224	187
Total Population	224	187

*Source: 2016 Statistics Canada Census Profile

Area – SLRD C	2011	2016
Pemberton Village	2,434	2,574
SLRD Area C	1,739	1,663
Mount Currie	1,306	1,285
Nesuch 3	110	138
Nequatque 1	292	132
Total Population	5,881	5,792

*Source: 2016 Statistics Canada Census Profile

<https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/search-recherche/lst/results-resultats.cfm?Lang=E&TABID=1&G=1&Geo1=&Code1=&Geo2=PR&Code2=59&GEOCODE=59>

St'át'imc Nation

Eleven communities make up the St'át'imc Nation, six of which are in the Lillooet area. These six communities form the Lillooet Tribal Council which is governed by a Council of Chiefs consisting of one chief from each of the six-member communities.

St'át'imc Chiefs Council:

Chief Susan James (Chairperson) from Xwísten (Bridge River); Chief Colleen Jacob from Xaxli'p (Fountain); Chief Michelle Edwards from Sekwél'wás (Cayoos Creek); Chief Courteney Adolph-

Jones from Títqet (Lillooet); Chief Francis Alec from Ts'kw'áylaxw (Pavilion); and, Chief Ida Mary Peter from Tsalálh (Seton).

These communities along with five other communities make up the St'át'imc Nation. The five communities are N'Quatqua (Anderson Lake), Xa'xtsa (Douglas), Lil'wat (Mount Currie), Samahquam and Skatin Nation Council.

The T'ít'q'et have a Food Security Project whose focus is to develop food security based on local organic food production, expanding storage capability, extending storage life, and enhancing nutritional values of harvested foods using appropriate technology and environmentally sound techniques. To accomplish this, an Intermediate Technology Food Processing (ITFP) Facility will be established by a non-profit organization in conjunction with the community garden project.

Additional project outcomes will include educational and marketing opportunities, honoring culture, and strengthening ties to the wider Lillooet Community via these avenues.

<http://www.titqet.org/community/initiatives/food-security/>

T'ít'q'et's Economic Action Plan (2011) includes Agri-Food Production and Sales – page 25-27

http://www.titqet.org/wp-content/uploads/2017/09/PC-Strategic-Economic-Action-Plan-Report-April-3-2012-FINAL.final_Web.pdf

2. Industry Background

Overview of the Meat Processing Sector

For more details, see the BC Association of Abattoirs 'Cut to the Bone' report.

Butchery was, at one time, an honoured trade which allowed people to access locally raised meat. In Canada, as elsewhere, meat processing is becoming industrialized, which results in large packing plants where animals are disassembled in a production line environment.

Luckily in BC, most abattoirs are still small and traditional butcher shops can be found, and indeed, new artisanal shops operating in the traditional manner and offering meats of the highest quality are springing up across the Province. This growth in demand for locally produced and processed meats has resulted in a need for local abattoirs with highly skilled butchers and meat cutters.

The meat product processing sector can be divided up into two main categories: abattoirs and butcher shops. The majority of abattoirs in BC have butcher shops attached to their premises (Class A) while others only process the animals, not the carcasses (Class B). Federally inspected abattoirs are able to sell outside the province, while provincially inspected ones are restricted to sales in BC.

Within BC's provincially licensed abattoirs, some mainly do custom processing of other people's animals and some process their own animals (or a combination of their own and other's) for sale to butcher shops, restaurants or directly to consumers. Custom processing plants are generally seasonal, with poultry plants being operational during the summer months and red meat plants being busiest during the fall and into early winter.

The majority of abattoirs in BC are small, craft type. As a benchmark, the Cargill High River, Alberta plant can process 4,500 head of cattle per day. In 2017, BC only processed 26,000 beef animals at all the provincially inspected abattoirs combined; something that could be done at the High River plant in less than 6 days.

Recent BC Abattoir History

Up to 2004, only some abattoirs in BC were inspected, however, there were approximately 300 uninspected abattoirs throughout the province, including very small farm abattoirs. In 2004, a licensing program was implemented by the Provincial Government as required by Health Canada after the outbreak of BSE. Most of the small, previously uninspected abattoirs shut down and only 11 moved to the new inspection system immediately, while others took a couple of years to come into compliance. Since 2004, there has been a steady increase in the number of abattoirs in BC; there are currently 65 abattoirs licensed and inspected by the BC Ministry of Agriculture, and an additional 60 licensed, but not inspected, by the BC Ministry of Health. This increase in facilities is occurring in rural areas where unmet demand for local processing has encouraged small family and community-based abattoirs to open. These craft abattoirs and butchers will continue to have the largest growth potential in BC.

Table 2: BC Abattoir Classification

Licence Type	Activities Permitted	Sales Permitted	Geographic Scope	# of Animal Units	Oversight
Class A	Slaughter, and cut and wrap	Retail and direct to consumer	B.C.	Unlimited	Pre and post slaughter inspection of each animal
Class B	Slaughter only	Retail and direct to consumer	B.C.	Unlimited	Pre and post slaughter inspection of each animal
Class D	Slaughter only (own animals and other peoples' animals)	Retail and direct to consumer	Sales restricted within the regional district where meat is produced	1-25	Periodic site assessments and audit of operational slaughter records
Class E	Slaughter only (own animals only)	Direct to consumer only	Sales restricted within the regional district where meat is produced	1-10	Periodic site assessments and audit of operational slaughter records
Federal	Slaughter, and cut and wrap	Retail and direct to consumer	Canada and Export	Unlimited	Canadian Food Inspection Agency

<https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/food-safety/meat-inspection-licensing>

In 2009, a group of BC provincially inspected abattoir operators decided to form a stand-alone association dedicated to addressing challenges faced by abattoirs, and the BC Association of Abattoirs was formed. This group has been instrumental in helping the meat industry by working with livestock producers, retail and wholesale butcher shops and chefs to encourage keeping BC meat in BC.

In September 2015, the Ministry of Agriculture took over inspection at provincially licensed abattoirs from the Canadian Food Inspection Agency and the BC Center for Disease Control. Sometime in the next couple of years, it is expected that it will also take over inspection from the Ministry of Health for the 'cut-and-wrap' activities at those abattoirs that have a butcher shop attached to their abattoirs (Class A).

Factors Affecting the Butcher and Abattoir Industries

In 1990, a large multinational meat processing establishment opened in High River, Alberta and started the process of changing the nature of the workforce required by the industry from a skilled trade to a low-skilled assembly-line role paying \$7.50 per hour.

Later in the 1990's, the large retail grocery stores in BC cut wages paid to their butchers. This enabled the stores to sell meat at lower prices, which then affected the independent and small chain butcher shops and Class A abattoirs. The smaller operators had difficulty competing on price, so they too had to drop the wages they were able to pay. This changed the living wage aspect of becoming a butcher. Soon after, the large chains went to central packing houses to disassembly style operations thereby reducing the overall skill level required by each person. This further affected the perception that butchering was a highly skilled trade.

Corresponding with reduced industry wages, enrolment in industry training programs declined and training programs closed. This phenomenon was not restricted to BC- it was seen across Canada, the US and parts of Europe. Training requirements to work in abattoirs as meat-cutters could be met in three months; down from the four-or-so years required to become a Master Butcher.

Competition from other, expanding sectors and the impact of immigration policies in different jurisdictions affects the meat industry in BC. Many potential butchers went into traditional construction trades, such as electrician, carpentry, and plumber, since there were a lot of well paying jobs in these fields.

Seasonality

As a result of the majority of red meat animals being ready for slaughter between August and January, booking times are difficult to get unless they are made well in advance. During this time, issues with producers not showing up, showing up with too many or too few animals or the wrong species can add to scheduling challenges. In addition, since there is less work for the remainder of the year, there is difficulty retaining trained and qualified workers at the abattoirs. Poultry abattoirs face the same issue between the months of April to November.

Ideally, animals should be raised to be finished throughout the year. This will not only alleviate the over-capacity issue, but will also enable fresh meat to be available to stores, restaurants and consumers throughout the year. This is important since continual flow of fresh inventory is needed in Lillooet to compete with meat products coming in from other parts of the province and Alberta.

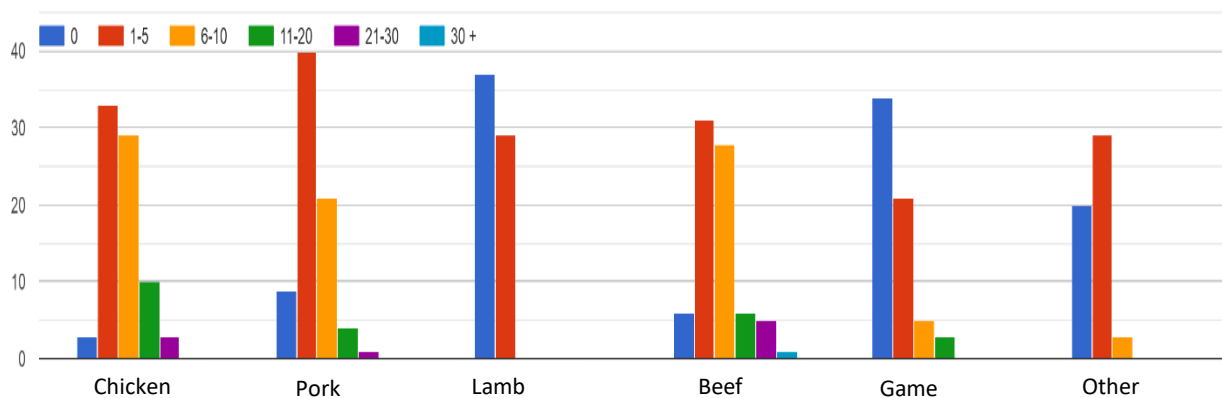
To achieve finished meat that is consistent in taste and quality, it is important that producers follow the same or similar feeding regimens within any diversification group such as grass-fed, organic, raised without hormones or antibiotic free.

3. Meat Consumption Information

Meat consumption is a measure of the demand for meat products in the region, and a means to assess growth in the sector. Primary data of the Lillooet region meat profile was collected from an online survey with 80 respondents, over a time frame of August 2018 – November 2018. As part of the online survey, Lillooet region residents were asked which types of meat they eat and the frequency per month. Chicken, pork and beef were the top three protein choices, consumed with the most frequency (some respondents consuming these proteins over 20 times per month).

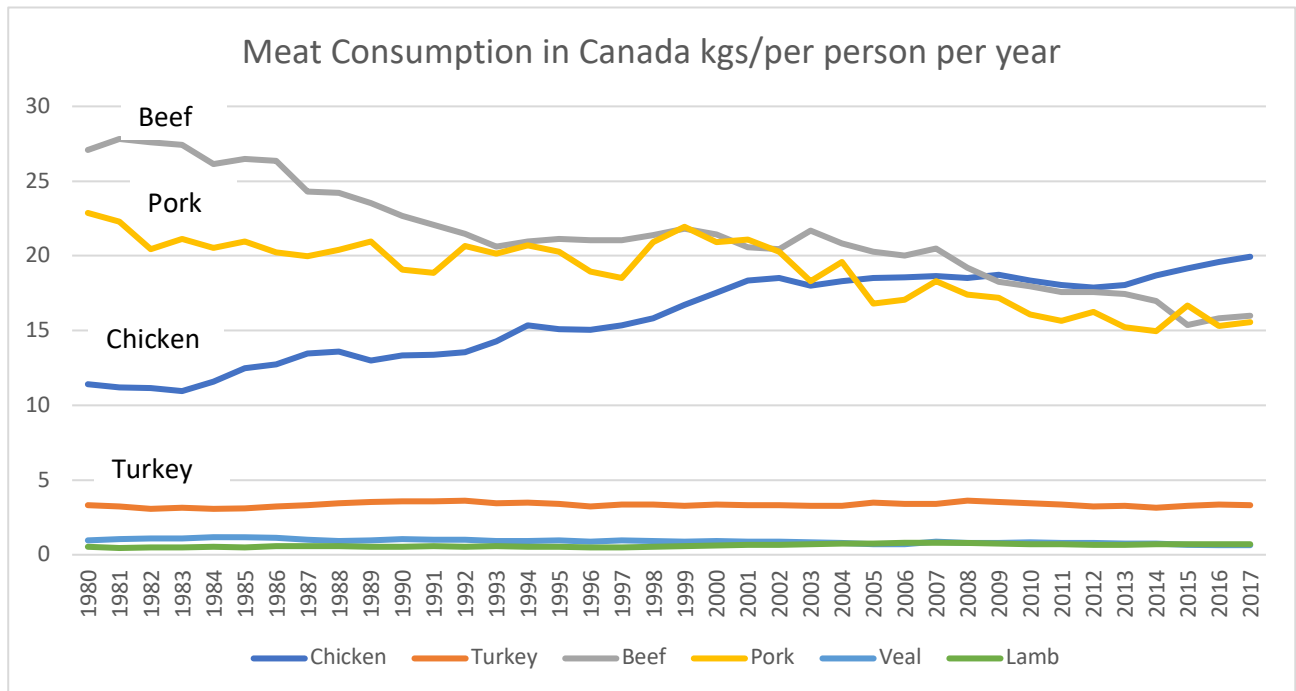
Chart 1: Lillooet and Area Meat Protein Consumption

How many times per month do you consume:



This provides a snapshot of the region and does not capture the seasonality of meat consumption based on time of year. However, the Lillooet residents surveyed are in line with the profile of meat consumption in Canada (see graph below). In the Lillooet survey consumption of turkey and veal was not directly measured and so would be captured in numbers of the “other” category. Of note, from the respondents surveyed, game is consumed more frequently than lamb.

Chart 2: Canadian Meat Protein Consumption



Source: Agriculture and Agri-Foods Canada: <http://www.agr.gc.ca/eng/industry-markets-and-trade/canadian-agri-food-sector-intelligence/poultry-and-eggs/poultry-and-egg-market-information/industry-indicators/per-capita-disappearance/?id=1384971854413>

Table 3: 2017 Meat Consumption in Canada Per Person (kgs)

Chicken	19.94
Turkey	3.32
Beef	16.01
Pork	15.56
Veal	0.64
Lamb	0.72

Source: Agriculture and Agri-Foods Canada: <http://www.agr.gc.ca/eng/industry-markets-and-trade/canadian-agri-food-sector-intelligence/poultry-and-eggs/poultry-and-egg-market-information/industry-indicators/per-capita-disappearance/?id=1384971854413>

Using the above table and extrapolating to the Lillooet area, the following table indicates how many animals of each type would typically be consumed per year.

Table 4: Animals Required for SLRD Area B

	Amount Consumed per Year (kgs) in SLRD B **	Animal Avg Live wt. (kgs)	Average Retail % Meat per Animal *	Average Retail Meat Weight per Animal (kgs)	# Animals Needed in SLRD B **
Chicken	76,271	3.63	70%	2.54	30,026
Turkey	12,699	13.61	70%	9.53	1,333
Beef	61,238	635.03	43%	274.33	223
Pork	59,517	99.79	57%	56.88	1,046
Veal	2,448	362.87	43%	156.04	16
Lamb	2,754	45.36	40%	18.14	152

*This is based on industry averages and depends on carcass quality

** Resident population of 3,825

Pounds of Meat= (Dressing percent x Carcass cutting yield) x Live weight

Dressing Percentage (DP)= (Carcass Weight / Live Weight) x 100

4. Challenges

It is recognized that there are obstacles that need to be overcome to ensure successful start up of a business enterprise such as a Lillooet abattoir. Developing business strategies such to address these challenges mitigates risk and allows for informed decisions.

There are a number of challenges, as with all start-up companies:

- Obtaining capital funding in the form of grants from the government or funding in the form of loans
- Determining the organization structure to support the initiative – a cooperative, privately owned, community owned, etc.
- Human Resources and management that can address all aspects of operations from processing to options for developing value-added services
- Having livestock producers transition to finishing more animals
- Having livestock and poultry producers finish animals throughout the year
- Developing and growing the demand for locally produced meat
- Encouraging local stores and restaurants to carry locally produced meat
- Finding the best location to locate the business
- On-going operational cash flow

5. Inventory of Existing Facilities

Currently, there is one Class D licensed slaughter-only abattoir in the Lillooet area. The abattoir operator meets the license's allowed volume (25 animal units) processing poultry mainly from their own farm and hence are unable to process their own red meat animals or other's animals. There are no licensed and inspected abattoirs in the Squamish-Lillooet Regional District.

The restrictions with a Class D license include only being able to sell within the regional district. Hence, if a livestock or poultry producer wants to sell to a store, restaurant or a third party outside the regional district they must take their live animals to an inspected abattoir.

Closest licensed and inspected abattoirs:

- Kam Lake View Meats – 144 kms from Lillooet
 - Processes beef, bison, lamb, pork and other red meat species
 - Class A: Provides slaughter as well as cutting and further processing (e.g. sausage)
 - Does purchase finished animals for its own retail
- Rangeland Meats – 200 kms from Lillooet
 - Processes beef, lamb and pork
 - Class A: Provides slaughter as well as cutting and further processing (e.g. sausage)
 - New abattoir – started in 2018
- Rainer Custom Cutting – 252 kms from Lillooet
 - Processes beef, bison, lamb, pork and other red meat species
 - Class A: Provides slaughter as well as cutting and further processing (e.g. sausage)
 - Does purchase finished animals for its own retail
- Copper Mountain – 145 kms from Lillooet
 - Class B: Processes chicken, turkey and duck

Local butcher services

- There are currently no stand-alone butcher shops in the Lillooet area
- There are no licensed game cutting facilities. Hunters either do their own, get cutting done by an unlicensed facility or take to a licensed game cutter in a different outside the area.
- Grocery stores have limited ability to cut meat and are not able to take a carcass and break it down into retail cuts
 - The local Buy-Low has the capacity to butcher meat, but is currently not accessing substantial local meat sources.

6. Potential Abattoir Sites

When choosing a location, the following considerations should be taken into account:

- Proximity to livestock: the abattoir should be located closest to the largest supplier of finished livestock
- Land Ownership: ideally the land should be used 'free of charge' and/or have a low-cost lease
- Direct road access
- Ease of livestock truck access and turnaround
- Potable water availability
- Suitable size to accommodate the abattoir
- Availability of additional land for expansion
- Secondary buildings nearby to be used as livestock pens, offices or storage
- The ability to compost solid and liquid waste on-site
- Flat, with a gradual slope to help keep the area dry
- Suitable distance from other incompatible businesses and residential areas
- Current usage of site
- Low level of objections by surrounding tenants or neighbours
- Land zoning should allow the operation of an abattoir
- Proximity of the facility to the abattoir operator/manager

At the beginning of this feasibility study Spray Creek Ranch, who has the current Class D licenced abattoir, expressed interest in putting a Class A abattoir at their location. Half way through this study, it came to the attention of the BC Association of Abattoirs that a moveable Class B red meat slaughter unit was coming available for a low-cost lease. This information was shared with Sarah Petznick from LAFS and then Tristan Banwell from Spray Creek. Tristan has now obtained this slaughter unit and moved it to their site. This ranch is ideally suited to be not only be the operator of an abattoir for the Lillooet region, but also the anchor livestock supplier that will ensure the venture is a success. Their location meets all of the key points above, and they have already begun the process of ensuring the Regional District and the Agricultural Land Commission will allow them to operate a Class A abattoir on their land. They will renovate the building attached to their Class D abattoir and turn it into a butcher shop with the required refrigeration and freezer space.

This is an excellent move forward for the community and doesn't stop the opportunity for a poultry abattoir, a second red meat abattoir or a butcher shop to open. They can be built in town, on reserve or on another ranch.

7. Inventory of Local Meat Production

Livestock Ranches and Farms

Table 5: Livestock Numbers on Census Day 2016 (except poultry – which is yearly production)

	Unit of measure	SLRD		SLRD District B	
		2011	2016	2011	2016
Total cattle and calves	Number of farms reporting	50	46	23	19
	Number of animals	4,149	2,425	2,785	1,355
Steers, 1 year and over	Number of farms reporting	25	18	9	8
	Number of animals	332	163	80	80
Heifers for slaughter/feeding	Number of farms reporting	13	10	4	4
	Number of animals	123	154	29	x
Total sheep and lambs	Number of farms reporting	6	13	1	2
	Number of animals	155	215	x	x
Lambs	Number of farms reporting	6	12	1	2
	Number of animals	92	119	x	x
Pigs					
Total pigs	Number of farms reporting	7	7	1	2
	Number of animals	x	59	x	x
Grower and finishing pigs	Number of farms reporting	3	4	0	1
	Number of animals	16	x	0	x
Poultry production (yearly)					
Broilers, roasters and Cornish production	Number of farms reporting	5	6	0	4
	Kilograms	840	x	0	1,366
	Pounds	1,852	x	0	3,012
Turkey production	Number of farms reporting	2	2	0	1
	Kilograms	x	x	0	x
	Pounds	x	x	0	x
Goats	Number of farms reporting	4	4	2	1
	Number of animals	20	25	x	x
Rabbits	Number of farms reporting	1	2	0	1
	Number of animals	x	x	0	x
Bison (buffalo)	Number of farms reporting	0	0	0	0
	Number of animals	0	0	0	0

Raw data from Statistics Canada - Squamish-Lillooet, British Columbia and Area B
(note: Information on Area 'A' is not included by Stats Canada)

x : suppressed to meet the confidentiality requirements of the Statistics Act

8. Community and St'át'imc Support

To gauge the level of support for an abattoir in the region, meetings were held, a questionnaire developed and one-on-one conversations were held with attendees at the local farmer's market.

St'át'imc Community

A presentation was given during the early stages of the feasibility project to the St'át'imc Tribal Council to determine the level of interest and participation in an abattoir. In attendance at the meeting were all the St'át'imc Tribal Council Chiefs, and from the Lillooet Agriculture and Food Society were Vivian Birch-Jones and Sarah Petznick and Nova Woodbury from the BC Association of Abattoirs.

There was considerable interest in the possibility of a local Class A abattoir and several members have training and experience in meat cutting. A local abattoir creates an opportunity for the St'át'imc community to raise animals for themselves without having to do the butchering as well as creating a business opportunity by selling finished meat products. The possibility of having a local facility that they can hang game and have cut and processed was also something that was of interest.

General Community

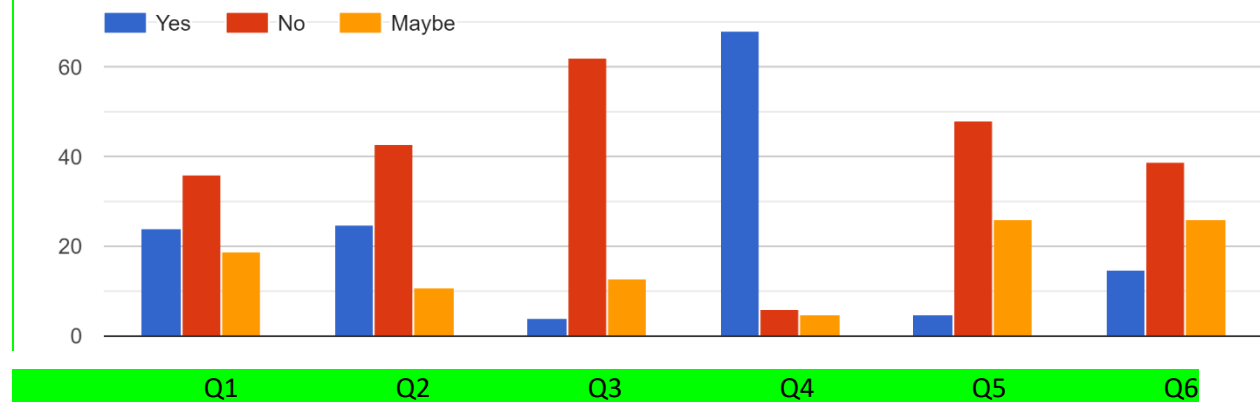
To determine the level of interest in the community at large, two initiatives were undertaken. One was to speak on-on-one with Lillooet area residents, and the second one was to develop a questionnaire (both paper and on-line). Copies of the paper questionnaire were given to St'át'imc Tribal Council to make available to their communities and the paper questionnaire was used to interview attendees at the farmer's market in Lillooet.

There were over 80 responses to the questionnaire and there is considerable amount of support for a local abattoir and ways of participating.

Here are some of the responses to the question regarding participation in an abattoir:

Chart 3: Abattoir Support

How would you like to participate in supporting a local abattoir?



Question:

1. Raising poultry or livestock and using the local abattoir
2. Using the local abattoir for game cutting
3. Working at the abattoir
4. As a consumer of local meat
5. As an active participant with financial support
6. As an active participant with in-kind contributions

Individual responses included:

- Lobby government
- Set up coop for producers and meat distribution hub/store
- Spreading the word about the abattoir
- I'm unsure yet as we just moved here
- Promoting the idea
- Making sure the meat 'is' organic no sprays or fillers and are free to be what they are.....otherwise the meat is ruined and that's a waste.
- If it was Kosher
- Promotion through website
- Possibly as part of a definitive local initiative for food security in our region.
- I would buy all of my meat products locally
- Local I would trust
- I would support it politically to further the plan that you come up with
- sic "...Squamish Food Policy Council ... are about to start an agriculture plan in collaboration with SLRD Area D and DOS. So happy to ensure that our vision, strategies and implementation aligns with other regional efforts".
- Supportive as local naturalist / lower food miles and known quality of meat

9. Abattoir Configuration Options

There are a couple of combinations of abattoirs that can be considered. The first one is the structure of the facility: mobile or stationary. The second is the service offered: slaughter only or slaughter and further processing. Generally mobile abattoirs are slaughter only, while stationary abattoirs can be slaughter only or also provide further processing.

Mobile Abattoirs

Mobile abattoirs are able to move from farm to farm and offer only slaughter services. Most mobile units come with a cooler, but unless the unit is left on the farm overnight, carcasses from beef, lambs and pigs are not chilled to the required 4°C before being transported to a cutting facility as per the Meat Inspection Regulation.

Mobile abattoirs have limited processing volume capability and there is little or no chance for expansion. In addition, with no ability to cut and further process, the meat still needs to be transported under refrigeration to a butcher shop.

The BC Ministry of Agriculture is currently doing a detailed analysis of the advantages and challenges with having a mobile abattoir. The report is expected to be produced in early 2019, but early findings are that food safety standards, as well as those for animal welfare, are difficult to maintain with mobile abattoirs and a substantial amount of financial support is required to operate them above any cost recovery done through processing charges. Conversations with previous Class A and B mobile operators, both poultry and red meat, support these early findings and in fact, all BC Class A and B mobile abattoirs are set up as stationary facilities at this time.

The main attraction with mobile abattoirs is animal welfare. The animals don't have to undergo the stress of being transported to an abattoir and are able to stay in familiar surroundings. However, it is important to note that if the animals are handled properly during loading, the driver is familiar with transporting animals and the transport regulations, the animals are handled properly at unloading and are given a rest time prior to being processed, the stress of transport is negligible.

Even if the abattoir is brought to the farm, proper animal pens, alleyways and knocking areas need to be in place at the expense of the farm. In addition, Ministry of Environment approved waste plans need to be in place, water must be tested by the local Health Authority for potability, the docking station must

meet Ministry of Agriculture standards, and carcass cooling facilities must be nearby as well as a licenced 'cut-and-wrap' facility in order to maintain a cold chain for food safety.

From the mobile abattoir operator's side, trained staff must travel where the unit goes and be paid for this travel time, and transport costs are high for the unit itself. The time to travel there and back as well as the set-up and tear-down time all add to the length to the processing day and aren't part of productivity time. Then there is the difficulty of cold weather operation.

Based on the experience and input from past operators of mobile abattoirs in BC, we do not see a mobile abattoir as viable option for the Lillooet area, particularly a red meat mobile unit. At the present time, there is insufficient poultry being raised in the area but if that situation changes, a mobile unit for poultry may be a consideration. There are units currently available in the province.

Protocol for Approval of Mobile Docking Sites in BC

The operation of a Class A or B licensed and inspected mobile abattoir is limited to approved docking sites only and must have a Ministry of Agriculture Meat Hygiene and Agri-Food Inspector (Inspector) present. The requirements for each docking site vary slightly depending on the design and features of the mobile slaughter unit.

Criteria for approval:

1. A mobile docking site must have a pad of suitable, drainable material (e.g. washed gravel, pavement, concrete) large enough to extend around the mobile unit. The pad must be accessible by the mobile unit and the Inspector's vehicle in all foreseeable weather and ground conditions that could be encountered during the mobile unit's operation.
2. The Regional Health Authority must confirm that they have no objections or outstanding concerns with the water supply servicing the docking site for the mobile unit and that it meets required potable standards.
3. A docking site must provide a connection between the docking site's water supply outlet and the mobile unit that is suitable for potable water.
4. Waste, including solid waste and waste water, must be handled and removed from the mobile unit so that it does not present a risk of contaminating meat produced in the unit. Furthermore mobile unit operators and docking site owners must ensure that their waste collection and disposal

protocols are acceptable to the regional Ministry of Environment and Climate Change Strategy officials.

5. Cooling equipment (e.g. refrigerators and freezers) must be available for immediate storage of carcasses to reach 4°C or lower once they exit the mobile unit.
 - If carcasses are being transported, appropriate equipment and processes must be in place to maintain carcasses at 4°C or lower during transport.
 - The specific requirements will depend on the particular circumstances including: seasonal weather conditions (ambient air temperature); distance; and time duration of the journey.
 - Provisions could be as simple as packing the chilled carcasses with ice in coolers for transport.
 - Depending on the fate of the carcasses (personal use versus retail or use in a food establishment) other agencies such as the Regional Health Authority may have oversight authority in relation to transportation and subsequent handling of carcasses.
 - Carcass owners are encouraged to contact their Regional Health Authority to discuss appropriate handling of carcasses after they leave the docking site.
6. The docking site must provide equipment and potable water for sanitizing the mobile unit before the unit leaves the docking site.
7. Operators must provide qualified staff who are trained in the proficient slaughter of poultry and livestock.

In terms of approval process, the Ministry of Agriculture will visit each proposed docking site to confirm that it meets the criteria for approval. The docking site application form must be completed and provided to the Meat Hygiene and Agri-Food Inspector at the beginning of the site review visit. Once the Ministry of Agriculture confirms that the site meets the criteria for approval and the Regional Health Authority approves the water supply, the site is eligible to be designated as an approved site by the Ministry of Agriculture.

Following the site review, the responsible Inspector will forward the docking site application and recommendation to the Meat Inspection Program at Ministry of Agriculture for consideration and final approval. Approved sites will be added to the mobile unit's Class A or B slaughter establishment licence.

Additional details on the protocol for approval of mobile docking sites can be found at https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/food-safety/meat-inspection/protocol_for_approval_of_mobile_docking_sites.pdf

Stationary Abattoirs

Stationary abattoirs can be slaughter only (Class B) or slaughter and further processing (Class A). The main advantage of a stationary abattoir over a mobile one is its ability to expand and process higher volumes of livestock. Also, producers from outside the catchment area could use the abattoir, it encourages producers to increase livestock numbers, and inspires new small-scale producers to start up. Stationary abattoirs can operate year-round without weather concerns, all the infrastructure for ensuring humane handling is maintained daily and the important food safety refrigeration is on site. Potentially, cut-and-wrap, further processing and freezing would also be available.

The cost of building a stationary abattoir can be higher than purchasing a new mobile abattoir (which is between \$200,000 and \$300,000) but a number of factors affect the cost of building a stationary plant. Estimates on the cost of building a Class A abattoir vary greatly and depend on the type and size of building. A small, 1700 sq. ft. Class A abattoir recently built in BC cost in excess of \$600,000 and included the building, water hookup, power hookup, wiring, plumbing, septic and equipment; the cost of the land is not included in this total. All of the equipment was new and contractors were hired and paid.

There have been poultry and red meat Class A abattoirs that have been built using shipping containers (regular and refrigerated) that would greatly reduce the building cost while the cost of equipment would remain. Instead of \$200,000 for a 1700 sq. ft. building only (the cost of the recent Class A abattoir), 6 containers could be purchased for \$30,000-\$40,000. A pre-fabricated steel building could also be purchased for about \$50,000.

Cost savings can also be made if:

- Used equipment is purchased (including coolers and freezers) that are still in good shape and meet food safety requirements
- The anchor tenant or community team donate time for welding, plumbing, wiring, etc.
- Existing buildings are nearby that can be put into use as holding pens, dry storage or offices
- A site is picked that already has some of the required infrastructure
- Land is donated by the town or regional district

- The abattoir is located on the land of the 'anchor' customer and/or facility operator

To improve the viability of the abattoir, it will be advantageous if the abattoir operator has some of the following skills:

- Welding - Many tasks during startup and operation of a meat processing plant require welding, from building pens to hanging rails for carcasses. If an owner or manager possesses this skill set there is a potential for significant savings in both startup and routine maintenance during operation.
- Plumbing - The ability to unclog a drain, clean a grease trap, maintain a septic system, or make repairs to cracked water pipes can help keep costs down.
- Wiring- A basic knowledge of how to wire outlets and hook up equipment can save money by avoiding expensive electrician service fees each time a new piece of equipment is installed.
- Equipment repair - The ability to repair and perform maintenance on equipment can save the business from expensive service agreements or costly out-of-plant repairs. This also helps in the purchase of used equipment. Having the ability to repair or rebuild equipment can help reduce short-term maintenance costs and longer-term capital replacement costs.
- Business manager - Basic management skills are needed to manage a business, and some of the skills that are helpful in a meat processing plant can be scheduling, inventory management, supervisory skills, and time management.

To successfully operate and manage a business of this type will require many skill sets. Owners who can fulfill some of these tasks can reduce costs in these areas. Other ways to manage costs are to hire employees who can fulfill some of these tasks as well as their meat processing duties.

In conclusion, a stationary Class A abattoir is recommended for the Lillooet area. There are no stand-alone butcher shops, so it is important that the abattoir also perform the necessary carcass breakdown, cutting, packaging and sausage making that customers demand. A Class A abattoir will also be able to be used as a game cutting facility to provide another un-met need in the region (the Ministry of Agriculture has guidelines for licensed and inspected abattoirs for processing game animals).

10. Market Research and Consumer Information

Throughout Canada there is a local food movement which encourages sustainable food production and processing to enhance the economic, environmental and social health of communities. The nature of Lillooet and surrounding communities has led to a strong interest in the concept of purchasing locally. This is evident with the increasing number of stores and restaurants interested in purchasing local foods and overall consumer awareness. Not only are permanent residents seeking local food, but visitors are also asking more questions about where the food in the stores is coming from.

After reviewing feasibility studies done in other regions of the province that have actually put in abattoirs, the number and type of animals forecast to be put through are much different than the research indicated. This is a common 'new product' market research challenge and as a result the outcome is difficult to predict. This is due mainly to some ranchers choosing to still send their finished animals to their current abattoir, and some ranchers stating they want to finish more animals but in the end stick with their breed-and-sell program. Also, knowing that an abattoir is nearby, new small-scale animal operations start up.

Scenario 1

A new BC Class A abattoir predicted that it would capture 100% of the finished beef animals in their catchment area. The survey indicated 105 were currently finished and sold in the area and it was extrapolated, based on the market research, that during the first year of operation, this number would increase to 200 then 247 in the third year. In reality, the number of beef animals done in the first year was only 60 with only a small increase during their second year of operation. The abattoir did process more small animals (mostly pigs) than expected and brought in considerably more game for cutting than anticipated. The abattoir operator noted that a number of small livestock operations have started up as a result of having a nearby Class A abattoir.

Scenario 2

This new BC Class A abattoir predicted that during its first year of operation they would do mostly their own finished cattle and pigs. While they offer custom processing, they were not expecting to receive

much during their first year. However, within months of opening they were far exceeding the number of custom animals predicted and were suddenly faced with a need for more workers.

The most important thing for an abattoir in the Lillooet area to remain viable is to have a base number of animals guaranteed to go through that will at a minimum meet the cost of operating with some left to pay down the building investment. This number will depend on the size and cost of building the abattoir and support from both the consumer and rancher community will be needed. The next stage of the process is to do a detailed assessment on the financials for different scenarios.

MARKETING OVERVIEW

Developing a marketing strategy can help promote the abattoir business and regional producers, target the right customers, allocate resources appropriately to key areas and protect the integrity of a “Lillooet Grown” brand. A strategy partnering local producers that would be using the services of the local abattoir and the local abattoir could be mutually beneficial. Key stakeholder producers could be the nucleus to build messaging, and outline what is required for consistent quality of products. This would be especially relevant if the abattoir was operated on and by a producer ranch. For the purposes of this report, a potential marketing strategy was developed based on feedback from industry specialists, interviews with potential abattoir customers and feedback of survey from Lillooet residents/stakeholders.

Primary data from the Lillooet region meat profile collected from an online survey and personal interviews, showed that the top three sources that residents were getting their meat from was the local grocery store, raising their own meat or getting product directly from the producer. The survey indicated that Lillooet residents used their local grocery twice as frequently as grocery stores out of town. This confirms that there is a good support from the community to use their own local retail services, as well as, buy direct from local ranchers.

Currently, Lillooet has a licensed D facility on Spray Creek Ranch. The D license only allows sales in their regional district and is restricted to 25 animal units per year (1 animal unit is the

equivalent of 1,000 pounds live-weight). Spray Creek Ranch was established in 2014 and the Banwell family live on and work the ranch. Spray Creek Ranch produces grass-finished beef, organic pork, organic poultry as well as on-farm Class D meat processing plant. They have an online store and offer some value-added products such as pepperoni, and boxed meat. Their products are mostly sold through direct farm marketing and are distributed through regional farmers markets. They plan to expand operations by taking over the BC Investment Agriculture Foundation's abattoir trailer and becoming an inspected "A licensed" facility. This will expand their customer base by allowing for sales outside the Lillooet region, and also enables them to bring the packaging in house. The new abattoir currently scheduled to start operation in the spring of 2019 with the initial foundation for operations being Spray Creek Ranch livestock, but eventually expanding services to other producers in the region. This provides a new market prospect for regional producers that are currently not finishing animals and/or not marketing beyond personal consumption. The local abattoir also allows for the opportunity to expand product lines to meet customer unmet needs in the region.

Developing a marketing strategy allows for a better understanding of market parameters by outlining customer product preferences, current unmet needs, key production practices, packaging, sales, marketing resources and distribution systems. Outlined are recommendations for the Lillooet abattoir to develop a promotions package that would highlight the local farm stories behind the processing plant, focus on natural "niche" markets, increase gross margins by introducing value added product lines and provide custom processing and cut-and-wrap services for producers in the region. Key areas to focus on for successful implementation of the marketing strategy are adequate resources, especially in the areas of labour, marketing/sales, and maintaining brand integrity. The brand is reinforced by ensuring the plant operations reflect the values, quality and services in line with what local producers and a "Lillooet Grown" brand should represent.

MARKET ANALYSIS

Market research has shown that although meat processed in BC is at a cost disadvantage, most consumers are willing to pay a higher price point for farm branded, quality local meat. Food safety, quality and consistent supply are key requirements of all retail purchasers, and this was confirmed by interviews with key stakeholders in region. Other factors recommended to help market penetration would be developing professional packaging and labelling.

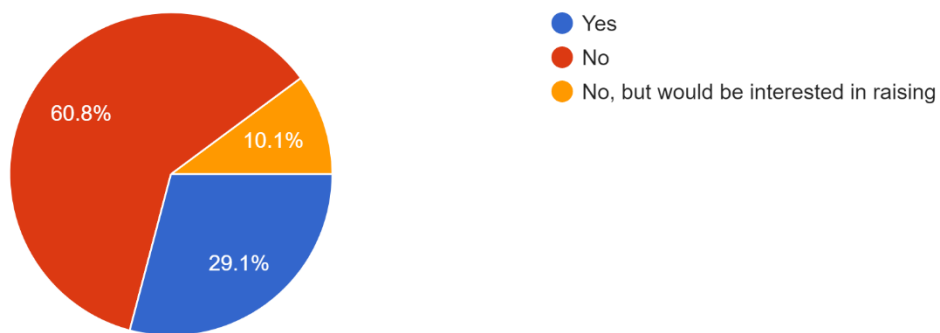
The stakeholders interviewed for this report, and supported by industry review, confirm that the demand for locally grown food products is increasing. Many consumers are looking for “natural” branded organic, hormone/antibiotic free products. There is also opportunity in the area of value-added product lines such as ready-to-eat meats that includes full home replacement meals and various sausage/deli items. In general, consumers want to know where their food comes from so farm source branding or the “Lillooet Grown” brand would target this need. In general, producers and retail customers would like more information on cuts coming from the plant with focus on quality (grade), food safety, traceability, and animal welfare practises. However, providing this for customers has a cost associated including packaging, labelling and also labour costs. A way to deal with these costs is economies of scale and to establish minimal orders for animals coming into the plant. A critical factor for growth of the plant is capital cost improvements and labour resources. Overall there is a lack of skilled labour in the BC meat industry; however, there is an opportunity to draw some of the skilled labour directly from the Lillooet region and there are meat processing trained personnel from neighbouring ranches and First Nations. From the Lillooet online survey, more than 30% of respondents indicated that they had some slaughter, cut and wrap experience. Even though this indicates community expertise that could be leveraged to support the growth of an abattoir, the reality is that only a small number of respondents indicated that they would be willing to work at the local abattoir. In addition to local workers, the Lillooet abattoir can also recruit from the lower mainland of BC where the high standard of living is prohibitive to people

in the industry. The Lillooet region offers a natural rural lifestyle with a good standard of living with great quality of life.

As the demand for Lillooet products increases, the economies of scale with increased production can also be realized. The Lillooet abattoir should include milestones to increase capacity to meet consumer/producer demand. The maximum projected capacity of a small abattoir is dependant upon the cooler capacity and labour. The Lillooet abattoir could buy livestock direct for sale and/or set up a co-operative with local producers to expand operations in this area. As confirmed from the online survey with a total of 80 respondents, 29.1% residents currently raised their own animals for meat and 10.1% would be interested in raising animals.

Chart 4: Animals Raised Locally

Do you raise animals for meat?



Breaking down the Lillooet meat profile further and focusing on the 31 respondents that raised animals for meat: 51.6% raised poultry and 25.8% raised beef, followed by 22.6% sheep, lamb or goats, and finally 12.9% pigs. The category “other” 12.9% included rabbits, ducks and turkey. The percentages reflect the fact that some ranches were raising more than one animal species. Over 40% of these respondents, if they were not currently raising poultry or pigs, were interested in pursuing the raising of these animals. Cumulatively, all respondents were currently raising 788 chickens, and indicated they could increase capacity by more than double, to 1630

animals (with the caveat that one producer was the basis of this large increase, indicating they alone could raise 1000 animals). Looking specifically at pigs raised in region, the survey showed under 6 pigs per year are being finished. This may be an indicator for potential growth in this area.

The survey highlighted that very few cattle were being finished, with 33% of producers currently not finishing, and those that were finishing are doing under 6 cattle per year. These same producers indicated that they have ability to increase finishing, with 36% indicating they could increase to 10 cattle per year. During telephone interviews with producer stakeholders, all indicated that a local abattoir would offer them the opportunity to finish more cattle, and that it was a business avenue they would investigate. However, they considered a barrier being the fact that they don't currently have markets well established for finished cattle beyond personal use. Comparing this to sheep, goats and lamb, the respondent numbers combined were finishing under 100 animals a year. Potential for growth is indicated by those same survey respondents saying they could finish more than double capacity to total of 267 animals.

Looking at overall BC beef market size, the *potential* finishing capacity in BC is 125,000 beef per year (BC Cattlemen's Association report) with the current *potential* abattoir capacity 50% of this. However, the province is not finishing anywhere near its potential capacity and due to demand being mostly seasonal, the abattoir capacity number is only if animals were sent throughout the year. BC is currently finishing and processing approximately 26,000 cattle [BC Meat Inspection slaughter report numbers, 2016 and 2017]. Most of the Lillooet cattle producers are currently not finishing cattle, but those surveyed said they would take advantage of having a local abattoir. The Cariboo region, where processing customers for Spray Creek Ranch abattoir could be drawn from, producers have the capacity to finish approximately 20,000 cattle; however, the actual number being finished is considerably less. Of note, there are no facilities in BC dedicated to finishing lambs. If the estimated start up target capacity of a Lillooet abattoir is processing 100-150 head a year (cattle, pigs, lamb) and 4000 poultry, they

could easily expand based on local supply and leverage the opportunity provided for processing animals from surrounding producers. The operating capacity of the abattoir would be the only potential barrier as these livestock numbers represents a fraction of the available market.

“Critical Success Factors” as highlighted by other processing plants/distributors in region are:

1. Develop the custom processing and cut-and-wrap services as a foundation of the business
2. Establish some value-added product lines such sausage making
3. Key skilled-labour positions should be filled by individuals with long term expertise in the industry
4. Promote the “local brand” and be able to tell a story about where the meat comes from

CHARACTERISTICS OF THE MARKET

In order to outline the key characteristics of the potential market, primary data was captured from a survey of local stakeholders/consumers and discussion with consumers at a local farm market. In addition, interviews were carried out with eight regional producers and retail customers.

Questions during interviews were directed to gather information on

1. Target customers
2. Price point
3. Customer product and service need
4. Consumer trends and new markets and
5. Distribution.

There was an overall positive response from these potential customers and a recognized demand from local retailers to supply quality local meat.

Target Customers:

If the Lillooet abattoir has an established relationship to the demand and supply end of the value chain with direct to consumer or retail sales, this allows for better efficiencies in controlling inventory, the flow of product and product characteristics, as well as the ability to better fine-tune these to the needs of their target customers. Current production and direct farm marketing are already established in the region with grass finished beef and organic poultry and organic pork (Spray Creek Ranch). The licensed abattoir would allow for increases in market access by providing services to regional producers and it will also allow Lillooet grown products to be sold to outlying areas in BC.

The region with highest population density closest to the processing plant is the lower mainland which has approximately 2.8 million residents (Census 2016). The consumers most likely to be targeted represent about 30% of the population in the lower mainland (extrapolation of census data). These are young (30-50 years old), mid-income families (\$70,000 to \$80,000 per year family income) that care about quality of their food and where it comes from. A secondary demographic region would be the Kamloops/North Okanagan and South Cariboo regions with approximately 146,000 residents (census 2016).

Once the capacity of the plant is established to service the needs of local producers, there is also the opportunity to provide custom slaughtering and processing for other producers in BC. In addition, better market share can be established by providing value-added services such as sausage making. This will increase number of product lines choices available in order to meet the needs of an expanded customer base.

Price Point:

Commodity beef, pork and poultry, purchased in bulk from out-of-province processors such as Cargill in Alberta, currently gives the retailers in BC the best price point. This is due to the economies of scale of these large plants. However, most customers are willing to look at a higher price point for appropriately branded, quality local meat. For these niche markets, food

safety, quality and local origin are more important to customers than price point. So, the “craft abattoir” perception of the family run processing plant in Lillooet BC fits well with this price tolerance. Lillooet consumers/producers support and believe that their farming resources have huge potential for growth, and that the taste and quality of Lillooet produced products are unique. Based on this support, Lillooet products could easily penetrate niche markets with a slightly higher price point.

The pricing strategy for a Lillooet Abattoir would be to stay in line with pricing of their regional abattoir competitors such as Kam Lake View and Rainer Custom Meats processing for two reasons. Firstly, the competitors have established the extent that the market can tolerate these prices and secondly, the realization that penetration pricing would not be required to directly compete as there is enough room in the market for all existing businesses. The estimated pricing for processing of a livestock to primals is in the range of \$1.80 - \$2.00 per kg for beef (including cost of slaughter), pork/sheep goat in the range of \$1.50-\$1.60 per kg. Slaughter only prices for beef range from \$125-\$200 per animal, sheep/pork /goats \$40-\$85 per animal (prices estimated from existing BC abattoirs and from average cost for beef slaughter/processing from BC BeefNet). Chicken processing costs are based on per animal prices with price from \$4.50 - \$7 per bird, with price cuts staggered with increasing processing lot size (e.g. lower prices for over 100 birds per lot). Advice from the industry is to not compete on wholesale prices, which already have lower profit margins and higher risk, as customers are not retained since they are usually only price driven.

The local abattoir also has a chance to do some direct marketing by sourcing meat and providing value added products such as boxed meat and/or ready-to-eat meals. These value-added products have potential gross margins in range of 50%-80%.

Product & Position:

Local ranches and a local abattoir would have a strong customer reputation as family run businesses that produce natural, safe, quality meat products. Local retailers and regional producers can leverage the reputation of the “Lillooet Grown” brand to promote penetration into larger markets and to continue to gain support from loyal local customers.

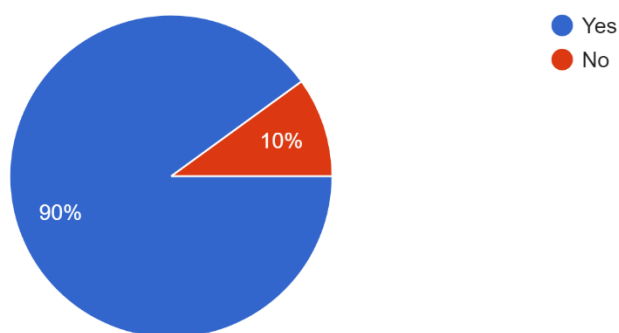
The abattoir should define its business as identified by needs of their local customer base, providing the region with local products and backed by superior service. The business needs to be operated with the same value standards as the “Lillooet Grown” and local ranches. The facility must be well managed and meet or exceed industry standards.

A fully inspected Class A licensed facility offers regional producers the opportunity to expand target regions and add inspected attributes to their marketing promotions. Additional new products would be in niche markets that have room for market penetration in BC. Expanded product lines could include the value-added sector such as jerky and sausage manufacturing. Boxed beef and packing house cuts would also have a market.

Chart 5: Hunters Interested in Cutting Services

Would you be interested in having the local abattoir offer game cutting and wrapping?

20 responses



Hunting is prevalent in region, so processing game would be an unmet service need for the region as exemplified in Chart 5 above. Some of the new products surveyed customers were interested in purchasing are smaller cut/wrapped retail cuts, specialty sausage. Changes in sales could transition from “farmers market distribution” to “retail/restaurant” distribution. Website for direct sales, as well as distribution services to customers outside of regional farmers markets access could be implemented.

Due to the close relationship with the local producers and a local abattoir, the processing plant can manage inventory and scheduling to make the plant more viable. This also means there is opportunity to address unmet consumer demands. The abattoir could benefit from working with producers and adapting finishing schedules to ensure that product demand is met with consistent supply and inventory with higher local demand characteristics are developed. The current customers, and market trends, indicate that there is an emerging market demand for “natural” products.

Placement/Distribution:

The largest market for distribution is the lower mainland based on population density. The local market in Lillooet region should be the first focus for market penetration due to the ability of these regional customers to identify with, and be loyal to, the local brand.

The major competitors are two processing plants in the region; Kam Lake View and Rainer Custom Cutting. Both these plants are running at near capacity due to seasonality of processing demand, so there is room in the market for another abattoir in Lillooet region.

The majority of the meat products are perishable, so shipping becomes a key component of service to the customer. Some of the Lillooet abattoir products will be distributed on site, direct to customers. Product delivery off site to restaurants and butcher shops will be with established perishable product transport companies. Clarke’s Freightways have refrigerated trucks that will

deliver meat to most areas of the province. There is opportunity for the Lillooet abattoir to have preferred rates on freight, or including shipping with product costs, and the ability to pass on these savings to their customers. There is also the opportunity for an independent business to start a refrigerated transportation service.

Promotion:

A lot of promotion and sales in the abattoir industry is mostly face-to-face relationship and “word of mouth”. Small BC abattoirs in general don’t put key resources into promotion of their business, as they are usually already limited by bottle necks during peak seasons and production limits based on the skilled labour at their plant. Abattoirs will often have a website with price lists, services and direct sales. Promotion of products from local ranches, and working with the needs of retailers that welcome local products, will increase local product sales in their businesses and will also increase BC market access as a whole. These promotions are supported by point of sale materials that focus on the family farm, natural product story.

Based on other successful promotions in the industry, a base for sales/marketing would be the “Lillooet Ranch/Abattoir” website, with options for consumers to purchase products outside of the current farmers market routes. This can be tied to local ranch social media pages such as Facebook. [Website estimate costs \$3000-\$5000]. A brochure and inventory sale lists, that tells the “farm story” would be a good value for marketing and would be a fast turnover to implement [initial print and design costs estimated at \$1500]. Other secondary promotional materials for small independent retail outlets would be small rail cards for meat displays [design and print cost \$500-\$1000]. Retailers would support in store demonstrations sampling Lillooet Grown branded products which can be even more successful if a representative from the ranch is present. Shared costs for this “Meet the Rancher” event would be worked out between the supplier and retailer on a “per event” basis.

11. Employment and Opportunities

Direct Employment:

The start up of a Lillooet abattoir offers economic benefit to the region in the form of the creation of new job employment opportunities. The human resources needed for start-up operations is described in table below. It is assumed that management, in addition to their operational responsibilities, would have the expertise to fulfill some of the listed job positions, so management FTE has not been included in estimation of FTE.

Table 6: Breakdown of Full Time Equivalent Jobs Lillooet Abattoir

Job	Responsibilities	Seasonal scheduling	Total Employee Days per year
Two part-time slaughter persons	Slaughter, set-up, processing and clean-up	1 day out of 5 for half the year, 2 days out of 5 for half the year [2x (1x26 days + 2x 26 days)]	156
One part-time scheduling and customer outreach	Scheduling and customer service	1 day per week equals 26 days	26
Two part-time Cut & Wrap	Cut & wrap, set-up, processing and clean-up	1 day out of 5 for half the year, 2 days out of 5 for half the year [2x (1x26 days + 2x 26 days)]	156
One part-time Game cutting person	Game cutting, set-up, processing and clean-up	1 day per week equals 52 days	52
One part-time Delivery person	Local customer deliveries	1 day per week equals 52 days	52
TOTAL:			442 DAYS OR 1.8 FTE

These numbers will grow once the facility increases capacity. Also, during the construction phase, jobs will be created for carpenters, electricians, plumbers, heavy equipment operators, refrigeration specialists, etc.

Indirect Employment:

By having a local and easily accessed licensed and inspected abattoir, it is expected that there will be an increase in the number of both large and small ranches and farmers raising and finishing livestock and poultry. They will have the ability to sell meat directly to local consumers, stores and restaurants as well as larger markets outside the Regional District. This will enable the farmers and ranchers to increase their profitability and enhance their viability.

Initially, it is expected that an Inspector will come from outside the region, but once volumes pick up and there is an increase in slaughtering at the Lillooet abattoir, there may be justification in training and hiring a local person as the Meat Inspector.

New Business Opportunities:

1. New independent butcher shop – The butcher shop could buy carcasses and/or primal cuts and do further butchering as well as offering other local products.
2. Independent game cutter – Once the abattoir is fully up and operating, there may be a need for a separate game cutting operation. Once hunters know that there is a local game cutter, they may be less inclined to do it themselves.
3. Refrigeration/Hanging Cooler Space Business - Although the abattoir will have cooler and freezer space, an additional cooler may be required for aging beef animals. This space could also be used by chefs and retailers who may want to do carcass or primal breakdown themselves but don't have cooler space on their premises.
4. Cold-Chain Transportation Business - There is the possibility that a separate, independently operated refrigerated truck business could start up. This business would enable producers to have the assurance that their product will be delivered to their customers in the safest way possible.

5. Pet Food Business development – Meat and offal that are not used for human consumption could be used for producing pet food. There has been considerable interest in developing a local pet food line by those people surveyed for this study.
6. There is also opportunity in the area of value-added product lines such as bone broth and ready-to-eat meats that includes full home replacement meals and various sausage/deli items.
7. Educational Opportunities – Although not a business opportunity, local schools frequently request parts from abattoirs for biology class to enhance the student’s learning experience. There would also be the opportunity to train local people in the art of cutting meat and making artisanal sausages.
8. Tannery Business Development – There will be an increase in raw material access for a local entrepreneur interested in tanning hides and making value-added products.
9. Tourism – The Lillooet area will be able to enhance their tourism sector by offering locally raised and processed meat. “Lillooet Grown”.

12. Available Expertise and Training Needs

Available Expertise:

A number of individuals have been identified that are not only interested in working at the abattoir, but who have also taken the Retail Meat Cutting apprentice training at Thompson Rivers University.

Although this course does not include the animal handling portion of an abattoir, they will be able to quickly pick up these related skills either through on-site training, or through training offered by a third party.

In addition to animal handling and meat cutting, there is also a need for someone to schedule the animals, obtain and interpret cutting instructions, order supplies, retire ear tags and report animal movement information.

Job Descriptions

There are a number of roles and skills required at an abattoir. Below is an outline of the different types of jobs and steps that will be required to run a successful Class A abattoir. At small, craft style abattoirs, one person is usually responsible for more than one activity. At all times, all workers need to wear appropriate PPE, treat the animals humanely and ensure food safety standards are met.

Set-Up and Pre-Operational Check – This person is responsible for setting up the abattoir and/or the cut and wrap area before production starts. This includes making sure all the equipment is clean, sanitary and in good working order, required supplies are available, knives are sharp, the hot water is operating and any water testing has been carried out. Any deficiencies need to be addressed prior to starting.

Animal handler – This person is responsible for handling the animals during unloading, penning and moving the animals to the stunning area. It is important that this person understands the different species' behaviours, maintains a calm demeanor while handling and uses appropriate tools. Stress at this stage of the process can cause issues with the meat quality and goes against doing 'the right thing'.

The animals need to be assessed for transport fitness prior to being unloaded and handled appropriately. Animals that are sick or stressed need to be separated from other animals.

In addition to handling the animals, this person should be able to assess the conveyance vehicle from an animal welfare perspective, ensure the correct paperwork and animal information is provided and collect any additional information required from the animal owner.

Stunner – This person is responsible for rendering the animal insensible prior to further processing. Appropriate equipment must be supplied and be in good working condition to ensure the animal does not suffer. This is a key position and it is important that the stunner remains calm and are knowledgeable about proper stunning techniques. They need to be able to recognize when an animal is not correctly stunned and quickly do a re-stun.

Sticker/Bleeder – Once the animal is confirmed stunned, the sticker must know the correct method of humanely sticking each species of animal as well as adhering to food safety and worker safety standards.

Skinner/Plucker/Scalder – Depending on the species being processed, the first task after bleeding is to remove any hide, hair or feathers. A certain amount of additional preparation, such as removing the head, dropping the rectum, tying the esophagus, removing mammary glands, etc. may be required.

Eviscerator – The person responsible for evisceration must maintain product safety and quality through the efficient removal of viscera and offal, and to prepare the carcass for the next stage of processing. They need to prepare the rectum, cut through skin and body wall, making cuts from pelvis to breastplate, while avoiding puncturing the viscera. They need to remove the viscera, remove or expose the kidneys, separate the red offal from the white/grey offal and present to the Inspector. They may also be responsible for splitting the carcass along the backbone and removing the spinal cord. When processing beef animals, additional considerations are required for handling Specified Risk Material (SRM – portions of the animal that have been found to house bovine spongiform encephalopathy prions).

Trimming/Washing – At this stage, it is important to ensure food safety and quality by removing potential contaminants (hair, feces, ingesta, etc.) from the animal carcass before the next stage of a

process which is washing the carcass. Washing must be done in such a way that it does not splash back on the carcass or on any nearby carcasses.

Carcass breakdown - The purpose of breaking down the carcass is to provide smaller pieces of meat based on the muscle groupings of the animal, and end use. Depending on the species, different breakdown procedures are followed. This stage of the process requires the use of bandsaws, hand saws and knives. Meat cuts are separated and further trimmed of fat as required.

Finished meat cuts – Once the carcass has been broken down into primals, they are further cut and processed into sub-primals then finished products. This person may also be responsible for grinding trim.

Meat wrapper/packager – Different techniques can be used to wrap and package meat. The traditional butcher paper is mainly used for wrapping custom prepared meat, while vacuum packing, shrink wrapping or trays are used for commercial sales.

Sausage maker – The sausage maker uses secondary materials such as meat trimmings and fat in addition to specific primal cuts to produce ground meat products. They must prepare batches and record information for traceability information and ensure all food safety standards are strictly met including time and temperature.

Food Safety - Following the food safety management system is important to ensure the protection of employees and customers. Failure to comply can have serious consequences, including product that can cause illness and death in the general public. The food safety person ensures the workplace is clean and sanitized, everyone uses safe product handling practices, hazards associated with products being mis-handled are identified and corrective actions are taken when there are unsafe/unsanitary conditions or illness or injury that could impact food safety.

Sanitation and clean up–Sanitation needs to be done on an ongoing, as-needed basis throughout the operating day. At the end of the day, a detailed removal of debris is required, approved detergent/surfactant used and an approved sanitizing method used. Re-sanitizing at the start of the day

is recommended. Different products and techniques are available to improve this stage, and include foamers and hot water sanitizing.

Administrator – As with all businesses, someone needs to schedule the work (animals), obtain and interpret cutting instructions, order supplies, retire ear tags and report animal movement information. Additional tasks could include invoice, banking, paying bills and wages.

Manager – This person is the overseer of the abattoir and is responsible for day to day running of the business and ensuring staff are properly trained and competent at their assigned jobs. They are generally responsible for liaising with compliance authorities.

Traceability, Quality Control, Health and Safety – All the standards associated with different regulations must be met and required records must be kept.

Table 7: Key National Occupational Classification (NOC) Codes

Main Positions				
Job Type	NOC	Skill Level	Job Description	Occurs at:
Slaughter Person	9462	C	Slaughterer, primal fabrication, slaughter house butcher	Abattoir
Master Butcher	6331	B	Cuts meat and makes sausage, etc.	Abattoir and butcher shops
Butcher Apprentice	6331	B	Master butcher in-training	Abattoir and butcher shops
Meat cutter	6331	B	Cuts meat - usually production work	Abattoir and butcher shops

Secondary Positions				
Job Type	NOC	Skill Level	Job Description	Occurs at:
Meat grader	9465	C	Grades Meat	Abattoir
Processor	9461	C	Makes sausage, etc doesn't cut meat	Abattoir and butcher shops
Wrapper	9617	D	Wraps and packages	Abattoir and butcher shops
Shipper	1521	C	Shipper/receiver	Abattoirs and some butcher shops
Counter sales	6421	C	Serves customers, some food assembly	Butcher shops
Supervisor	9213	B	Supervise and coordinate	Abattoir and butcher shops
Manager	0621	O	Retail and wholesale managers	Abattoir and butcher shops
Office staff	1411	C	Office support workers	Abattoirs and some butcher shops
Senior office staff	1221	B	Administration duties	Abattoirs and some butcher shops
Sanitation	6733	D	Clean-up	Abattoir and butcher shops
General unskilled	9619	D	Labourer, various unspecified tasks	Abattoir and butcher shops

Training

Retail meat cutting apprenticeship training is available at Thompson Rivers University in Kamloops and is the only educational institution that currently offers this training in BC. This is nine months of full-time training to gain the knowledge and skills needed to work as a meatcutter in custom cutting, sausage and curing operations, and in supermarkets with their own manufacturing facilities.

The program focuses on productivity training and the business factors of the meat cutting industry. There is specialized training in the accuracy of cutting, knife handling, portion control, merchandising and the utilization of all products. Safety, sanitation, punctuality and personal appearance are stressed throughout.

The program consists of 13 courses, many of which consist of both a theory and practical component. Included are seminars on public relations, customer contact and advertising. Starting at about the mid-point of the program, students undertake two three-week practical work experiences to get a feel for an industry setting.

The only dedicated training institution in Canada that covers live animal handling and the slaughter process is Olds College in Alberta. However, the BC Association of Abattoirs regularly receives funding from the Ministry of Advanced Education to hold Industrial Butcher training throughout BC. These courses focus on animal behaviour, humane handling, skinning evisceration and primary carcass breakdown. The focus is on animal welfare, worker and food safety, knife sharpening and skills, the regulatory framework and processing technique.

13. Regulatory Framework

BC Ministry of Agriculture and BC Meat Inspection Regulation

The BC Ministry of Agriculture is responsible for licensing and inspecting abattoirs in BC according to the BC Meat Inspection Regulation (MIR). The Ministry has developed a Code of Practice for inspected BC abattoirs which interprets the MIR for the operator. Links to these documents and the steps to become an inspected abattoir in BC follow:

1. Contact Meat Inspection Branch of the Ministry of Agriculture
 - Familiarize yourself with the difference license classifications
<https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/food-safety/meat-inspection-licensing>
 - Schedule a site visit or in-person meeting if possible
 - Get an overview of requirements
2. Obtain permission from the Regional District or Municipality
 - Determine your land zoning in your regional district
<https://www2.gov.bc.ca/gov/content/governments/local-governments/planning-land-use/land-use-regulation/zoning-bylaws>
 - i. Look up local by-laws
 - ii. Read the zoning by-laws related to your land
 - This may also involve contacting the Agriculture Land Commission
 - i. Information on the use of ALR land can be found at
<https://www.alc.gov.bc.ca/alc/content/legislation-regulation/alc-policies>
3. Familiarize yourself with the Ministry of Agriculture BC Code of Practice for Abattoirs and the Meat Inspection Regulation
 - https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/food-safety/meat-inspection/provincial_abattoirs_code_of_practice_2018-08-01.pdf
 - http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/349_2004
4. Familiarize yourself with the Ministry of Environment Code of Practice for Slaughter and Poultry Processing which cover liquid and solid waste handling, composting and disposal
http://www.bclaws.ca/Recon/document/ID/freeside/18_246_2007
 - Additional documents and information can be found at
 - i. <https://www2.gov.bc.ca/gov/content/environment/waste-management/industrial-waste/agriculture/slaughter-poultry-processing>
5. Obtain relevant reference material on operating an inspected abattoir
 - <https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/food-safety/meat-inspection-licensing/class-a-b-licences>

- These include links to guidance documents in addition to the Code of Practice
 - i. Meat Plant HACCP guidelines (note: Provincially licensed and inspected abattoirs do not have to be full-HACCP) <https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/food-safety/meat-inspection/meatplanthaccpmanual.pdf>
 - ii. Guidelines for the Safe Transportation of Carcasses <http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/EH/FPS/Meat/GuidelinesfortheSafeTransportationofCarcassesPoultryMeatProducts.pdf>
6. If you are interested in becoming a mobile abattoir
- Checklist for Provincial Slaughter Establishment Approval https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/food-safety/meat-inspection/checklist_for_slaughter_approval_2018.pdf
 - Protocol for Approval of a Mobile Docking Site https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/food-safety/meat-inspection/protocol_for_approval_of_mobile_docking_sites.pdf
 - Docking Site Application Form https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/food-safety/meat-inspection/docking_site_application_form.pdf
7. Stationary abattoirs, including those that are mobile but will not be moved
- Checklist for Provincial Slaughter Establishment Approval https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/food-safety/meat-inspection/checklist_for_slaughter_approval_2018.pdf
 - Protocol for Provincial Abattoir Assessments and Licensing <https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/food-safety/meat-inspection/abattoirassessandlicprotocol.pdf>
 - Application for Slaughter Establishment Assessment <https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/food-safety/meat-inspection/applslaughterestassess.pdf>
 - Application for a Slaughter Establishment License https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/food-safety/meat-inspection/applforslaughterestlic_feb2016.pdf
8. The Ministry of Health and local Health Authorities regulate potable water. They must be contacted to determine water requirements for the proposed facility
- As of 2018, the local Health Authorities still oversee cut-wrap and further processing activities at Class A abattoirs and water requirements for Class A abattoirs are slightly different than for slaughter only Class B abattoirs
 - i. Additional information on materials approved for use at cut-wrap and further processing activities at Class A abattoirs should be acquired as well

- Contact your local Health Authority Environmental Health Officer for further information on the water for your facility – Both Class A and B
9. Abattoirs processing beef animals require additional approval from the Canadian Food Inspection Agency for handling Specified Risk Material – SRM – for BSE control
 - Contact your local CFIA office for details on their requirements for removal, disposal, record keeping and transporting SRM
 - Some landfills take SRMs, but the number that do is decreasing
 - There is also the option to bury on your own land (subject to specific requirements) and permits for this are granted by the Ministry of Environment
 10. If you don't already have a Premises ID, apply for one at
<https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/programs/premises-id>
 11. Red meat abattoirs are required to report animal processed to Federal oversight agencies:
 - Beef: Register as an abattoir at Canadian Cattle Identification Agency (CCIA) to report animal movement and tag retirement (through the Canadian Livestock Tracking System – CLTS)
<http://canadaid.ca/industry/abattoirs.html>
 - Bison: animal movement reporting and tag retirement are done through the CCIA
 - Sheep: animal movement reporting is done through the CCIA
 - Pigs: Register as an abattoir at PigTrace <https://pigtrace.traceability.ca/login/request-account>
 12. Abattoirs processing beef animals in BC must also obtain Form 3's from the animal's owner upon delivery and notify BC Ownership Identification (OII or Brand Inspection) when they are processing beef animals and for whom
 - Periodic site visits will be made by OII staff to ensure proper animal ownership
 13. You should also familiarize yourself with the other activities at abattoirs that the CFIA oversees, including the transport of livestock, selling outside the Province and product labelling
 14. Poultry abattoirs need to consider the data collection requirements and forms for the BC Chicken Marketing Board and the Turkey Marketing Board
 15. Other species are being added to the traceability list but details as of November 2018 are not known

Agriculture Land Commission (ALC)

Land use activities permitted in the Agriculture Land Reserve (ALR) Regulation do not require an application or approval of the ALC if the use complies with any conditions or parameters set out in the ALR Regulation.

Permitted Farm Uses - Section 2(1) of the ALR Regulation

Farm uses are uses in addition to regular farming/ranching. These uses are for the most part directly linked to agriculture and includes “storage, packing and processing” of farm products. Farm uses can be *restricted but not prohibited* by local government. Many of the permitted farm uses are subject to conditions, thresholds, or other requirements.

According to Section 2 (2) of the ALR Regulation

(2) The following activities are designated as farm use for the purposes of the Act:

- a) farm retail sales if
 - i. all of the farm product offered for sale is produced on the farm on which the retail sales are taking place, or
 - ii. the total area, both indoors and outdoors, used for the retail sales of all products does not exceed 300 m² and if at least 50% of that retail sales area is limited to the sale of farm products produced
 - A. on the farm on which the retail sales are taking place, or
 - B. by an association as defined in the *Cooperative Association Act* to which the owner of the farm on which the retail sales are taking place belongs;
- b) Repealed. [B.C. Reg. 117/2015, s. 2 (c).]
- c) storing, packing, preparing or processing farm products, if at least 50% of the farm product being stored, packed, prepared or processed is
 - i. produced on the farm,
 - ii. produced by an association as defined in the *Cooperative Association Act* to which the owner of the farm belongs, or
 - iii. feed required for farm production purposes on the farm;

For more information go to <https://www.alc.gov.bc.ca/alc/content/alr-maps/living-in-the-alr/permitted-uses-in-the-alr>

Squamish-Lillooet Regional District Zoning

According to the Electoral Area B Zoning Bylaw No. 1300-2013 Adopted April 22, 2015 CONSOLIDATED COPY May 2018:

AGRICULTURE means the use of land, buildings, and structures for the growing, producing, raising or keeping of animals and plants, including apiculture, and the primary products of those plants or animals. It includes the harvesting, processing, storing, and sale of agricultural products produced from the same parcel or same farm, the repair of farm machinery and related equipment used on the same farm. It also includes agroforestry, greenhouse and nursery uses, but does not include kennels, or a cannabis production facility.

The above By-Law as it applies to land zoned RR-1, RR-2, RR-3, RR-4 and RR-5, some R-1 (in the ALR) is not in line with the ALR Regulations that allow processing of agricultural products (i.e. an abattoir) provided 50% or more come from the farm or from a Co-Op to which the owner of the farm belongs. Generally, when there is a difference between the ALR Regulations and regional zoning by-laws, the ALR Regulations supersede; however, the Regional District could stick to their by-laws.

The Class D abattoir that is currently in place in the Lillooet area is in the ALR and processes their own poultry. Since there has not been a Class A abattoir set up in the Regional District up to this point, there has been no need to provide for one in the by-laws. Spray Creek Ranch has begun discussions with the SLRD to re-word their by-laws to accommodate the abattoir.

For Details on zoning regulations, go to:

https://www.slrd.bc.ca/sites/default/files/bylaws/pdf/ZB_1300%20Consolidated%20up%20to%20Bylaw%201545_0.pdf

District of Lillooet Zoning

Section 4 of the zoning By-Law 2018, NO. 454 For The District of Lillooet states that the following:

Agriculture means the use of the Land, Building or Structures involved in carrying on a farm business, that complies with normal farming practices and includes but is not limited to:

(a) the growing, producing, rearing, or keeping of animals or plants including but not limited to the following:

- i) bee keeping,
- ii) berries,
- iii) greenhouses, nurseries, specialty wood and turf crops,
- iv) livestock, poultry, farmed game and fur bearing animals,
- v) mushrooms, and
- vi) tree, field and forage crops,

but specifically excludes intensive agricultural activities, such as but not limited to: abattoirs, piggeries, fur farms and feedlots;

(b) the processing of agricultural products harvested, reared or produced by the farm business;
and

(c) the retail sales of the products;

However, Section 29 states:

Uses Permitted and Prohibited in the Agriculture Zone:

a) Activities explicitly designated as farm uses pursuant to the Agricultural Land Use, Subdivision and Procedure Regulation, BC Regulation 171/2002, as amended from time to time, are permitted in all areas within the Agricultural Land Reserve.

b) Unless an activity is explicitly designated a farm use or permitted by this Bylaw pursuant to the Agricultural Land Use, Subdivision and Procedure Regulation, BC Regulation 171/2002, as amended from time to time, the use is prohibited unless approval has been granted by the Agricultural Land Commission for a non-farm use or is subject to Section 23(1) of the Agricultural Land Commission Act, SBC 2002, c 36, as amended from time to time, and the non-farm use is permitted by this Bylaw.

c) Activities permitted by this Bylaw pursuant to the Agricultural Land Use, Subdivision and Procedure Regulation, BC Regulation 171/2002, as amended from time to time, are explicitly identified as permitted uses within individual agricultural Zones; for such activities, conditions of use apply in accordance with this Bylaw.

Industrial means a use providing for the processing, manufacturing, fabricating, assembly, storage, transporting, distributing, wholesaling, warehousing, testing, servicing, repairing, wrecking, or salvaging of goods, materials, or things and may include Land uses such as but not limited to the following:

- i) bulk fuel storage;
- ii) chemical storage;
- iii) aggregate Processing;
- iv) Motor Vehicle washing facilities;
- v) log storage;
- vi) Agricultural processing plants and non-agricultural processing plants;
- vii) Cannabis Operations; and

it may include an Accessory use such as but not limited to the following:

- viii) heavy equipment sales and or rentals;
- ix) recycling services;
- x) retail sales, excluding any Retail Cannabis Sales, but

does not include any of the following uses:

- xi) the burning of any salvaged or recycled materials;
- xii) any uses for which a permit is required under the Environmental Waste Management Act, SBC 2003, c 53, or Regulations, as amended from time to time;
- xiii) the burning of any vehicles; and
- xiv) refuse and garbage dumps;

Speaking with the District of Lillooet's planning department, there appears to be no provision for an abattoir as per their zoning by-law unless it's on approved industrial land, and even then there is not any interest in accommodating one at this time.

For more information, go to: [http://lillooetbc.ca/Recreation-Activities/Recreation-Centre/Lillooet-Zoning-Bylaw-2018-No-454-\(1st-and-2nd-Re.aspx](http://lillooetbc.ca/Recreation-Activities/Recreation-Centre/Lillooet-Zoning-Bylaw-2018-No-454-(1st-and-2nd-Re.aspx)

First Nations Land

At the present time, there are no zoning by-laws that specifically allow, or prohibit an abattoir. During the meeting with the Lillooet Tribal Council, they expressed interest in potentially putting an abattoir on their land; however, no location was specifically identified.

14. Funding Sources

An integrated abattoir business structure that would include some value-added services such as cut and wrap and value-added products is important. This diversifies the business and lowers financial risk by giving the business options to respond to market demand. Of note, moving to more value-added services also requires capital investment in specialized equipment to be efficient. This should be outlined by a financial business plan with milestones for operations and capital costs.

An abattoir from the BC Industry Agriculture Foundation is to go on Spray Creek Ranch Property. The \$200,000 in capital funding for the trailer is a good foundation to reduce needed capital costs.

Different funding sources are available and some depend on whether the company is privately owned, publicly owned or a non-profit.

1. The BC Ministry of Agriculture's Agri-Business Planning Program is one source for grants. Applicants pay fee of \$100 to access \$5,000 worth of consulting business expertise in specialized area such as business structures, developing business plans, value-added, risk management, human resource: <https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/programs/agri-business-planning-program>
2. To continue to develop "Lillooet Grown" brand accessing marketing expertise from Ministry of Agriculture and Investment Agriculture Foundation' Buy BC program Option to access cost share of marketing material and licensing of Buy BC logo from "Buy BC" IAF program <http://iafbc.ca/buy-bc/>
3. BC Agrifood & Seafood Market Development Program: The BC Investment Agriculture Foundation has recently launched the BC Agrifood and Seafood Market Development Program. This program provides Federal and Provincial Government cost-shared funding support for BC farmers, agri-food and seafood processors, co-operatives and

associations to undertake eligible domestic and export market development projects and activities. <http://iafbc.ca/funding-opportunities/market-development>

4. Investment Agriculture Foundation has a number of other programs that offer off-set funding for agriculture and agri-good processing projects. Go to <http://iafbc.ca/funding-opportunities/>
5. Funding through the Ministry of Agriculture and the BC Association of Abattoirs to help develop food safety plans and animal handling procedures for inspected abattoirs. Contact the BC Association of Abattoirs <https://bcabattoirs.org/>
6. On-Farm Food Safety and Post-Farm Food Safety programs funded by the Ministry of Agriculture offer funding assistance for putting in equipment and procedures for improving food safety. At the time of writing, the program delivery organization has not been identified.
7. Northern Development Trust <https://www.northerndevelopment.bc.ca/apply-for-funding/> and their funding matrix at <https://www.northerndevelopment.bc.ca/uploads/FundingProgramMatrix.pdf>
8. Although not a common source of funding, a low-cost lease for land from the town of Lillooet, the Regional District, local rancher or First Nations would also be instrumental in the success of a Lillooet abattoir.
9. The Ministry of Advanced Education through Work BC offers on-site training and upskilling. Go to <https://www.workbc.ca/Employer-Resources/Canada-BC-Job-Grant/What-is-the-Canada-B-C-Job-Grant.aspx> for more information.
10. FCC AgriSpirit Fund - The FCC AgriSpirit Fund is about enhancing rural communities. If your organization is raising money for a capital project (construction of or upgrades to a hospital, medical centre, childcare facility, rink, sportsplex, etc., purchase of fire and

rescue equipment) and your city or town has less than 150,000 people, your project may qualify for a donation between \$5,000 and \$25,000.

The sustainable use of resources contributes to successful community development. Does your project enhance the lives of residents or contribute to sustainability in your community? Examples include upgrades to heating and cooling systems in a community building, installing new windows in a rec centre or purchasing capital items for a recycling facility. If so, we encourage you to apply. For more information, check out FCC AgriSpirit Fund successful past projects. Applications are open March 1 to 29, 2019.

11. Investing in Canada Infrastructure Program - British Columbia - Community, Culture and Recreation Infrastructure. The Community, Culture, and Recreation (CCR) Program supports cost-sharing of infrastructure projects in communities across the province. Funding is ineligible if the project has a private sector, for-profit Ultimate Recipient. The Rural and Northern Communities Program intake is open. The Community, Culture, and Recreation Program intake is open. Application deadline is January 23, 2019 (11:59pm PST).

12. Investing in Canada Infrastructure Program - British Columbia - Rural and Northern Communities Infrastructure. The Rural and Northern Communities Program supports cost-sharing of infrastructure projects in rural communities across the province. The Rural and Northern Communities Program intake is open. Application deadline is January 23, 2019 (11:59pm PST).

For more sources of funding, please go to <https://www.lillooetagricultureandfood.org/farmer-resource-database/>

15. Opportunities and Barriers

Opportunities:

- This would be the only provincially inspected abattoir in the SLRD and within 100kms
- The opening of a cut and wrap in the area will increase local raising of animals
- Based on the responses to the survey, many people are interested in buying local meat products. Tying that in with local producers raising and finishing more animals and using the local abattoir, the opportunity to have local meat available is high
- Longer term economic development opportunities for agriculture in the area
- Additional business may open as a result of having an abattoir in the area and include a stand-alone butcher shop and/or game cutting facility
- Pet food business
- Game (including on-farm kill) cooling and cutting
- Potential opportunity for a second abattoir that processes poultry only
- It appears a number of local people have experience with slaughter as well as cutting and wrapping
- High community support with key people dedicated to its success
- A rancher has already started the process of putting in an inspected Class A abattoir
- Increases regional food security
- Build closer relationships with livestock producers in SLRD Area C
- Strengthening the buy-local and Lillooet Grown initiatives

Barriers/Threats:

- Funding to build the abattoir
- There may not be enough finished or consistent livestock and poultry to support the abattoir
- Animals may not be finished throughout the year causing bottlenecks at the abattoir
- Prices may be higher for local meat causing less uptake than expected
- Support may be needed to local livestock producers to build infrastructure required to house animals throughout the year
- Local consumption based on population and average meat consumption may not be fully met
- Solid and liquid waste disposal
- Anchor abattoir operator may refuse to process others livestock
- Abattoir may process only red meat
- Zoning regulations may prohibit volumes

16. Spray Creek Ranch- Special Section

At the beginning of this feasibility study Spray Creek Ranch expressed interest in putting a Class A abattoir at their location. Half way through this study, it came to the attention of the BC Association of Abattoirs that a moveable Class B red meat slaughter unit was coming available for a low-cost lease which they presented to Tristan Banwell. Spray Creek Ranch then acquired the abattoir on lease from the BC Investment Agriculture Foundation (IAF). This abattoir was in service for 5 years in 100 Mile House and recently became available when the lease was not renewed by the previous operators. Although this is a mobile unit, it was used as a stationary abattoir in 100 Mile House. Spray Creek Ranch is planning on installing it as a stationary abattoir as well; however, they have not ruled out using it as a mobile slaughter facility.

Physical Trailer Specifications:

The trailer is self contained with an onboard diesel generator, 110 Volt electrical system, insulated with a lining package and tandem 12K axels. Access to the trailer is through rear swing doors and a curbside man-door to the mechanical room. The trailer exterior is painted white.

Dimensions:

- Outside Length 36 feet
- Outside Width 8 feet 6 inches
- Inside Height 11 feet

The trailer consists of three main areas:

- Processing area – 16 feet long
- Cooling – 12 feet long
- Mechanical room – 8 feet long

Subframe and Longsills

- Full perimeter angular steel frame (6x4x0.375), cross-members are 4" Junior I-beam 16" on centre with wheel wells.

Axels and Running Gear

- Two 12,000 lb conventional spring axels with all-wheel independent suspension and greaseable hubs
- Airbrakes on all wheels
- Five 17.5" aluminum wheels with 245/75 R17.5 tires
- 1 spare tire mounted with rack
- Two 12,000 lb rated drop-leg jacks

- 5th wheel hitch configuration
- 7-pole trailer plug and nose box

Walls

- Constructed of snap-lock extruded aluminum interlocking panels
- 0.100" exterior wall skin thickness
- 1" vertical support posts 12" on centre
- Smooth, rivet free and puncture resistant exterior skin

Roof

- One piece 0.040" aluminum roof skin over hat shaped extruded aluminum roof bows 24" on centre (mechanical room only)
- 3" Jr I-beams on 12" centers with 12-gauge aluminum sheet for the remainder of the unit (cooler and processing rooms)
- Roof is crowned for water drainage

Rear Doors

- Double rear doors come with 10" long fixed handles on inside of each door for shutting door from the inside
- Door opening is 48" by full height
- Doors are insulated and lined as per rest of trailer interior

Side Door, Offal, Vent, Partition Door

- Curbside man door (to Mechanical Room) with double freezer lock, including TriVan built aluminum flip-out stairs (pefr-O-grip construction) and hand railing system
- 30"x30" access/offal door, roadside rear
- 12"x18" vent door, installed inside offal door at roadside rear
- Partition double doors constructed of aluminum, using double seal; door opening is 48" wide by full height
- Roadside cooler side unload double doors 48" wide (two 24" doors)

Flooring

- Extruded aluminum non-slip TriVan plank flooring in mechanical room
- 1/8" aluminum diamond plate in processing and cooler rooms
- Subfloor is 3/4" 'Tough' Thermo-Lite board (Fibre Reinforced Polyurethane – FRP)
- Full width floor drain gutters at rear of processing and cooler rooms with aluminum grate (with holes)

Lining

- Walls and ceiling of processing and cooler rooms lined with white smooth Kemlite glassboard (3/8" plywood underneath)
- Mechanical room interior lined with 3/8" plywood painted whiter
- Bottom 48" is lined with 1/8" smooth aluminum with 1" coving at bottom

Lining Partition Wall

- Partition wall with insulated double doors (4" insulation)

Insulation

- 3" urethane spray-foam insulation in walls, ceiling and under floor
- 4" urethane spray-foam insulation (in front cooler room only) in walls, ceiling and floor

12 V Electrical

- Includes 1" bullet style LED clearance lights and taillights
- Includes five interior dome lights
- Includes two Whelen 810 exterior scene lights installed on curbside

110 V Electrical

- Comes with Cummins Onan 20kW generator with sound attenuated enclosure and outside access door on driver's side
- Comes with 100A/220V service panel in front mechanical room including six 15A GFI interior plugs, and six Beghelli vaportite surface mounted 48" long double-tube florescent lights
- Includes 220V connection to automatic transfer switch for 'shore' power
- Includes 12V battery and charger

Processing Room

1. 16 feet long
2. Snap lock aluminum interlocking panels
3. Double rear doors
4. Diamond plate aluminum non-slip floor
5. Drain gutter
6. 3" urethane spray foam insulation in floor, walls ceiling
7. Two 12V lights
8. 6 15A GFCI plugs
9. 4 Beghelli Vapourlite 48" long double fluorescent lights
10. Meat rail system
 - 8,000 pound capacity
 - 1,000 pound in-line rail scale
11. Stainless steel head inspection station
12. Stainless steel gut wagon with inspection tray
13. Stainless steel grab bar for hanging hooks
14. Knee operated sink
 - Paper towel holder above sink
 - Includes a hose bib
 - Includes a knife sterilizer attached to the sink
15. Two rings flush mounted to the floor
16. Two 2,000 pound cable winches
17. Saw sterilizer
18. Exhaust fan and intake air vent
19. Water missing station with 20 feet of water hose
20. Acid carcass wash system
 - 10 gallon tank
 - Small pressure pump
 - Plumbing to process area
 - Spray wand
21. Two part aluminum ramp
22. Exterior handsfree sink, hose bibs and knife sterilizer
23. Stainless steel beef cradle on wheels
 - Also sheep skinning cradle
24. Jarvis 16" well saw and spring balancer
25. Trolley with 320 hooks
 - Based on 40 head per week
 - Two week hanging time
 - $40 \text{ head} \times 2 \text{ halves} \times 2 \text{ weeks} = 160 \times 2 = 320$

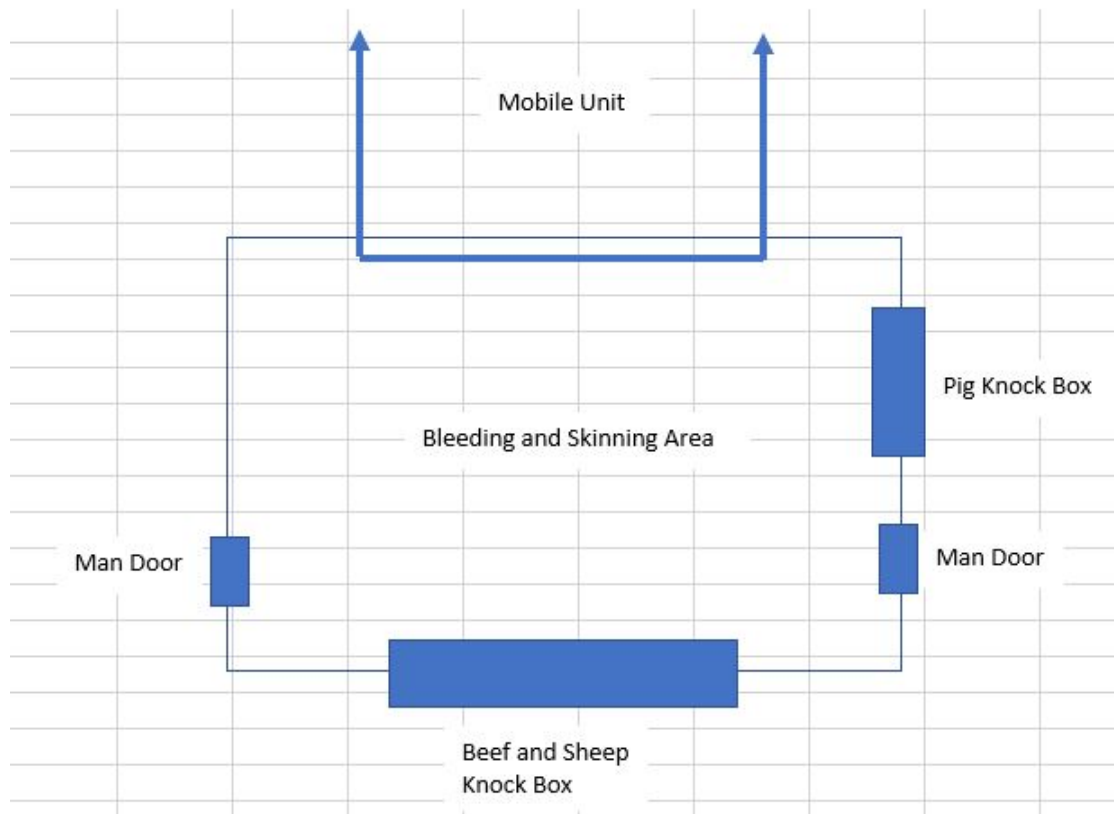
Cooler

1. Walk-in cooler
 - 12 feet long
 - Sized for cooling 8,000 pounds of “hot meat”
 - Will cool to 7°C in 16 hours
 - 3 HP R-22 condensing unit
 - 20,800 BTU R-22 evaporator
 - Digital thermostat
2. Stainless steel hooks in corners for hanging meat hook trees
3. Diamond plate aluminum non-slip floor
4. Drain gutter
5. 4” urethane spray foam insulation in floor, walls ceiling
6. Two 12V lights
7. 2 Beghelli Vapourlite 48” long double fluorescent lights

Mechanical Room

1. 8 feet long
2. 20 kW Diesel generator
3. 110 V electrical system
 - 100A 220V panel
 - Includes 220V connection to automatic transfer switch to ‘shore’ power
4. 12 V electrical system
 - Includes 12V battery and charger
5. One 12V light
6. Plumbing for 300 gallon fresh water tank (included?)
7. Compressor pump for cooling system
8. Two propane tanks, venting and hookups
9. On-demand Renali propane water heater
 - Will heat to 180°F (82°C)
10. Winter proofed
11. Includes pressure pump, expansion tank and plumbing to processing area
12. Office desk with upper cabinet and bottom drawer

The trailer does not include a stunning box or a hide-off skinning area. This will need to be provided at the permanent location and at any docking stations if the unit is operated as a mobile abattoir. Below is a sketch of a suggestion for the enclosed skinning room. It is important that the skinning room is enclosed to prevent contamination from insects (flies) and ambient pollutants.



17. Recommendations and Next Steps

An abattoir in the Lillooet area is feasible because it has strong support from the community, consumers, retailers and producers in the region. In order to succeed it needs an anchor producer and key experienced people as the major stakeholders.

A stationary Class A abattoir is recommended for the Lillooet area. There are no stand-alone butcher shops, so it is important that the abattoir also perform the necessary carcass breakdown, cutting, packaging and sausage making that customers demand. A Class A abattoir will also be able to be used as a game cutting facility to provide another un-met need in the region (the Ministry of Agriculture has guidelines for licensed and inspected abattoirs for processing game animals).

1. Capital costs and management expertise are barriers for a start-up business such building from ground up an abattoir in Lillooet. Recommend providing support and to Spray Creek Ranch on expanding operations and licensing of the abattoir on their property.
2. Develop a business plan for an Abattoir in Lillooet which will outline sales targets and operation milestones to sustain business profitability. It will also be a foundation for securing capital funds and investors. Project funding potential of \$5,000 business plan from Ministry of Agriculture B.C. Agri-Business Planning Program: <https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/programs/agri-business-planning-program>
3. Recommend implementing a risk management strategy for the operating abattoir to include human resource, financial and producer/livestock capacity risks. Potential funding \$5,000 Risk Management from Ministry of Agriculture B.C. Agri-Business Planning Program: <https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/programs/agri-business-planning-program>.
4. Develop a strategy for working with the local St'át'imc Nation people to ensure the abattoir's success
5. Work with local livestock and poultry producers to develop finishing schedules and identify any necessary infrastructure required on-farm
6. Develop a strategy to help new producers start up; this includes small livestock and poultry operations

7. Provide assistance to livestock and poultry producers to develop direct to consumer marketing strategies
8. Discuss zoning changes with the SLRD and the District of Lillooet to accommodate meat processing businesses
9. Continue development of the Lillooet Grown Brand to bring more producers/businesses participating. Possibility to access marketing funding from Investment Agriculture Foundations {insert link here}.

18. Links and References:

1. Squamish-Lillooet Regional District Electoral Area B, District of Lillooet & St'at'imc Agricultural Plan
PART 1: BACKGROUND REPORT
https://www.slrd.bc.ca/sites/default/files/reports/SLRDB_AgPlan_Pt1_FINAL_Sept%202014.pdf
2. Squamish-Lillooet Regional District Electoral Area B, District of Lillooet & St'at'imc Agricultural Plan
PART 2: VISION, PRIORITIES, RECOMMENDED ACTIONS, AND IMPLEMENTATION STRATEGY
https://www.slrd.bc.ca/sites/default/files/reports/SLRDB_AgPlan_Part2_FINAL_Amended%20Feb%202015.pdf
3. 2011 STRATEGIC ECONOMIC ACTION PLAN - P'EGP'ÍG'LHA COUNCIL MARCH 29, 2012
http://www.titqet.org/wp-content/uploads/2017/09/PC-Strategic-Economic-Action-Plan-Report-April-3-2012-FINAL.final_Web.pdf
4. Land use Inventory Report Electoral Area B & Lillooet Squamish-Lillooet Regional District Summer 2013
https://www.slrd.bc.ca/sites/default/files/reports/SLRD2013_LandUseInventoryReport_2014-05-16.pdf
5. AGRICULTURE WATER DEMAND MODEL Report for Squamish-Lillooet Regional District, April 2018
<https://www.slrd.bc.ca/sites/default/files/reports/500300-24%20Agric%20Water%20Demand%20Model%20-%20Squamish-Lillooet%20%28April%2027%2C%202018%29.pdf>
6. Lillooet Agriculture Market Access and Growth Strategy 2017
https://www.lillooetagricultureandfood.org/wp-content/uploads/2017/07/lillooet-agriculture-market-access-and-growth-strategy_june16_short-1.pdf
7. BC Meat Processing Sector 'Cut to the Bone' Labour Market Partnership
<https://www.workbc.ca/getmedia/2d3291ee-ccdf-4247-96eb-1118aa709623/Agrifoods-BC-Assn-Abattoirs-Final-Engage-Report-Dec-2016.pdf.aspx>

Links

https://www.slrld.bc.ca/	6
https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/search-recherche/lst/results-resultats.cfm?Lang=E&TABID=1&G=1&Geo1=&Code1=&Geo2=PR&Code2=59&GEOCODE=59	8
http://www.titqet.org/community/initiatives/food-security/	9
http://www.titqet.org/wp-content/uploads/2017/09/PC-Strategic-Economic-Action-Plan-Report-April-3-2012-FINAL.final_Web.pdf	9
https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/food-safety/meat-inspection-licensing	11
https://www2.gov.bc.ca/gov/content/governments/local-governments/planning-land-use/land-use-regulation/zoning-bylaws	48
• https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/food-safety/meat-inspection/provincial_abattoirs_code_of_practice_2018-08-01.pdf	48
• http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/349_2004	48
http://www.bclaws.ca/Recon/document/ID/freeside/18_246_2007	48
i. https://www2.gov.bc.ca/gov/content/environment/waste-management/industrial-waste/agriculture/slaughter-poultry-processing	48
• https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/food-safety/meat-inspection-licensing/class-a-b-licences	48

Appendix 1: Lillooet Meat and Abattoir Survey

Meat Consumption



1. How many times per month do you consume:

Mark only one oval per row.

	0	1-5	6-10	11-20	21-30	30 +
Chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pork Lamb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Game	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Where do you get your meat from?

Check all that apply.

- ☐ I raise my own
- ☐ From friends
- ☐ Directly from the producer
- ☐ Local abattoir Grocery
- ☐ store in town
- ☐ Grocery store out of town
- ☐ Other: _____

Livestock Production

3. Do you raise animals for meat? *

Mark only one oval.

- ☐ Yes
- ☐ No *Skip to question 20.*
- ☐ No, but would be interested in raising

Poultry Raised

4. Do you raise poultry for meat? *

Mark only one oval.

- ☐ Yes
- ☐ No *Skip to question 7.*
- ☐ No, but would be interested in raising them

Raise Poultry

5. How many do you raise now?

6. How many more birds would and could you raise?

Finished Cattle Raised

7. Do you raise and finish cattle for meat? *

Mark only one oval.

- ☐ Yes
- ☐ No *Skip to question 10.*
- ☐ No, but would be interested in raising them

Raise Cattle

8. If you raise cattle, how many do you finish each year and sell for meat?

9. How many more cattle would and could you finish each year?

Pigs Raised

10. Do you raise and finish pigs for meat? *

Mark only one oval.

- ☐ Yes
- ☐ No *Skip to question 13.*
- ☐ No, but would be interested in raising them

Raise Pigs

11. If you raise pigs, how many do you finish each year and sell for meat?

12. How many more pigs would and could you finish each year?

Sheep/Lamb/Goat Raised

13. Do you raise and finish sheep, lamb or goat for meat? *

Mark only one oval.

- ☐ Yes
- ☐ No *Skip to question 16.*
- ☐ No, but would be interested in raising them

Raise Sheep/Lamb/Goat

14. If you raise sheep/lamb/goat, how many do you finish

each year and sell for meat?

15. How many more sheep/lamb/goat would and could you finish each year?

Other Animals Raised

16. Do you raise other animals for meat? *

Mark only one oval.

- ☐ Yes
- ☐ No Skip to question 19.
- ☐ No, but would be interested in doing so

Raise Other

17. Number and type of other animals raised

18. How many more of these other animals would and could you finish each year?

Abattoir and Butcher

19. Processing *

Mark only one oval per row.

Yes No

I do my own slaughter

I have a friend do the slaughter I	<input type="radio"/>	<input type="radio"/>
use the local abattoir	<input type="radio"/>	<input type="radio"/>
I use another abattoir	<input type="radio"/>	<input type="radio"/>
I do my own cutting and wrapping I	<input type="radio"/>	<input type="radio"/>
have others do my cutting and wrapping	<input type="radio"/>	<input type="radio"/>

Game

20. Do you hunt? *

Mark only one oval.

☐

Yes

☐

No

Skip to question 24.

Hunt

21. What species do you hunt?

22. Where do you get your cutting and wrapping done?

23. Would you be interested in having the local abattoir offer game cutting and wrapping?

Mark only one oval.

☐

Yes

☐

No

Participation

24. How would you like to participate in supporting a local abattoir? *

Check all that apply.

	Yes	No	Maybe
Raising poultry or livestock and using the local abattoir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using the local abattoir for game cutting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Working at the abattoir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
As a consumer of local meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
As an active participant with financial support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
As an active participant with in-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

kind contribution

25. Is there another way you would like to participate in supporting meat production and processing in the area?

Meat Processing Experience

26. Do you have any experience

Mark only one oval per row.

	Yes	No
With animal slaughter	<input type="radio"/>	<input type="radio"/>
With cutting and wrapping meat	<input type="radio"/>	<input type="radio"/>
With sausage and value-added meat product	<input type="radio"/>	<input type="radio"/>

Final Section

27. What is the closest town to you?

28. Thank-you! Please let us know any of your thoughts and comments

29. You can remain anonymous, but if you don't mind us contacting you, please fill in the following:

30. Name

31. Email address

32. Phone number

