



REGIONAL DISTRICT OF BULKLEY-NECHAKO

AGRICULTURE COMMITTEE AGENDA

THURSDAY, NOVEMBER 24, 2016

PAGE NO.

ACTION

AGENDA – NOVEMBER 24, 2016

Approve

Supplementary Agenda

Receive

MINUTES

2-4

Agriculture Committee Meeting Minutes - September 22, 2016 Receive

CORRESPONDENCE

5-64

**Brand Marketing & Management Inc.
- Viability Initiative - Federally Inspected
Beef Packing Plant in BC**

Receive

65-79

**BC Farmland Lease Workbook
- Assisting Landowners and Land Seekers
in Preparing a Farm Land Lease Agreement**

Receive

DISCUSSION ITEM

Agriculture Forum

Chair Parker - RE: Update

SUPPLEMENTARY AGENDA

NEW BUSINESS

SPECIAL IN-CAMERA MOTION

In accordance with Section 90 of the *Community Charter*, it is the opinion of the Board of Directors that matters pertaining to Section 90 (2)(b) – the consideration of information received and held in confidence relating to negotiations between the municipality and a provincial government or the federal government or both, or between a provincial government or the federation government or both and a third party (Cheslatta Carrier Nation Negotiations and Building Inspector Qualification Working Group) and Section 90 (1)(g) litigation or potential litigation (Home Occupation at 22361 Gala Bay Road) or information received relating to these matters must be closed to the public therefore exercise their option of excluding the public for this meeting.

ADJOURNMENT

AGRICULTURE COMMITTEE MEETING
(Committee of the Whole)

Thursday, September 22, 2016

PRESENT:

Chair	Mark Parker
Directors	Eileen Benedict Mark Fisher Tom Greenaway John Illes Dwayne Lindstrom Thomas Liversidge Rob MacDougall Bill Miller Rob Newell Jerry Petersen Darcy Repen Gerry Thiessen
Directors Absent	Taylor Bachrach, Town of Smithers Shane Brienen, District of Houston
Staff	Melany de Weerd, Chief Administrative Officer Cheryl Anderson, Manager of Administrative Services Jason Llewellyn, Director of Planning – arrived at 1:46 a.m. Roxanne Shepherd, Chief Financial Officer Corrine Swenson, Manager of Regional Economic Development Wendy Wainwright, Executive Assistant

CALL TO ORDER

Chair Parker called the meeting to order at 1:37 p.m.

AGENDA

Moved by Director Greenaway
Seconded by Director Lindstrom

AG.2016-8-1

"That the Agriculture Committee Meeting Agenda of September 22, 2016 be adopted."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

MINUTES

Agriculture Committee
Meeting Minutes
-July 21, 2016

Moved by Director MacDougall
Seconded by Director Greenaway

AG.2016-8-2

"That the minutes of the Agriculture Committee meeting of July 21, 2016 be received."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

REPORT

Reckitt Benckiser Canada
and the Bulkley-Nechako,
Fraser-Fort George, Peace
River and Cariboo Regional Districts

Moved by Director Miller
Seconded by Director Fisher

AG.2016-8-3

"That the Agriculture Committee receive the report of the meeting between Reckitt Benckiser Canada and the Bulkley-Nechako, Fraser-Fort George, Peace River and Cariboo Regional Districts regarding an update to the Trees for Change Program."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

Chair Miller thanked those who attended the meeting. Discussion took place regarding 9,000 hectares not being used for agriculture production and agricultural land earmarked for tree planting now being put on the market for sale to be utilized for agriculture. The impact to the forest industry in regard to new agriculture leases utilizing lands and removing trees that could be used for the midterm timber supply was discussed.

CORRESPONDENCE

Correspondence

Moved by Director Greenaway
Seconded by Director Petersen

AG.2016-8-4

"That the Agriculture Committee receive the following correspondence from the Ministry of Agriculture:
-BC Strategic Outreach Initiative Funding Application;
-2016-17 BC Strategic Outreach Initiative Funding Application-
Strategic Planning."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

Director Miller mentioned that the BC Strategic Outreach Initiative Funding could be potentially utilized for the RDBN Agriculture Forum. Staff will investigate to determine whether or not the RDBN Agriculture Forum could be eligible for funding.

DISCUSSION ITEM

Agriculture Forum - Chair Parker – Re: Update

- Date for the Forum: November 9, 2016;
- Location: Vineyard Church in Burns Lake;
- Facilitator: Gary Blattner, Vanderhoof, B.C.
 - o Has facilitated other Agriculture events;
 - o In the Agriculture sector;
 - o Very versed in the strengths and issues in the region;
- Chair Parker has a draft agenda;

DISCUSSION ITEM (CONT'D)

Agriculture Forum - Chair Parker – Re: Update (Cont'd)

- Invite:
 - o agriculture groups within the RDBN;
 - o Ministry of Agriculture;
 - o District Agrologist;
 - o Agriculture Land Commission representation;
 - o Nechako Valley Cattleman's Association;
 - o Bulkley Valley Farmers Market;
 - o 40-45 participants plus RDBN staff;
- Further information or possible participants can be forwarded to staff.

ADJOURNMENT

Moved by Director Miller
Seconded by Director MacDougall

2016-8-5

"That the meeting be adjourned at 1:48 p.m."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

Mark Parker, Chair

Wendy Wainwright, Executive Assistant

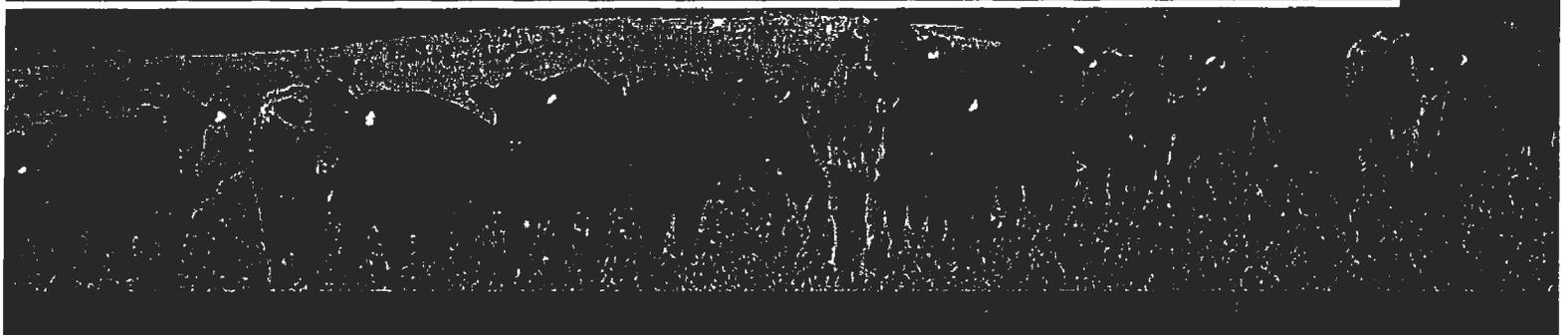
5



Brand Marketing
& Management Inc.

2015

**Viability Initiative – Federally
Inspected Beef Packing Plant in BC**



6



Viability Initiative – Federally Inspected Beef Packing Plant in BC

Funding provided by:



Funding for this project has been provided by Agriculture and Agri-Food Canada and the BC Ministry of Agriculture. The initiative is delivered by the Investment Agriculture Foundation of BC.

Agriculture and Agri-Food Canada (AAFC) and the Ministry of Agriculture are committed to working with industry partners. Opinions expressed in this document are those of [the authors] and not necessarily those of AAFC or the Ministry of Agriculture.

Legal Disclaimer

The report is provided for information purposes and is intended for general guidance only. It should not be regarded as comprehensive or as a substitute for personalized, professional advice. We have relied upon the completeness, accuracy and fair presentation of all information and data obtained from industry associations, telephone interviews and public sources. The accuracy and reliability of the findings and opinions expressed in the presentation are conditional upon the completeness, accuracy and fair presentation of the information underlying them. We assume no liability for errors or omission.

The information contained in this report is confidential and for the sole use and benefit of the BC Cattlemen's Association. It must not be distributed or reproduced without their express permission.

Cattle images courtesy of Canada Beef Inc.

We would like to acknowledge and thank the industry representatives, organizations and companies who contributed to this project for their support, expertise, insights and guidance.

British Columbia Cattlemen's Association (BCCA) – Kevin Boon, Andrea White
Bovivor Pharmatech Inc. – Trent Smith, Dr. Chris Miller
Canfax Research Services - Brenna Grant, Huating Huang, Brian Perrilat
Baker Marketing Strategies International – John Baker
Canadian Cattlemen's Association (CCA) – D. Laycraft, R. Bergen, J. Masswohl, M. Klassen
Canada Beef Inc. – Rob Meijer, Ron Glaser, James Bradbury, Jorge Mendez Manzanillo
Canadian Food Inspection Agency – Dr. Christa Wallace, Steven Cossens, Shauna Woodworth
Informa Economics - Dennis McGivern
Paragon Economics – Steve Meyer
George Morris Centre – Kevin Grier
Initiatives Prince George – Heather Oland, Zishan Shah
Northern Development Initiative Trust – Janine North, Renata King, Brenda Gendron
BC Government, Ministry of Jobs, Tourism & Skills Training – Rob Wood, Selena Basil, Shawn Dolan
BC Government, Environment Standards Branch – Margaret Crowley
BC Government, Environmental Assessment Office - Chris Hamilton
BC Government, Ministry of International Trade, Ben Stewart, Lance Noble, Khri Singh
Prince George Airport Authority - Allan Rigdeway, Cuyler Green
Canadian Meat Council – Jim Laws, Suzanne Sabouri, Jorge Correa
Canadian Premium Meats – Werner Siegrist
Riding Regency Meat Packers Limited – Anthony Petronaci
Diamond Willow Organics – Kevin Wilkie
One Earth Farms – Mike Berretta
Westwold View Farms – Joe Heemskerk
G.K. Farms & Feedlot Health Management Services – Dr. Kae Jim
Southern Plus Feedlots - Bill Freding
Ballco Feeders – Mike Pollard
Schooten & Sons Custom Feedyard Ltd. - John Schooten
Frank Goetz Consulting Ltd. – Frank Goetz
Agriculture and Agri-Food Canada – John Ross, Patti Negrave
BC Hydro – Steve Scott
IDL Projects – Sheldon Boyes, Dale Jarvis, Earl Cutting
Majestic Management – Bob Hillhouse
Port of Prince Rupert – Michael Inman
Vancouver Port Authority – Doug Mills
Canadian National Railway – Lori Nedham, Girish Nair
Caanam Shipping – Michelle Law
Kuehne & Nagel – Martin Reagan
Willow Creek Realty – Gerry McGuire

Table of Contents

Executive Summary4

Supply Analysis.....7

Cattle Supplies in the Prince George Surrounding Areas.....12

Five Year Cattle Supply Outlook.....27

Supply Analysis Conclusion.....30

Plant Analysis.....31

Market Analysis.....49

Financial Analysis.....51

Environmental and Sustainability Benefits.....52

Economic and Social Benefits.....52

Region Support and Incentives.....53

Key Success Factors.....55

Conclusion and Recommendations.....57

Bibliography.....59

EXECUTIVE SUMMARY

BC has large acres of grassland, making it ideal for producing calves. British Columbia (BC) beef cow inventories at 191,300 head on January 1, 2014 are the lowest since 1973. Inventories have been stable for the last three years. Despite the decline in inventories the number of acres of natural and tame pasture has increased and this would imply that land is going unused or being converted back to forest.

BC feeder cattle are exported to Alberta and Washington State feedlots for finishing. US Country-of Origin Labeling (COOL) has negatively impacted the industry. BC producers are particularly vulnerable to US packers in the northwest.

The British Columbia Cattlemen's Association (BCCA) believes there is an opportunity to assess if building a federally inspected beef processing facility in the Nechako region is a feasible business proposition. The Prince George/Vanderhoof regions have an ample supply of feeder cattle and the grain produced there is currently exported out of the region. In addition, the rail line provides access to the coast for shipping boxed beef overseas.

A packing plant and feedlot could be developed in the region and have a competitive advantage by saving the transportation costs of shipping feeders and fed cattle to a plant in Alberta, then shipping boxed beef back to the coast. This study evaluates if that advantage can be leveraged to process cattle.

Feeder supplies in the region are ample to support a small to medium sized packing plant. A plant processing 1,000 head per week would require 55% of the feeder cattle in the BC east region; processing 1,500 head would require 48% of all feeders in BC and a plant processing 2,000 would require 65% of all feeders in BC or 31% of feeders in the BC east and AB west regions.

With the local supply of feeder calves currently being trucked to central Alberta for finishing, trucking both out of and into the region could be saved with the development of a local feedlot.

A packing plant in the Prince George area could potentially source 26,500 head from existing feedlots within 700 kilometers, providing a transportation cost advantage to Prince George. This will be sufficient to support a 500 head per week plant.

A 1000 head per week plant would need to source 23,500 head of fed cattle from a dedicated local feedlot annually which would require a one-time bunk capacity of 13,100 head. A 2,000 head per week plant (100,000 head per year) would require 73% of cattle from a Vanderhoof feedlot with a one-time bunk capacity of 41,500 head.

The Prince George region could supply 24,000 head of feeders annually and the BC east region could supply 90,000 head indicating that there is ample supply of local cattle to support a feedlot.

If land is used for silage production first, the Vanderhoof area could support a 2000-head plant. The BC east region could supply all of the barley needed with 24% of cereal acres for a 500 head plant, 47% of cereal acres for a 1000 head plant, 71% for a 1500 head plant and 95% for a 2000 head plant. Given the local feed availability, there would be no need to import feed grains from the Peace region unless there was a drought.

Feed prices for the BC regions were evaluated and BC barley was consistently discounted compared to the Peace region, NW, NE, Central and Southern (Lethbridge) Alberta. This translates to a feed cost advantage over other regions that are currently finishing cattle sourced from BC and provides an incentive for a feedlot being placed in the Vanderhoof region.

The proposed plant would potentially be located in Prince George. It is the largest city in one of the fastest growing regions in Canada and is positioned for growth and investment. It has superior transportation connections to provincial, national and global markets through an international airport (YXS), a CN distribution centre, Highways 16 and 97 and the Port of Prince Rupert. It is also ideally located near feeder cattle and feed supply and can be located in close proximity to a feedlot.

The availability of labour and affordability of housing for that labour are critical factors when determining the feasibility of a new venture. With a population base of 76,000, Prince George is of sufficient size to support the labour and required support services for a plant. Unemployment rates in Prince George are 5.3% compared to Alberta at 4.1%. Housing is more affordable than other centres. The percentage of household income required to finance a home in Prince George is considerably lower than in other areas of the province at 32% and rental property is also more readily available and affordable.

Land, building construction and equipment will be the largest capital costs in the development of a new packing plant. Land with access to municipal water and sewage is readily available in Prince George and the plant would be a purpose built design to meet export requirements. A phased approach to plant design is recommended to allow for scaling of operations. We are estimating total capital cost for 1,000 head per week plant at \$21M and for 2,000 head per week plant at \$25M.

A three year horizon to begin operations would time well with the expansion phase of the cattle cycle.

Low operating costs are critical to success. After cost of livestock, labour is the largest expense in a beef packing operation. Wage rates in the manufacturing sector in BC are on average 20% lower than in AB. Utility costs for water, sewage, electricity and natural gas are major expenses and are comparable to other regions. Currently transportation costs are comparable to plants in southern Alberta with potential for an advantage once service providers establish pricing for this newly created business.

As an export dependent beef and cattle producer, Canada has the opportunity to capitalize on increasing global demand for high quality beef. The industry has recently seen enhanced market access conditions (Japan expanded market access for Canada to bone-in and boneless beef from cattle under-30-months of age on February 1, 2013) as well as the signing of trade agreements including the Canada–EU Comprehensive Economic Trade Agreement (CETA), the Canada-Korea Free Trade Agreement (CKFTA) and the potential of the Trans Pacific Partnership (TPP). Combined with the increasing demand for high quality beef in China and niche opportunities in North American specialty markets, these conditions present exciting opportunities for the BC beef cattle industry.

The success of the proposed plant depends upon targeting regional retail and food service customers within BC and the Pacific Northwest and untapped global demand from the European Union, Asia and the Middle East. Product would be clearly differentiated from commodity beef. The plant would specialize in producing beef from cattle raised without antibiotics or added hormones.

The BC Cattlemen’s Association has already developed a “BC Natural Beef” program with production protocols to raise cattle without antibiotics or added hormones and with BC-verified origin. Currently a significant portion of cattle in BC are already raised without hormonal implants and limited use of antibiotics but are not sufficiently differentiated to capture premiums from the marketplace

A packing plant in Prince George would create significant economic and social benefits. Producers would benefit from potentially increased cattle and grain demand and higher prices enhancing potential for profitability and sustainability. Net contribution to the producer in BC north/east is estimated to increase

to \$179/head when price premiums and cost advantages of local plant are realized. With beef and by-product sales in year 1 (2018) estimated at \$160M and rising to \$256M in year 3 (2020), the plant would contribute significantly to BC Agriculture's goal to increase agricultural receipts from \$10B to \$14B. Value added exports are estimated at \$100M in year 1 and to increase to \$180M in year 3. The region would benefit directly from 100 full time equivalent jobs in 2018 increasing to 180 in 2020 within the plant. Packing plants can have significant economic spin-offs and we estimate 620 jobs being created within the region by 2020. The regional and provincial economy would benefit from increased economic diversification.

It should be noted however that the packing industry is an extremely difficult business, even for established companies. There is no guarantee that small, start-up slaughter facilities will achieve success in an industry characterized by economies of scale. Small plant success is dependent on being able to exploit niche markets and having a reliable supply of cattle with the required attributes. Plant operations for a start-up can be challenging and an experienced senior management team and sufficient skilled labour are essential. The sales department will need to establish customers quickly, command high enough premiums and balance carcass utilization. Commercially viable market access will be required moving forward.

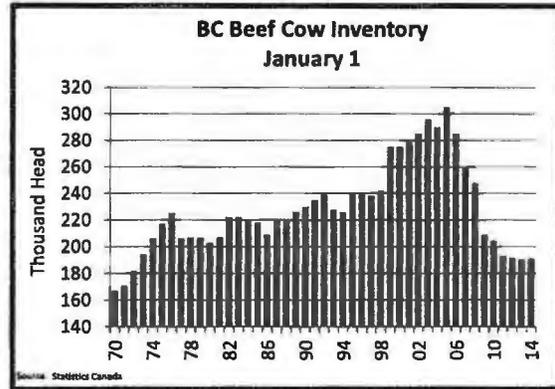
A small plant with a differentiated marketed strategy is potentially viable. While viable, it is a high risk venture with significant capital and operating expenses for a very low margin business. Operational excellence, prudent risk management and favourable external factors are required in order to be profitable. Projected net operating income was positive, capitalization rates on plant assets were favourable, however overall rates of return in terms of operating margins are low.

As much of the benefit is accrued directly back to the producer, an integrated structure with producer ownership should be considered to align the supply chain and share risk and reward. A commercial partner with experience in the meat packing industry should be considered to mitigate operational risk. A commercial partner with a network of small plants would also provide economies of scale. This combination of risk mitigation and improved net operating income would improve viability and make it more attractive to secure investment capital.

As next steps the business case should be further developed along with a business plan. A commercialization strategy should be developed that includes identifying potential partners. Government and regional support should be consider for technical support and funding assistance to enable further development of the business case, development of the business plan and commercialization strategy.

SUPPLY ANALYSIS

British Columbia (BC) beef cow inventories at 191,300 head on January 1, 2014 are the lowest since 1973. Beef cow inventories were relatively stable from 1976 to 1998, ranging between 200-240,000 head. Numbers then jumped in 1999 and peaked in 2005 at 305,000 head before liquidating between 2006 and 2011. Inventories have been stable for the last three years. Despite the decline in inventories the province had 3.9 million acres of natural and tame pasture in 2011, up from 3.56 million acres in 2001 (source: Ag Census). Large parts of BC natural pasture are only conducive to grazing. This would imply that land is going unused or is being converted back to forest.



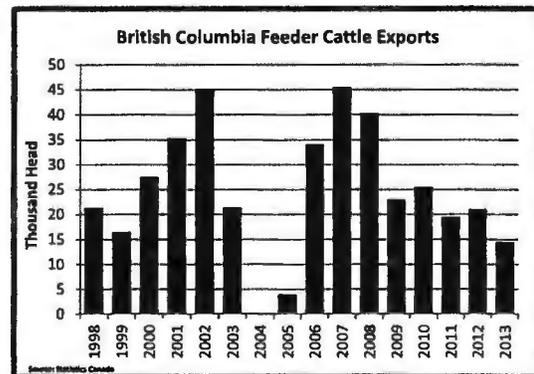
After the last liquidation cycle, beef cow inventories are down in all provinces with room for growth almost everywhere. This situation is not unique—BC producers responded to market signals. The BC herd has represented between 5-7% of the national herd from 1970-2008. Since 2008, the BC herd has been 4.6-4.9% of the national herd. While this is lower than it has been historically, every province has responded to market signals based profitability and on local opportunities for profit by producing other commodities with the same resources of land, labour and capital.

Cattle prices are sending the signal to producers worldwide to expand production. However, in many countries this signal is being met with caution. The current market demand means breeding stock are at record high prices. Feed cost volatility, recovery from drought in many regions, questions of whether the prices are sustainable in the long run and competition from crops in areas suited to annual cropping have producers around the world cautious about the current expansion.

According to the 2011 Ag Census there were 4,811 farms reporting beef cattle in BC, down 46% from 2001. Of these, 75% reported total gross farm receipts (excluding sales of forest products) under \$50,000, 19% were between \$50-250,000 and 6% reported gross receipts over \$250,000 annually. There are a large number of small operators - 75% of beef farms have less than 47 head, but only represent 18% of the beef cows in the province. The majority of production comes from larger operations with 48% of beef cows on farms with more than 177 head.

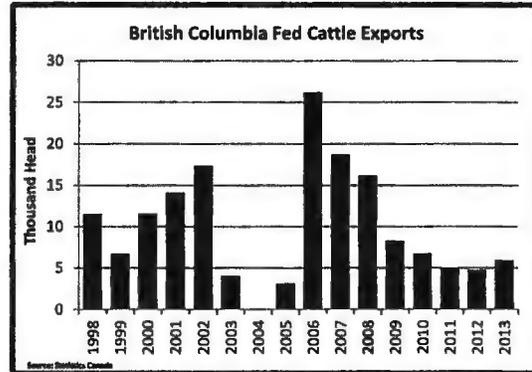
LIVE CATTLE EXPORTS

Like the rest of western Canada, the NW US has been an important market for BC producers over the years. Feeder cattle are exported to Washington State and Alberta feedlots for finishing. Over the last five years



feeder exports out of BC ports¹ have averaged 20,600 head annually with 2013 down to 14,400 head. Canadian feeders that end up in Washington State have ranged between 45-65,000 head over the last five years (2009-13). Obviously, more than just BC feeders end up there, with demand drawing cattle out of Alberta as well.

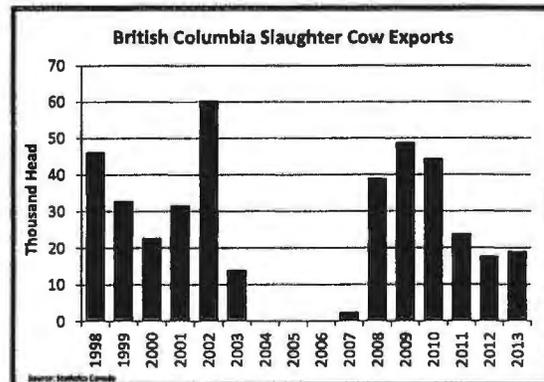
Fed cattle exports from BC are limited and typically represent 1.8% of the Canadian total, averaging 6,000 head annually over the last five years (2009-13). Washington State has received between 185-270,000 head of fed cattle exported from Canada annually over the last five years. It is assumed that all BC fed exports go to Washington State.



In general, feeder exports are determined by relative cost of gain in the two countries and what a feedlot is willing to pay on either side of the border. Fed export volumes are determined by basis levels which reflect local supply and demand conditions, taking into account differences in cost of production (see the impact of regulations section for more details).

in cost of production (see the impact of regulations section for more details).

BC slaughter cow exports have averaged 30,700 head annually (2009-13) but were down to 19,000 head in 2013. While BC has historically represented 17% of Canada's slaughter cow exports, this was down to 7% in 2013. It was noted above that BC's cow herd is only slightly smaller as a percentage of the national herd. Subsequently, the decline in slaughter cow exports is partly due to domestic packers keeping more cows in Canada. Following the closure of XL Foods cow plant in Moose Jaw, Saskatchewan in April 2009 cow slaughter exports from Alberta dropped and continue to be minimal compared to the late 1990s. This has obviously impacted BC cow exports to a certain degree².



THE IMPACT OF REGULATIONS

A number of regulations introduced over the last decade have made it more challenging to send cattle across the border, reinforcing for producers the vulnerability of depending on the US market. Live cattle exports are no longer determined just by market conditions, regulations also add costs to the system.

2005 - BSE regulations that required a CAN brand increased transactions costs of exporting feeder cattle.
2007 - Long list specified risk material (SRM) increased processing costs on cattle over-30-months (OTM) of age for Canadian packers.

¹ Statistics Canada reports live cattle exports by port of exit, it is assumed these cattle originated in BC but it is possible that some could have originated in Alberta.

² Since ground beef falls under the 'E' label cow plants taking Canadian cows have seen minimal impact using a five nation's label (US, Canada, Mexico, Australia and New Zealand).

2008 - Mandatory Country of Origin Labelling (COOL) reduced the number of US packers taking Canadian cattle as segregation and labelling added costs.

2013 – A COOL amendment removed US packer ability to co-mingle Canadian fed and feeder cattle.

Cattle Classification under COOL

A – Born and raised in the US

B – Canadian born feeders, fed in the US

C – Canadian fed cattle imported for immediate slaughter

D – Foreign meat imported into the US labeled 'Product of Canada'

E – Ground beef must be labeled with all countries that may be reasonably contained; may be in any order.

Note: foodservice and processed foods are exempt

The price impact on the Canadian fed cattle and slaughter cow markets from the complete closure of the US border to live cattle in May 2003 was significant. Particularly, because at the time Canada did not have the slaughter capacity to process its entire production domestically. In the prior five years (1998-2002) only 74% of slaughter cattle marketings were processed domestically. Dependence on exports varied by class of cattle—while only 18% of fed cattle were exported, 32% of cows and 61% of bulls were exported from 1998-2002. Consequently, when the border closed fed cattle were prioritized at plants and there was no market for cows or bulls.

From 2003 to 2006 several plant expansions and plant openings in Canada dramatically increased domestic capacity. After 2006 inventories declined resulting in over-capacity. Additional domestic capacity was expected to result in lesser price impacts from later regulatory changes, but that has not been the case. To understand why, we need to examine the larger North American pricing dynamics.

The US cattle market is ten times the size of Canada. Free trade (even under current regulations, cattle trade in North America is relatively free) means prices are determined in the larger US market. As the smaller market, Canada is a price taker³. The Law of One Price would dictate that Canadian prices must equal the US price minus transportation and transaction costs, adjusted for the exchange rate and local supply and demand conditions. This is the definition of the fed cattle basis. Regulatory changes that increase the transaction costs of doing business across the border widen the basis and result in a lower price on all Canadian cattle, not just those that are exported.

Reducing live cattle exports to the US does not change the price received in Canada as it is still determined the same way. Integration of the packing industry is global and beef prices are determined by a plant's ability to maximize the cutout by selling each cut to the market with the highest price (adjusted for market access, tariffs, transportation and cost of production to produce a certain specification). A packer's willingness to pay for fed cattle is based on their local boxed beef price (plus by-product value) minus processing costs (including regulatory costs). In fact, Church and Gordon (2012) have indicated that access to the US market is critical for avoiding the exercise of market power in the Canadian fed cattle market.⁴

Trade Economics 101

³ A price taker can increase or decrease production without impacting the price.

⁴ Jeffrey Church and Daniel Gordon. August 2012. Market Power and the Western Canadian Red Meat Packing Industry. Phase I: Market Power Update, Mad Cows, Mergers and COOL.

Trade benefits both countries. A country that has a competitive advantage in producing beef is limited to the demand of its own country. As supplies increase prices decline due to finite demand. Trade allows that country to increase supply and producers receive a higher price for their product by accessing the demand in an importing country. The importing country, typically has a higher cost of producing, benefits from lower prices as supplies increase and greater consumer choice of products are available. Prices will increase in the exporting country and decrease in the importing country until an equilibrium is reached. This not only is the case between countries but also between regions or provinces.

Reducing fed cattle exports can be done in several ways. Two of those ways are by either decreasing Canadian production or decreasing US demand – neither is a good thing for the Canadian industry, particularly if it results in market power being exercised domestically. The third is to increase demand in Canada for cattle. This can potentially be done with the addition of a plant that can service untapped demand in emerging markets like the European Union and China, but must be competitive to be able to pull cattle that would be exported versus cattle from domestic plants.

The Cost of COOL

Historically US plants would have bought Canadian cattle when local supplies were tight and the price was right. Therefore some plants relied on Canadian cattle due to geographical closeness, while others did not typically buy Canadian cattle due to distance. Under the COOL rule the number of US packers bidding on Canadian cattle was reduced.

Schroeder et al. (2009)⁵ isolated the impact of COOL from other market factors, estimating the Alberta fed basis widened by \$4.82/cwt following the implementation of COOL in October 2008.

Church and Gordon (2012) found that packing plant market power in Western Canada increased after COOL & the XL Lakeside sale but was still below the pre-BSE levels. The results were consistent with the exercise of market power; but not with coordinated market power by packers. The impact on fed cattle prices was estimated at 5¢/cwt below competitive level post-BSE. It is unknown if the transfer from feedlots to packers is too much or just enough to cover larger fixed costs as utilization levels have declined.

The May 2013 amendment further reduced competition for specific types of Canadian cattle--aggravating market power concerns, particularly for Canadian feedlots selling fed cattle--and created specific demand for feeder cattle from plants that rely upon Canadian cattle for utilization and choose to slaughter only 'B' label cattle.

After Tysons' announcement to only process 'B' label cattle (Canadian feeder, finish in US feedlots) in October 2013 the Alberta/Nebraska cash to cash basis went from being in-line with the five year average to being \$3.37/cwt wider from mid-October to the end of the December 2013. This does not take into account other market factors that were controlled for in the Schroeder et al. (2009) study. But it does show the vulnerability of the Canadian industry to any procurement change in Washington States' packing sector.

A vulnerable situation

Western Canada relies on US packers in the northwest; however overcapacity in the US packing sector has made it conceivable that one of these plants might close. If that occurred, US demand for Canadian

⁵ Ted C. Schroder, Clement E. Ward, and Lee Schulz. December 2009. Determinants of the Canadian-US Basis for Cash Fed Cattle and Impacts from Government Regulations.

cattle could be impacted to a similar degree as was seen when Tyson pulled back from the Canadian market due to the COOL amendment, depending on the size of the plant.

THE PROPOSED SOLUTION

The British Columbia Cattlemen's Association (BCCA) believes that there is an opportunity to assess whether building a federally inspected beef processing facility in the Nechako region is a feasible business opportunity to be pursued.

As already noted, BC has large acres of grassland making it ideal for producing calves. The Prince George/Vanderhoof regions have an ample supply of feeder cattle and grain production is currently exported out of the region. In addition, the rail line provides access to the coast for shipping boxed beef overseas. A packing plant and feedlot could be developed in the region that would have a competitive advantage by saving the transportation costs of shipping feeders and fed cattle to a plant in Alberta, then shipping boxed beef back to the coast.

This plant would differentiate itself from provincial plants by focusing on high quality grain-fed beef targeted to export destinations currently unexploited by the large plants.

This supply analysis study evaluates whether that advantage can be leveraged to finish and process cattle as well. First, feeder supplies in the region are evaluated to determine if they are adequate to support a small to medium sized packing plant. In addition to a packing plant, the feasibility of a feedlot in the region to reduce the cost of transporting cattle out the region for finishing and back into the region for slaughter is also considered. Critical success factors are discussed and implications of the proposed packing plant and feedlot on the Canadian market are evaluated including utilization within each sector.

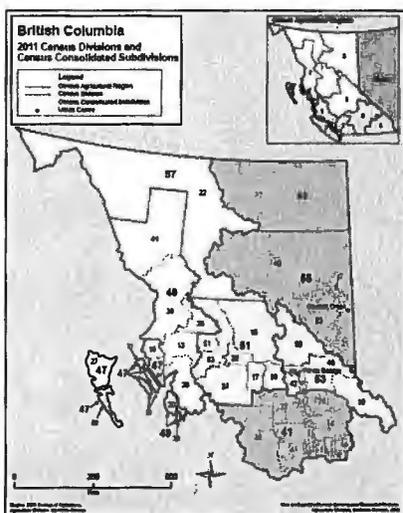


CATTLE SUPPLIES IN THE PRINCE GEORGE SURROUNDING AREA

Beef cow numbers in the immediate area surrounding Prince George (Fraser-Fort George and Bulkley-Nechako) were 30,735 head in 2011 (Ag Census). When expanded to include the BC east region (Northern Rockies, Peace River, Cariboo, Bulkley-Nechako, and Fraser-Fort George) there are 113,760 head and western Alberta (Census Division 9, 13, 14, 15, 17, 18 and 19) had 297,385 head for a total of 441,880 beef cows. Beef cow inventories in BC and Alberta were down 1% from 2011 to 2014 (Statistics Canada, January 1 Inventory Report). With a minimal decline from 2011 to 2014, 2011 Ag Census numbers will be used for the following analysis.

Beef Cow Numbers in BC and Peace Region AB, 2011 Census

MAP 2D

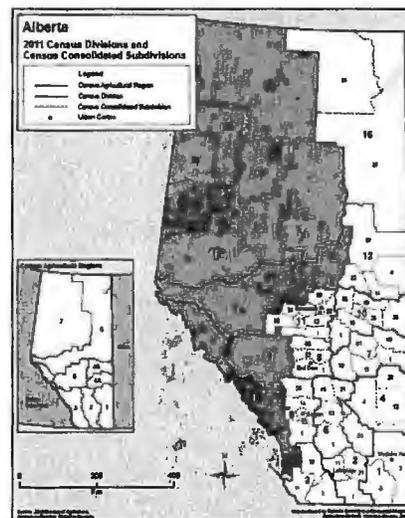


**Number of Beef Cows
 in BC
 195,477**

**BC East
 (Census Division 41, 51, 53, 55 and 59)
 113,760**

**AB West
 (Census Division 9, 13, 14, 15, 17, 18 and 19)
 297,385**

**Prince George Region
 30,735**



Source: Census of Agriculture 2011

The supply of feeder cattle for finishing from this region must take into account replacement heifers to maintain the herd. Assuming a reproductive efficiency of 93% and culling rate of 12% Table 1 provides the estimated number of feeder cattle for each region. Total BC feeder volumes are estimated to be 155,000 head annually and the BC east region would have around 90,000 head.

Feeder exports to the US totaled 14,384 head in 2013, about 10% of the province potential feeder supplies. These would be pulled primarily from the south and are assumed to not impact the BC east numbers where the majority of cattle would be pulled from.⁶

Table 1. Feeder Supply

	<i>Heifers #</i>	<i>Steers #</i>	<i>Total</i>
Prince George Region	10,224	14,151	24,376
BC East	37,844	52,378	90,222
BC	65,028	90,003	155,031
BC East + AB West	136,736	189,251	325,988
BC + AB West	163,920	226,876	390,797

Assumption – Regional beef cow inventories in 2014 is estimated based on a 0.98% decrease in BC and 1.02% decrease in AB from 2011; Reproductive Efficiency = 93%; Beef Cow Culling Rate = 12%.

⁶ In 2013, auction volumes in BC totaled 167,489 head (including feeders and non-fed cattle). Nationally fed cattle marketings as a percentage of total cattle marketings are around 80% using a ten year average. The potential feeder supplies (estimated above) as a percentage of total cattle (feeders and cows) supplies in BC is 87%. Therefore, feeder cattle volumes from auction markets are

DEMAND FROM A PRINCE GEORGE PACKING PLANT

Table 2 provides estimated cattle demanded (total and breakdown by steers and heifers) for various sized packing plants (scenarios for 500, 1,000, 1,500 and 2,000 head per week) and the market share that demand represents for each region. It is clear that even with a 500 head per week plant, it would take more than what the immediate Prince George region could supply. A 1,000 head plant would require 55% of the feeder cattle in the BC east region. A 1,500 head plant would require 48% of all feeders in BC and a 2,000 head plant would require 65% of all feeders in BC or 31% of feeders in the BC east and AB west regions.

Table 2. Cattle Demand Estimation

	500 head/week		1000 head/week		1500 head/week		2000 head/week	
	Annual Demand	Mkt Share	Annual Demand	Mkt Share	Annual Demand	Mkt Share	Annual Demand	Mkt Share
Prince George	25,000	103%	50,000	205%	75,000	308%	100,000	410%
BC East	25,000	28%	50,000	55%	75,000	83%	100,000	111%
BC	25,000	16%	50,000	32%	75,000	48%	100,000	65%
BC East + AB West	25,000	8%	50,000	15%	75,000	23%	100,000	31%
BC + AB West	25,000	6%	50,000	13%	75,000	19%	100,000	26%

*Assumption – Annual Demand = head/week * 50 weeks*

Cull cows have become an important aspect supporting utilization at many Canadian plants as fed cattle numbers have declined. However, cow slaughter is seasonal (spring and fall) and therefore is unreliable. In addition, cow slaughter varies with the cattle cycle as culling rates increase and decrease. There are costs associated with accommodating the larger framed cull animals. These costs must be weighed against the benefit of having the option of sourcing cows to improve utilization seasonally.

The immediate Prince George region will provide a limited number of cull cows, approximately 2,000-4,000 head (see Table 3).

Assuming a 12% culling rate the BC east region would produce 13,500 head of cull cows annually. Many of these could be sourced through local auction markets. This is expected to reduce the number of cows being

Table 3. Cull Cows from Surrounding Region

Culling Rate	AB West Cull Cows	Prince George Cull Cows	BC East Cull Cows	BC All Cull Cows	BC East & AB West
7%	20,605	2,130	7,885	13,549	28,489
10%	29,435	3,043	11,264	19,355	40,699
12%	35,322	3,652	13,517	23,227	48,839
14%	41,209	4,261	15,770	27,098	56,979

exported out of BC to the US and to Alberta packing plants.

The 13,500 head of cull cows from the BC east region would represent 54% of a 500 head plants annual cattle needs, 27% for a 1,000 head plant, 18% for a 1,500 head plant and 13.5% for a 2,000 head plant.

estimated to be 85% of total auction market volumes equaling 142,000 head in BC. However, since many BC cattle are sold in Alberta auction markets this does not adequately represent supplies and the above estimates will be used throughout this study.

POTENTIAL SUPPLY OF FED CATTLE TO A PRINCE GEORGE PACKING PLANT

Given the local supply of feeder calves are currently being trucked to central Alberta for finishing, trucking both out of and into the region could be saved with the development of a local feedlot. A Prince George packing plant would benefit from having a reasonable assurance of supply through a feedlot located in the nearby Vanderhoof region. In order to supply this packing plant from a single feedlot the one time bunk capacity required (assuming a 90% fill rate and two turns per year⁷) for various plant sizes is shown in Table 4.

Table 4. Feedlot Size

Packing Plant Size	Packer Cattle Demand	Feedlot One-time Bunk Capacity
head/week	head/year	head
500	25,000	13,889
1,000	50,000	27,778
1,500	75,000	41,667
2,000	100,000	55,556

Assumption- feedlot filling rate=90%, 2 turns/ year

However, there are existing feedlots in the region that could serve this purpose. Any feedlot development would need to take into consideration the packing plant demand less the existing and potential supply from feedlots in the region.

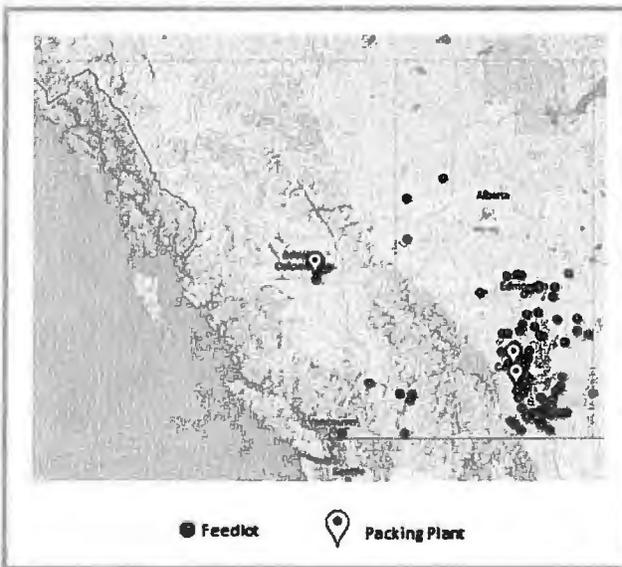
It is estimated that 38,100 head of BC cattle are currently finished within province annually and processed at 34 provincially inspected plants which sell product into local/niche markets. Provincial slaughter in Canada represents only 5-6% of total slaughter, with BC representing approximately 43% of the 2013 provincial slaughter in western Canada. Provincial plants typically have fewer steers and more bulls in their mix, but similar proportions of heifers and cows as federal plants.

BC feedlots with >1,000 head bunk capacity is approximately 24,000 head. These lots would be expected to have a turn rate around 1.5 if their performance is comparable to similar sized Alberta lots (source:

Canfax Annual Demographics 2014). There are a number of smaller feedlots that bring the total BC finishing capacity to an estimated 30-40,000 head.⁸ In 2013, 72% of provincial slaughter was fed cattle for an estimated 27,500 head in BC. This implies that current feedlot capacity in BC at 30,000 head matches demand from local packing plants.

The majority of cattle from the BC east and AB east regions will most likely be moving into finishing feedlots in the Edmonton and Red Deer area. The existing feedlots will sell fed cattle to the highest bidder. A Prince George plant may have an edge if there are transportation savings.

The closest west Edmonton feedlot finishes around 24,000 head annually and would be within 510 kilometers of the Cargill High River



plant and only 430 km from the Harmony Beef, Balzac plant when it re-opens compared to 580 km from Prince George.

⁷ Feedlots with >10,000 head one time bunk capacity tend to average two turns per year, while smaller feedlots tend to average only 1.5 turns per year. Source: Canfax Annual Demographics Survey

⁸ Source: Communication with British Columbia Cattlemen's Association (BCCA)

FED CATTLE TRANSPORTATION

There are five feedlots in BC⁹ and four feedlots in the Alberta Peace Region¹⁰ that are within 700 km of Prince George. These would be the most likely existing source of finished cattle for a Prince George plant. Total potential supplies from these nine feedlots is around 60,255 head per year (21,600 in BC and 38,655 in AB based on 90% filling rate). However, more than 60% of the supplies from Alberta come from a single feedlot which is closer to High River. To ensure supplies from this feedlot, the BC packer will have to pay higher price that covers the difference in transportation costs.

Table 5. Fed Cattle Transportation

Region	Prov.	Distance to			Prince George vs.		Transportation Cost difference	
		Prince George Km	High River km	Balzac km	High River Km	Balzac km	High River \$/head	Balzac \$/head
700 km Radius								
Vanderhoof	BC	99.5	945	895	-846	-796	-66	-62
Cache Creek	BC	450	769	720	-319	-270	-25	-21
Beaverlodge	AB	493	854	773	-361	-280	-28	-22
Cleardale	AB	539	991	911	-452	-372	-35	-29
Westwold	BC	581	643	594	-62	-13	-5	-1
Niton Junction	AB	584	509	428	75	156	6	12
Armstrong	BC	634	594	545	40	89	3	7
Vernon	BC	642	616	567	26	75	2	6
Manning	AB	695	938	857	-243	-162	-19	-13
700-800 km Radius								
Leslieville	AB	735	253	172	-482	563	37	44
Barrhead	AB	739	473	393	266	346	21	27
Eckville	AB	749	234	154	515	595	40	46
Eckville	AB	749	234	154	515	595	40	46
Pitt Meadows	BC	759	1005	956	-246	-197	-19	-15
Fort Sask	AB	762	388	309	374	453	29	35
Westlock	AB	780	443	362	337	418	26	32
Westlock	AB	780	443	362	337	418	26	32
Oliver	BC	781	770	721	11	60	1	5
Sundre	AB	783	186	106	-597	677	46	52
Clyde	AB	795	438	357	357	438	28	34
Madden	AB	798	116	41.9	682	756.1	53	59
Star	AB	800	424	344	376	456	29	35
Innisfail	AB	800	176	95.6	624	704.4	48	55

⁹ These three feedlots are located in Vanderhoof, Cache Creek and Westwold, BC, with one-time bunk capacity ranging from 1,000-3,500 head.

¹⁰ These three feedlots are located in Beaverlodge, Cleardale and Manning, AB, with one-time bunk capacity ranging from 1,200-6,500 head.

*Assumptions – Transportation costs: 40 head/load, \$3/loaded km; Annual cattle supply=one-time bunk capacity*turns/year (assume 1.5turn/year for feedlots with unavailable data) * 90% filling rate.*

Assuming the BC packing plant gets 100% of the cattle from the feedlots that are closer to it (this ignores provincial packing plants), which includes six feedlots in the 700 km radius and one feedlot in the 800 km radius (which most likely exports cattle to the US), the potential annual supplies from these feedlots is 26,500 head – about 100% of fed cattle demand of a 500 head per week packing plant; 53% of a 1,000 head; 35% of a 1,500 head and 27% of a 2,000 head packing plant. Most of the feedlots beyond the 700 km radius have a clear transportation advantage going to High River or Balzac with the exception of the Oliver, BC feedlot which could have a portion of its cattle go to each of the three plants. This would provide a cushion for the Prince George plant and competition for existing domestic packers.

A packing plant larger than 500 head per week will need to source cattle from feedlots that are relatively closer to High River or Balzac. The differences (estimated costs) in transporting cattle to Prince George vs. High River and Balzac are shown in Table 5. Assuming \$3 per loaded km and there are 40 head per load¹¹, the BC plant will need to pay around \$2-5/head (or \$0.15-0.35/cwt live) more (FOB the plant) compared to the High River packer for the cattle in the 700 km radius.

When fed cattle are transported greater distances from feedlots to slaughter plants, shrinkage in cattle increases. Some of that loss is in tissue rather than just loss of liquid from the gut fill (Duncan et al. 1997). However, southern Alberta feedlots frequently truck cattle as much as 800-900 km to US plants (Lethbridge, AB to Pasco or Toppenish, WA).

POTENTIAL SUPPLY OF FEEDERS TO A VANDERHOOF FEEDLOT

The Prince George region alone could supply 24,000 head of feeders annually and the BC east region could supply 90,000 head indicating that there is ample supply of local cattle to support a feedlot. As noted above there are 26,500 head (from six feedlots in the 700 km radius and one feedlot in 700-800 km radius) of fed cattle potentially available from established feedlots with transportation cost advantage to Prince George. This will be sufficient to support a 500 head per week plant but only represents 53% of the supply needed for a 1,000 head per week plant. This plant would need to source 47% or 23,500 head of fed cattle from a dedicated local feedlot annually which would require a one-time bunk capacity of 13,100 head with two turns and a 90% fill rate. Feeder cattle demand by packing plants in different sizes and the implications on feedlot size is shown in the following table.

Table 6. Feeder Supply from Established Feedlots

Packing Plant Size	Packer Cattle Demand	Supply from Established Feedlots	Supply from Vanderhoof Feedlot	Vanderhoof Feeder Demand	Vanderhoof One-time Bunk Capacity
<i>head/week</i>	<i>head/year</i>	<i>%</i>	<i>%</i>	<i>head/year</i>	<i>head</i>
500	25,000	100%	0%	-	-
1,000	50,000	53%	47%	23,500	13,100
1,500	75,000	35%	65%	48,750	27,100

¹¹ Alberta Agriculture reports Pot liners (50-65,000 lbs) at \$4.75-5.25/loaded mile (~\$3.10/loaded km) for transport >450 kms in 2013 [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/inf14268](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/inf14268)

2,000	100,000	27%	73%	73,000	41,500
-------	---------	-----	-----	--------	--------

FEEDER CATTLE TRANSPORTATION

A proportion of the feeder cattle needed for the feedlot could come from surrounding auction markets. The majority of auction markets in BC are located in the south with closer distance to the feedlots in southern BC and Alberta. There is one local auction market in Vanderhoof. Sales reports for this auction are consolidated with other stockyards operated by the same company. Assuming sale volumes are evenly distributed across all stockyards, feeder sales volume for the Vanderhoof auction market is estimated at 18,600 head in 2013, about 74% of the annual cattle demand of a 500-head plant, 37% of a 1000-head plant, 25% of a 1500-head plant and 19% of a 2000-head plant. However, considering the fact that most of the current feeder demand are from the south where most of the established feedlots located, sales volume of the Vanderhoof auction markets could be smaller than the other southern auction markets. In the 300-500 km radius to Vanderhoof, there are two other auction markets. Both have a feedlot nearby.

It should be noted that the Grand Prairie Livestock Market closed on August 1, 2014. While the cattle from that region will still be available it would be expected that more direct or electronic sales will occur to prevent additional shipping costs.

The differences in transportation costs for feeder cattle currently being shipped from Vanderhoof to the closest large feedlots in Westwold, BC and Niton Junction, AB are shown in the table below. While the data shows lower transportation costs from the three auction markets within the 500 km radius to Vanderhoof compared to both Westwold and Niton Junction, it should be noted that there are two feedlots in Northern Alberta much closer to the auction market in northern BC than Vanderhoof, providing competition for these feeder cattle.

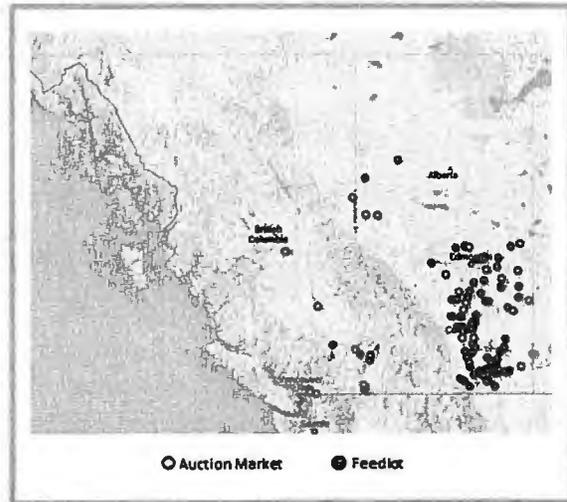


Table 7. Feeder Cattle Transportation

Location		Distance to			Vanderhoof vs.		Transportation Cost Difference	
		Vanderhoof	Westwold	Niton Junction	Westwold	Niton Junction	Westwold	Niton Junction
500 km Radius		km	km	km	km	km	\$/head	\$/head
Vanderhoof	BC	-	674	683	-674	-683	-19	-19
Williams Lake	BC	333	342	756	-9	-423	0	-12
Dawson Creek	BC	500	983	493	-483	7	-14	0
500-900 km Radius								
Beaverlodge	AB	591	930	405	-339	186	-10	5
Kamloops	BC	620	56	652	564	-32	16	-1
Grande Prairie	AB	633	890	365	-257	268	-7	8
Okanagan	BC	725	52	755	673	-30	19	-1
Armstrong	BC	728	53	756	675	-28	19	-1
Drayton Valley	AB	776	750	97	26	679	1	19

Chilliwack	BC	782	309	904	473	-122	13	-3
Abbotsford	B	817	344	939	473	-122	13	-3
Langley	BC	832	358	953	474	-121	13	-3
Thorsby	AB	850	860	170	-10	680	0	19
Westlock	AB	879	900	200	-21	679	-1	19
Rimbey	AB	883	768	204	115	679	3	19
Red Deer	AB	884	716	309	168	575	5	16
Clyde	AB	894	950	215	-56	679	-2	19
Innisfail	AB	899	688	337	211	562	6	16

Assumptions – Transportation costs: 110 head/laad, \$3/loaded km

A feedlot in Vanderhoof will have a slight advantage in terms of feeder transportation costs compared to the feedlots in Southern BC or Northern and Central Alberta, therefore it will face direct competition for feeder cattle.

POTENTIAL FEED SUPPLY AND COST TO A VANDERHOOF FEEDLOT

The viability of a feedlot depends on the ability to source cattle competitively against established Alberta feedlots, having an adequate feed supply and excellent management. Profitability of any feedlot is directly related to its cost per pound of gain. There are three things that impact this: (1) animal performance (2) capital costs; and (3) feed costs.

Animal performance in the form of average daily gains would need to be comparable to feedlots in southern Alberta and would require excellent management. It would seem prudent to hire a manager with extensive and successful experience in operating a large feedlot.

Capital costs - substantial economies of scale exist in cattle feeding. Duncan et al. (1997)¹² found that while feed costs do not significantly change, capital costs range from \$468 per head for a 1,000 head lot to \$243 for a 20,000 head feedlot.

Feed costs will be evaluated both in terms of local supplies, which will have a direct impact on how large a feedlot can be supported in the Vanderhoof region, and also in terms of relative price compared to other regions currently finishing BC cattle.

FEED DEMAND

Placement weights and subsequently days on feed will largely determine feed demand. Feedlot management will need to consider weights of locally available cattle and the pros/cons of transporting cattle of ideal weight from farther away. Table 8 provides the assumptions on feedlot placements (using a 90% fill rate) to determine feed demand.

Placements	% of total supplies	Steers	Heifers
Q1	4%	100% 750 lbs	-
Q2	13%	50% 750 lbs	50% 550 lbs
Q3	9%	75% 850 lbs	25% 850 lbs
Q4	65%	75% 550 lbs	25% 550 lbs

¹² Marvin R. Duncan, Richard D. Taylor, David M. Saxowsky, Won W. Koo. March 1997. Economic Feasibility of the Cattle Feeding Industry in the Northern Plains and Western Lakes States. North Dakota State University. Agricultural Economics Report No. 370.

The Canfax Trends feeding rations are then used based on placement weight to estimate the feed requirements for barley, silage and supplement shown in Table 9. It should be noted that these feed demand estimates will range higher or lower in any given year, as a feedlot manages cattle rations with placement weights in order to provide a year round supply of fed cattle.

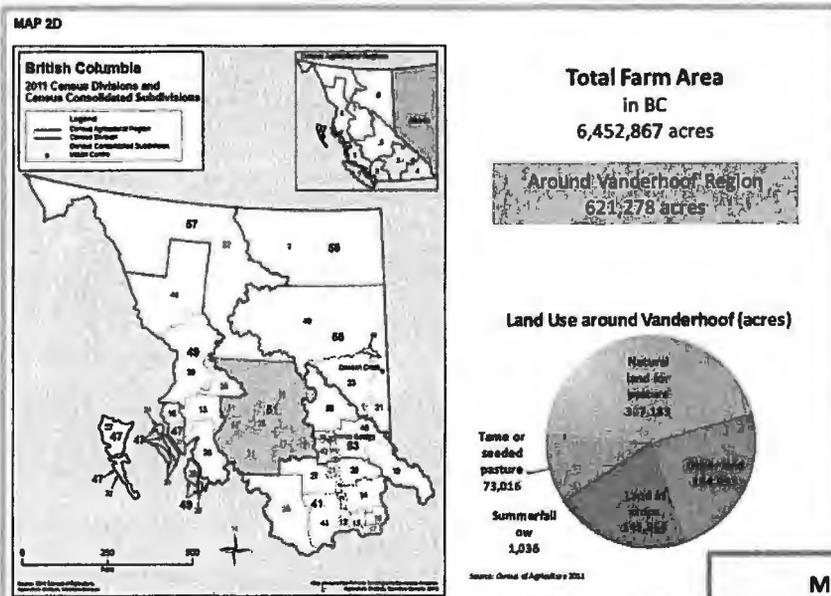
Table 9. Estimated feed requirements based on plant size.

Plant Size /Feedlot Capacity Head per week / Bunk Capacity	Steers #	Helpers #	Total Cattle #	Barley		Silage		Supplement (tonne)
				(tonne)	(acres)*	(tonne)	(acres)*	
500 / 14,000	18,132	6,868	25,000	52,571	48,500	15,586	2,500	1,670
1000 / 28,000	36,264	13,736	50,000	105,143	97,000	31,173	5,000	3,340
1500 / 42,000	54,396	20,604	75,000	157,714	145,600	46,759	7,600	5,010
2000 / 56,000	72,527	27,473	100,000	210,285	194,100	62,345	10,200	6,681

* estimated based on ten-year average yield (barley yield =1.083 tonne/acre, silage yield = 6.126 tonne/acre)

FEED SUPPLY

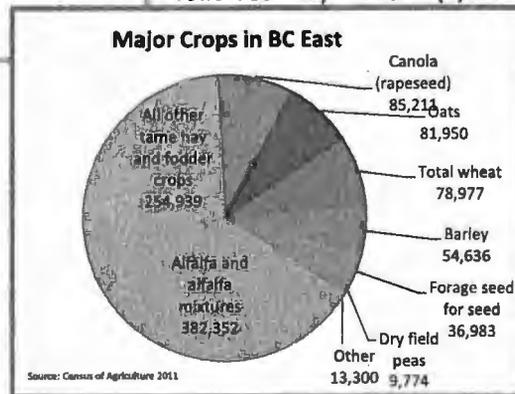
Feedlots prefer to purchase locally produced feed grains delivered to the feedlot and weighted over the feedlot scale. For this access to feed grains, cattle feeders expect to pay regionally competitive prices. This access to competitive feedstuffs typically requires the feedlot be located in areas of surplus feed grain production (Duncan et al. 1997).



While total farmland in the Vanderhoof region is over 600,000 acres, the majority of that is in pasture. Cropland was only 145,000 acres with 122,524 acres in alfalfa and other tame hay, leaving only 23,000 acres for annual crops (2011 Ag Census). The major crop in the immediate area was barley with over 10,800 acres (47% of annual cropland) followed by oats (4,500

acres), wheat (2,400 acres), canola (2,200 acres) and mixed grains (2,000 acres). Hence, cereal acreage covers 17,700 acres in the direct Vanderhoof region.

When all of the BC east region is considered, there are 360,830 acres of annual cropland; and 637,300 acres of alfalfa and other tame hay. Typical crops grown in the region include canola (24%), oats (23%), wheat (22%), and barley (14%) a distant fourth with 55,000 acres (2011 Ag



Census). Land currently used for cereals is approximately **215,600 acres** in the BC east region (this includes the 17,700 acres in the Vanderhoof region).

Land use could be influenced by the presence of a feedlot. Stabler et al. (1993)¹³ found that the Poundmaker feedlot at Lanigan, Saskatchewan influenced land use, increasing CPS wheat by as much as 5% in the immediate area and 3% in the surrounding four RMs, at the expense of both barley and canola acreage. In addition, forage acres in the Poundmaker area expanded more rapidly than other RMs between 1988 and 1993.

It could be assumed that with the reduction in beef cow numbers, there is a surplus of hay production in the region and that some of that hay would be available as forage for a feedlot or could be converted to another crop.

Table 10a provides the feed deficit/surplus of current barley acreage by estimating feed supply using a ten year average for yields less the feed demand shown in Table 9. The results suggest that silage production from the barley and wheat area in the Vanderhoof area will be sufficient to support a 2,000 head feedlot. However, there will be a shortage of local barley supply. A 500-head plant will need to source barley beyond BC east, while larger plants will need to source barley from AB west. While land used could be influenced by increased barley demand, barley acreage will need to expand 11% in BC east to produce sufficient barley for a 500-head plant and expand 121% for a 1000-head plant.

Table 10a. Feed Deficit & Surplus

Plant Size / Feedlot Capacity	Vanderhoof Region 10,809 acres barley silage + 2,409 acres wheat silage			BC East 43,827 acres barley			BC Total 54,623 acres barley			BC East + AB West 548,223 acres barley			
	tonnes	acres	%*	tonnes	acres	%*	Tonnes	acres	%*	tonnes	acres	%*	
500/ 14,000	Barley	(52,571)	(48,534)	449%	(5,099)	(4,707)	11%	6,595	6,089	-	561,114	518,024	-
	Silage	60,132	9,816	-	-	-	-	-	-	-	-	-	-
1,000/ 28,000	Barley	(105,143)	(97,068)	898%	(57,670)	(53,241)	121%	(45,976)	(42,445)	97%	508,542	469,490	-
	Silage	44,545	7,272	-	-	-	-	-	-	-	-	-	-
1,500/ 42,000	Barley	(157,714)	(145,603)	1347%	(110,241)	(101,775)	232%	(98,547)	(90,980)	208%	455,971	420,956	-
	Silage	28,959	4,727	-	-	-	-	-	-	-	-	-	-
2,000/ 56,000	Barley	(210,285)	(194,137)	1796%	(162,813)	(150,310)	343%	(151,119)	(139,514)	318%	403,400	372,422	-
	Silage	13,373	2,183	-	-	-	-	-	-	-	-	-	-

* Barley acreage needed to be increased as a % of current area

A considerable proportion of land in BC is in other cereals such as wheat and oats. This land could be used for barley production. The acreage used to estimate potential feed production in each region is based on cereal production noted above. The Vanderhoof region with 17,700 acres currently in cereal production

¹³ Jack C. Stabler, William J. Brown, M. Rose Olfert. September 1993. Socio-Economic Impacts of the Poundmaker Feedlot-Ethanol Complex. Policy Branch, Agriculture Canada. Technical Report 4/93.

(10,809 acres in barley and 6,900 acres in oats and wheat) could produce more than enough silage for a 2000-head plant (56,000 head feedlot).

If land is used for silage production first, the Vanderhoof area could support a 2000-head plant. There would still be an estimated 7,523 acres that could be used for barley production which could support a 500-head plant. The BC east region with an additional 205,423 acres (total of 215,600 acres when Vanderhoof silage area is included) could produce enough silage and barley for any sized plant or feedlot suggested.

Table 10b. Potential Barley Supply from All-Cereal Area

Plant Size / Feedlot Capacity	Vanderhoof Region 17,700 acres †		BC East 205,423 acres		BC Total 228,325 acres		BC East + AB West 699,023 acres		
	tonnes	%*	tonnes	%*	tonnes	%*	tonnes	%*	
500/ 14,000	Barley Silage	8,149 62,345	274% 14%	222,510 -	24% -	247,317 -	21% -	438,647 -	7% -
1,000 28,000	Barley Silage	8,149 62,345	548% 29%	222,510 -	47% -	247,317 -	43% -	438,647 -	14% -
1,500/ 42,000	Barley Silage	8,149 62,345	823% 43%	222,510 -	71% -	247,317 -	64% -	438,647 -	21% -
2,000/ 56,000	Barley Silage	8,149 62,345	1097% 58%	222,510 -	95% -	247,317 -	85% -	438,647 -	28% -

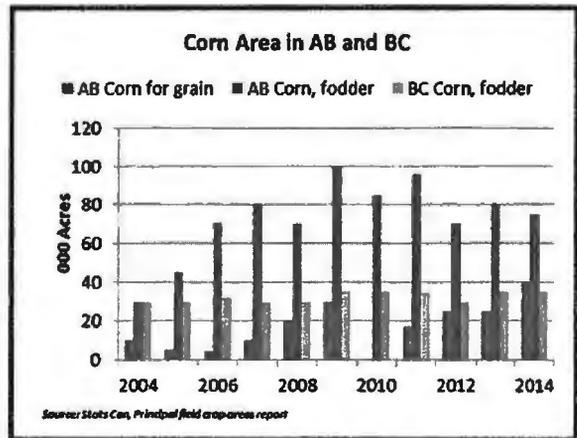
Assumption- BC barley yield =1.083 tonne/acre, AB barley yield =1.339 tonne/acre, barley silage yield = 6.126 tonne/acre in both provinces
 * % of total cereal area needed for each plant/feedlot size † 10,177 acres silage + 7,523 acres barley

The BC east region could supply all of the barley needed with 24% of cereal acres for a 500 head plant, 47% of cereal acres for a 1000 head plant, 71% for a 1500 head plant and 95% for a 2000 head plant. Given the local feed availability, there would be no need to import feed grains from the Peace region unless there was a drought. In which case, freight costs need to be considered.

Corn

Research has been progressing with shorter season corn varieties now available. Corn silage acres in Alberta increased rapidly from 2004 to 2009 and have since stabilized around 80,000 acres. The majority of corn acres are grown on irrigation in the south around Lethbridge where there are enough growing days and heat units. Grain varieties have not proven to be consistently successful yet in the shorter growing season and represent significant risk. However, acres have increased between 2011 and 2014.

The advantage of corn silage is a much higher yield at 12.50 tonnes per acre compared to 6.50 tonnes per acre for barley silage.¹⁴ Consequently, fewer acres would be needed to source feed from if corn silage could be used in the area.



¹⁴ Manitoba Agriculture, Guidelines for Estimating Barley & Corn Silage Production Costs-2014.
http://www.gov.mb.ca/agriculture/business-and-economics/financial-management/pubs/cop_forage_cerealsilage.pdf

FEED COSTS

Feed prices for BC regions were sourced from the AgriStability program for 2009-2011 (this price series has since been discontinued). During this time period BC barley was consistently discounted compared to the Peace Region, NW, NE, Central and South (Lethbridge) Alberta. Price spreads across regions for CW No.1 (5105), CW No.2 (5110), and CW Hulless (5175) were similar ranging between \$6-12/tonne annually.

Table 11a. Seasonal Difference in Regional CW No. 1,2 and Hulless Barley from BC (2009-11 avg)

\$/tonne	Peace Region	NW AB	NE AB	Central	South
Jan	(5.56)	(7.52)	(4.01)	(11.47)	(7.57)
Feb	(12.43)	(14.42)	(10.88)	(18.34)	(14.44)
Mar	(5.56)	(7.52)	(4.01)	(11.47)	(7.57)
Apr	(6.56)	(8.52)	(5.01)	(12.47)	(8.57)
May	(5.57)	(7.53)	(4.02)	(11.47)	(7.58)
Jun	(5.57)	(7.53)	(4.02)	(11.47)	(7.58)
Jul	(5.57)	(7.53)	(4.02)	(11.47)	14.65
Aug	(5.42)	(7.25)	(3.18)	(10.82)	(6.87)
Sep	(6.13)	(7.41)	(3.34)	(10.98)	(7.02)
Oct	(5.69)	(7.53)	(3.46)	(11.10)	(7.14)
Nov	(4.58)	(7.53)	(3.46)	(11.10)	(7.14)
Dec	(5.69)	(7.53)	(3.46)	(11.10)	(7.14)
Annual	(6.19)	(8.15)	(4.40)	(11.94)	(6.16)

Feed (off board) barley had the largest discounts in the region averaging \$10-30/tonne (\$0.22-0.65/bu) annually. The discounts were larger from October to December around \$22-53/tonne (\$0.48-1.15/bu). Every \$0.50/bu decrease in barley price reduces feedlot cost of gain by approximately 7-8¢/cwt (source: Canfax 2013). Therefore cost of gain in the Vanderhoof region would be ~1.6¢/cwt cheaper than Grande Prairie, ~3.6¢/cwt cheaper than Edmonton, ~4¢/cwt cheaper than Lethbridge, and ~4.5¢/cwt cheaper than Red Deer.

Table 11b. Seasonal Difference in Regional Feed Barley Prices from BC (2009-2011 average)

\$/tonne	Grande Prairie	Edmonton	Red Deer	Calgary	Lethbridge
Jan	(8.76)	(19.44)	(26.21)	(16.55)	(22.40)
Feb	(9.14)	(16.39)	(20.53)	(9.44)	(10.77)
Mar	(6.53)	(17.45)	(20.39)	(10.95)	(14.99)
Apr	(2.64)	(15.64)	(22.67)	(9.95)	(15.37)
May	(4.67)	(15.87)	(22.84)	(9.57)	(16.07)
Jun	0.63	(15.74)	(25.90)	(9.39)	(19.79)
Jul	2.32	(18.11)	(26.14)	(15.24)	(23.98)
Aug	(10.03)	(21.94)	(25.52)	(23.33)	(27.83)
Sep	(17.15)	(29.03)	(36.37)	(29.26)	(31.45)
Oct	(26.49)	(37.14)	(43.41)	(37.63)	(41.11)
Nov	(24.21)	(40.63)	(46.99)	(43.03)	(45.91)
Dec	(21.79)	(41.82)	(46.27)	(45.93)	(52.79)
Annual	(10.70)	(24.10)	(30.27)	(21.69)	(26.87)

This represents a feed cost advantage over other regions that are currently finishing cattle sourced from BC and provides an incentive for a feedlot being placed in the Vanderhoof region. If feedlot grain

consumption was sufficiently high to require feed grain to be imported into the local market, the price advantage would potentially be lost. However, feed supplies have been shown to be ample in the region.

MATCHING DEMAND TO SUPPLY

A packing plant in the Prince George area could potentially source 26,500 head from existing feedlots. A feedlot at Vanderhoof could comfortably source 24,000 head locally. This would support a 1,000 head per week plant (50,000 head per year) with 47% of cattle supplied from a Vanderhoof feedlot with a one-time bunk capacity of 13,100 head. Cull cows from Prince George could supply an additional 3650 head (7.3%) and with BC east included, this could increase to 27% of the plant requirements. Seasonally utilization will be a challenge – lower in the summer months and higher in the winter months when more cows are available. Cows would be considered for additional volume if needed in a business plan that differentiates its production with a focus on high quality grain-fed products.

A feedlot producing 24,000 head annually could be comfortably supplied with silage from the local area with barley sourced from the BC east region. Land use would be expected to change slightly in the immediate surrounding region. There would be a feed cost advantage for this feedlot, but it may be offset somewhat by the need to compete with established feedlots for feeder cattle. It is estimated that 18,600 head could be sourced from the local Vanderhoof auction market representing 77.5% of the feedlots supply.

VIABILITY AND RISK FACTORS OF A FEEDLOT AT VANDERHOOF

As noted above, capital costs can eliminate this feed cost advantage if the feedlot is not large enough to compete with Alberta counterparts in terms of economies of scale. Many Saskatchewan feedlots were unable to compete with Alberta counterparts, even with a feed cost advantage, and closed or switched to specialize in backgrounding. Achieving a critical size may be a key aspect in this sector. Interviewing Saskatchewan lots that continue to finish and those who have moved to backgrounding could shed light on why those decisions were made. The higher transportation costs for fed cattle may have been an issue, as found in North Dakota.

There is no known feed mill in the area to source supplements from, requiring them to be transported from the Edmonton region. The localized concentration of feedlots in the Lethbridge region allowed for the creation of certain agglomeration effects in the cattle feeding input and support industries. This concentration brought environmental concerns and therefore further expansion is less likely to be as geographically concentrated.¹⁵ It does highlight the disadvantages of feedlots that are geographically isolated from input and support industries.

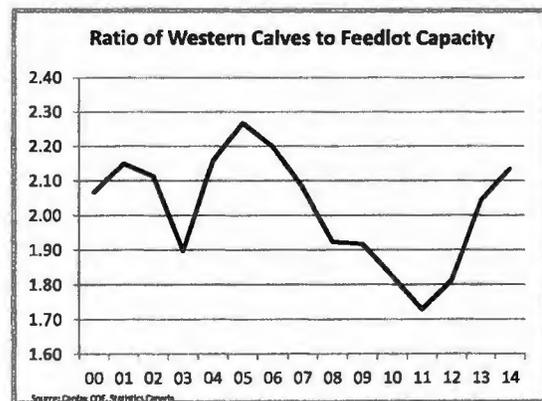
The survival of a feedlot in Vanderhoof will be dependent on its ability to sell fed cattle locally; otherwise the transportation disadvantage of shipping fed cattle to Balzac or High River would make it infeasible.

¹⁵ Cattle/Beef Subsector's Structure and Competition under Free Trade. David Anderson, William Kerr, Guillermo Sanchez and Rene Ochoa.

Alberta has proven to have a strong competitive advantage in finishing cattle while Saskatchewan's finishing and packing sectors have largely disappeared despite access to ample feed grains. Their backgrounding sector continues to exist as many finishing lots have switched to specialize in backgrounding before shipping cattle to Alberta for the final finishing phase. While the North Dakota feedlot industry was developed because of a cost of gain advantage, transport costs for fed cattle to the packing plants in Nebraska largely eliminated this benefit. This has encouraged investment in a packing plant in South Dakota that would address this cost disadvantage. However, such an isolated mid-sized plant has had numerous financial difficulties. This makes the viability of the proposed project dependent on the business plan for the packing plant.

IMPLICATIONS ON ALBERTA FEEDLOT CAPACITY

Beef cattle numbers are at the bottom of the cattle cycle. Excess capacity in Alberta has resulted in 35 finishing feedlots closing over the last three years (from 186 lots in 2011). Most, if not all, of the adjustment to smaller inventories has now occurred. The Canfax Demographic Survey of Alberta and Saskatchewan finishing lots with >1,000 head one-time bunk capacity had 151 lots on January 2014 with 1.38 million head bunk capacity. This would result in 2.13 turns if all of western Canada's 3.0 million calves (as of January 1st) were finished domestically. A significant improvement from 2011 when capacity would have provided 1.73 turns for all of western Canada's calves.



As technology and genetic advances have increased carcass weights, fewer cattle are needed to produce the same amount of beef. Therefore it is necessary to displace some of the feedlot capacity in other regions of the country. To do so, production from new feedlots must be more cost effective than from feedlots or it must serve a niche market that is not affected by the established feedlot capacity with its potentially lower capital costs (Duncanetal.1997).

The feedlots that have closed have ranged in size but have been primarily smaller lots. Some of the larger lots have switched to specialize in backgrounding.

Therefore, a feedlot in the Vanderhoof region would be expected to remove a medium or several small feedlots from around Edmonton where those feeder cattle would have historically gone. Given the industry has adjusted to current inventory levels the lost Alberta capacity would be directly proportional to the size of the proposed Vanderhoof feedlot.

PACKER CAPACITY AND UTILIZATION IN CANADA

How will the addition of a small/medium FI plant in BC impact domestic slaughter in Alberta versus live cattle exports to the US.

Will it reduce dependency on US plants?

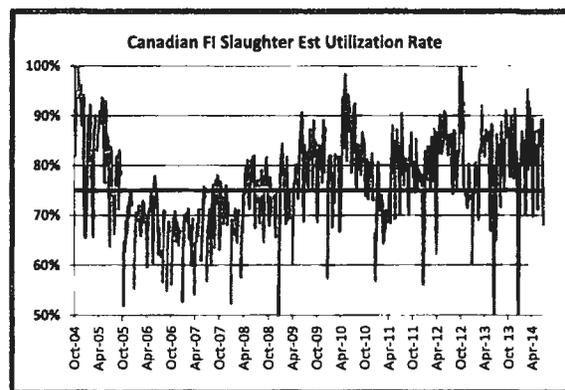
Canada currently has idle capacity at Calgary, Balzac, Levinoff and Moose Jaw. In addition, with the right market situation the two large plants in Alberta could increase capacity with more labour. Federally inspected slaughter has been 82% of capacity from January to June 2014. Technically, an additional

12,000 head could be slaughtered domestically every week. In 2013, fed and feeder exports averaged ~12,600 head per week. So the capacity is currently available to slaughter everything domestically (excluding cows), although there would be seasonal variations which may require exports. However, seasonality means weekly volumes ranged from 3,100 to 23,600 head where high volume periods would still result in live exports.

Much investment in packing plants over the years has been justified with the argument that it will increase local demand and therefore decrease dependence on live cattle exports. One solution to increased concentration and questions of market access generated by the consolidation trend is to create investment incentives to attract new packing plants to the industry. Producers often welcome a new plant opening, viewing it as having a likely positive effect on livestock procurement prices in the geographic region surrounding the plant (Ward and Hornung 2005¹⁶).

Much of the research on the positive price effect on fed cattle has been done with plant openings during an expansion phase when additional slaughter capacity was needed. However, since Canada currently has the capacity to slaughter the majority of fed cattle domestically, it is economics that are driving cattle south despite additional costs from COOL regulations.

For the last several years packing plants have been closing in Canada and the US as liquidation has reduced cattle supplies. In Canada, Federally inspected slaughter capacity has declined on average 5% annually since peaking in 2006. The most recent closures in the US include Cargill's Plainsview, TX plant (4,500 hd/day), National Beef's Brawley, CA cow plant (1,900 hd/day) and Cargill's Milwaukee, MI cow plant (1,200 hd/day). More cow plants are expected to close over the next year as expansion gets underway in the US and cow slaughter stays low. It has been theorized that closing capacity during times of excess capacity allow other plants in the region to operate at higher plant utilization, thereby supporting fed cattle prices as fixed costs at each plant are spread over more numbers (Ward and Hornung 2005).



At the same time, smaller plants are opening in western Canada. Qu'Appelle Valley re-opened in March 2014 processing 1,000 head of cows per week but its license was suspended in July 2014. It is anticipated that the Balzac plant will reopen as Harmony Beef in the spring of 2015 adding 625-3,000 head per week in its first year of operations. This facility is designed for 4,000 head per week and is targeted to reach that number in year three. These smaller plants are designed to add value by targeting niche markets and increasing local demand in order to improve the fed cattle basis. However, these plant openings will provide 5,000 head per week additional capacity, creating excess capacity in Canada. With weekly slaughter averaging around 50,000 head this would decrease federally inspected plant utilization from 82% to 76%. If a 2,000 head per week plant was opened in BC this would drop utilization to 74%. The Canadian industry has rarely operated for a sustained period with utilization below 75% as it typically results in a plant closing. For example, in December 2010 utilization fell below 75% and by April 2011 the XL Calgary plant had closed. This is not surprising as Scheoder et al. (2009) found a 1% increase in slaughter

¹⁶ Clement E. Ward and Jonathan T. Hornung. 2005. Price Effects from an Anticipated Meatpacking Plant Opening and Unexpected plant closing. *Journal of Agricultural and Resource Economics* 30(3): 469-479

capacity utilization in western Canada strengthened the fed cattle basis by \$0.07/cwt. Therefore, the estimated 6% decrease in utilization would correspondingly weaken the fed cattle basis by \$0.42/cwt.

In order to support increased packing capacity in Canada, there would need to be more cattle or another small to medium sized packing plant already operating could be put at risk of closing. This could potentially be a number of smaller provincial plants in BC if the local market is targeted, displacing product from these operations but that is not the proposed strategy for a new plant. Also, a portion of the provincial slaughter will be cull cows and not high quality fed cattle and therefore will leave these plants unaffected. In terms of small to medium federally inspected plants, the closest one would be Canadian Premium Meats at Lacombe, AB followed by Harmony Beef at Balzac, AB. All of these three Federally Inspected plants would be expected to have similar business plans to compete against the larger packers, making them direct competitors for business.

WILL A BC PACKING PLANT REDUCE DEPENDENCE ON THE US MARKET?

Figure 1 shows the supply curve for Canadian fed cattle (S_{CAN}) as prices increase the quantity produced increases. Domestic demand for fed cattle is stable at D_D providing a price (P_D) and quantity (Q_D) when there are no exports due to trade restrictions. But when market access to the US is open, this is represented as new demand from the US (US_D) which allows the Canadian market to increase both supply and price to P_{US} and Q_{US} . The volume from Q_{US} to Q_D is the volume of fed cattle exported. Canada as a price taker receives P_{US} on all fed cattle, not just those exported.

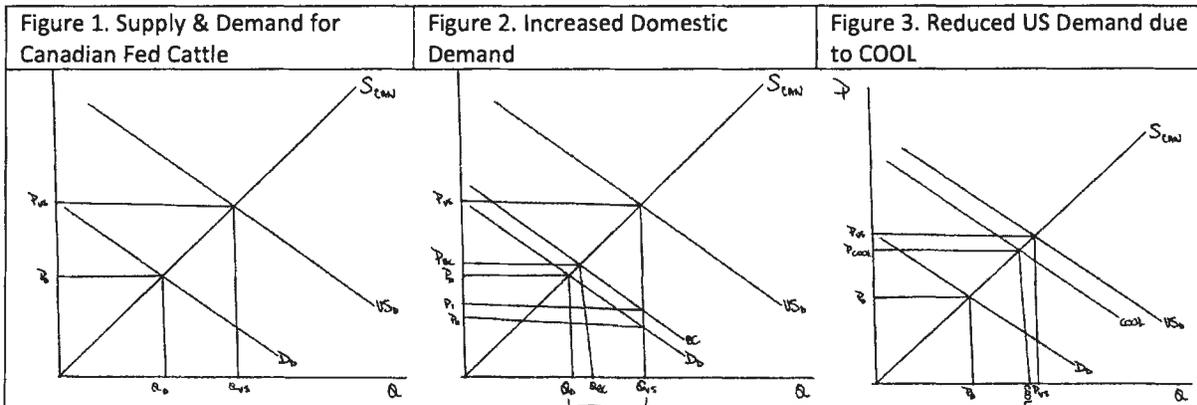


Figure 2 shows how increasing domestic demand for Canadian fed cattle such as a new packing plant in BC. *It should be noted that additional capacity does not automatically mean increased demand as shown here.* Additional capacity when supplies are large (e.g. during expansion) typically increases demand, but during the liquidation or consolidation phase additional capacity can create lower utilization rates which decrease packer’s willingness to pay for fed cattle (the above section estimates this impact to be around \$0.42/cwt) and offset any price increase from having another buyer in the market. In order for demand to increase (to Q_{BC}), a BC plant would need to be willing to pay more for fed cattle than the current market price (P_{US}). Most entrants would only be willing to pay the going market price, and therefore have no price impact.

Figure 2 assumes a BC plant would increase domestic demand (D_D to BC) this would reduce fed export volumes by the amount from Q_D to Q_{BC} . When a border closure occurs, Q_{US} fed cattle are captive to the domestic market dropping the fed cattle price to P_0 . This decline in price would not be as large with an increase in domestic demand, dropping only to P_1 . However, increasing domestic demand does not

impact the price received for fed cattle since prices are still determined in the larger US marketplace (P_{US}). Therefore, a BC plant will not change the price impact from COOL or a similar regulation that reduces US demand for Canadian cattle. In fact the ability to reduce fed cattle exports depends on Canadian plants being able to compete with US plants for those animals instead of reducing domestic utilization. Given the current labour cost disadvantage in Canada, reducing domestic utilization is a key possibility. It should be noted that while supply will adjust over the long term (as shown in the chart) over the short term supplies are fixed. When supplies are fixed, additional capacity without additional cattle results in reduced utilization rates either in Canada or the US. The loss of a NW US plant that currently bids on Canadian cattle would also be a loss to the industry. It should be noted that over the last 20 years Canada has exported 17% of fed cattle marketings, even when marketings are smaller than current levels.

Figure 3 shows how a regulation like COOL reduces US demand for Canadian fed cattle from US_D to $COOL$. This reduces the price US packers are willing to pay from P_{US} to P_{COOL} , acting like a tax on the industry from additional costs. It also reduces the volume of fed cattle exports from Canada to the US from Q_{US} to Q_{COOL} . It is only when domestic demand increases to the point that live exports are not needed (e.g. domestic demand for fed cattle is equal or higher than US demand for Canadian fed cattle) will the impact of regulations like COOL be mitigated or eliminated. This typically occurs when a market goes from being a net exporter to a net importer as prices would then be high enough attract product into Canada. Therefore, increasing capacity (assuming it increases demand) could decrease the volume of live exports and reduce the price drop from a total border closure (like BSE) but it is not guaranteed to increase fed cattle prices.

Developing a packing plant in Canada with the goal of reducing dependence on the US market or mitigating the impact from regulations like COOL is deceptive as this will not be the outcome. However, additional domestic capacity will support fed cattle prices when border disruptions occur and have the potential to reduce the volume of fed cattle exported.

FIVE YEAR CATTLE SUPPLY OUTLOOK

In 2013, China entered the global beef trade in a big way, emerging as a major importer. As exporters shift to supply this market there are opportunities for other exporters. Moving forward Asian demand will remain strong, as their economies and personal wealth grow. Beef supplies globally are tight as many major exporters have been adjusting to higher feed grain prices (US, CDN), drought (US, Aus, NZ), or stronger domestic demand (Brazil) over the past five years. Cattle prices globally jumped sharply higher in 2014, providing the market signal for producers to expand. However, any herd growth is expected to be slow in most countries.

Regardless of the country, most producers are older, ready to retire and are not interested in the additional labour required to expand the herd. Competition for land remains strong and while feed grain prices are expected to lower over the next five years, how many years of lower returns will a young grain producer need before they consider diversifying into beef cattle? Despite lower grain prices, higher yields mean that many grain producers will not see a drop in total revenue in 2013/14. Grain farmers are not currently looking at alternative sources of revenue. The grain outlook is for lower prices with replenished global ending stocks and barring any major weather incident. This may mean that mixed operations may not look to get back into the beef business until 2016/17 or later.

Why slow growth?

High cow and trim prices will encourage culling rates above the historic average of 10-11%. Particularly with continued price premiums in the US drawing cull cows south. This will require all of the growth to

come from heifer retention. Calf prices in the fall of 2013 did not inspire expansion; breeding heifer numbers on January 1, 2014 were steady compared to the year before and still 9% below the long term average. As prices increased in 2014 bred heifer prices are now so high that they are impractical for many producers given cash flow limitations. That means many will wait until the fall of 2014 to retain and develop heifers of their own. However, that represents a significant opportunity cost.

It should also be remembered that with decreased feed costs and technology advancements larger carcass weights mean that every additional cow to the national herd produces that many more pounds of beef. Fewer cows will be needed in this expansion because carcass weights will amplify the additional beef cow numbers. Markets respond to pounds of beef, not the number of cows.

The cattle cycle in 2015-2019?

The beef industry is currently in the third year of the consolidation phase of the cattle cycle. During the consolidation phase some producers will be leaving the industry, while other producers expand their herds leaving a net zero change in the national number. Since 2012, the beef cow herd has been relatively steady declining zero to 1.5% annually. The consolidation phase typically lasts for 2-3 years, but is expected to be prolonged to 4-5 years due to numerous market factors. Things that will prolong the consolidation phase include: producer age, higher input costs limiting profits, and greater risk aversion with equity losses over the last decade, a high level of volatility in the market place and greater profits in other commodities. In order to move from the consolidation to expansion cow/calf producers need to see profits that are competitive with producing other commodities and be confident that those profits will be maintained long enough to justify investing in bred heifers.

Higher cow marketings, particularly in the fourth quarter of 2013 resulted in a smaller beef cow inventories on January 1, 2014 down 0.8% at 3.9 million head. Despite higher calf prices in the first half of 2014, interest in bred heifers has been soft. It is unlikely that heifer retention will increase enough to stabilize the herd in 2014, resulting in an even smaller number on January 1, 2015. If expansion in the beef cow herd is not seen until year five (2016) there will be three years of larger calf numbers (2017-2019) contributing to two years (2018-2019) of larger production.

Risk factors that will:

Encourage Expansion:

- Lower Loonie
- Lower grain prices over the next five years
- Global & domestic beef demand holds steady
- Other major exporting country expand production & export volumes incrementally
- COOL removed completely
- More risk management options are available today (e.g. price insurance)

Discourage Expansion:

- Par Exchange Rate with US
- A bounce in grain prices
- Erosion of global & domestic beef demand
- Significant increases in production and export volumes out of India/Brazil/Australia
- COOL continues under the amendment
- Fences and infrastructure have been removed on mixed farms.
- Land bought by investors has increased the amount of grassland available for rent. Young producers will need a new paradigm for surviving the bad years if they don't have equity

Whether the national herd expands or not provides the foundation of cattle marketings in the future. However, if the anticipated cautious expansion occurs it does not guarantee that more fed cattle will be available for the domestic packer. Relative cost of gain, the fed basis and the number of US packers taking

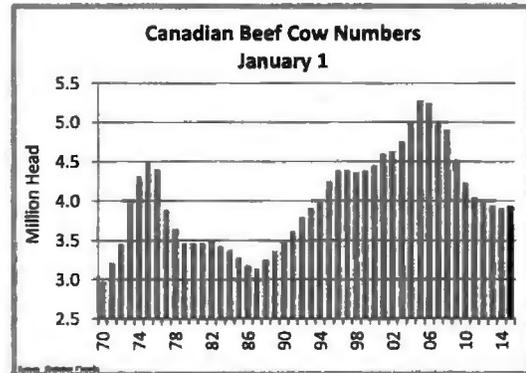
Canadian 'B' cattle under COOL will determine feeder exports and subsequently the number of fed cattle finished in Canada. Expansion may occur, but if the US has a cost of gain advantage many of those additional feeders could be exported.

How quickly is the Canadian herd expected to rebuild?

Expansion is anticipated to occur cautiously with beef cow inventories increasing 5-7% from 2014 to 2019 (approximately 0.6-1.5% annually). When combined with historic levels of live feeder and fed cattle exports, cattle marketings would shrink 6% after 2014 but rebound back to 2014 levels by 2019. A medium level of exports would allow marketings to increase 1% annually over the five years. Historically low export levels would support marketings 8-13% above a 2014 benchmark level.

How quickly can the Canadian herd rebuild?

How quickly expansion occurs is determined by the culling rate and heifer retention. If the culling rate drops below 11% and heifer retention increases above the long term average expansion could occur rapidly. A rapid expansion could increase beef cow inventories by as much as 18% or 2.7% annually. However when combined with historic levels of fed and feeder exports it would still result in smaller marketings between 2015-2017 (down 1-9% from 2014).



Worst Case Scenario

Maintenance would leave the beef cow inventories unchanged from 2014 to 2019 and would be a prolonged consolidation phase as producers focused on other commodities. When combined with historic levels of live feeder and fed cattle exports, cattle marketings would shrink 3-4% after 2014 with no rebound unless exports decreased. A medium level of exports would allow marketings to increase by 3-4% and historically low export levels would support marketings 10% above a 2014 benchmark level.

A move back to liquidation before expansion, while rare is not unheard of. In 1984, after five years in the consolidation phase, the Canadian herd liquidated for three years before moving into the prolonged expansion of the 1990s.

Other Exporting Countries

In the US the profit incentive has returned more powerfully than expected. Pastures and ranges have returned in some regions and feed is more available. But drought is limiting forages in other significant areas. This means the national beef cow expansion is expected to be slowed and that tight beef supplies will be with the country for several more years.¹⁷ Similarly, drought currently has Australia liquidating their cow herd for the second consecutive year. Brazil is focusing on improving productivity to increase beef production (e.g. reproductive efficiency, average daily gains on grass, carcass weights). However, much of this increased production will be focused on the growing domestic market. India is the only significant export country that is actively expanding and it is based on a dairy herd. There is currently opportunity in the global market for additional production of high quality grain fed beef.

¹⁷ <http://www.ubcomtell.com/News1.aspx?StoryId=939123&ubsourcenum=97&t=r>

SUPPLY ANALYSIS CONCLUSION

The Prince George/Vanderhoof regions have an ample supply of feeder cattle and grain production which are exported out of the region. A packing plant and feedlot could be developed in the region and have a competitive advantage by saving the transportation costs of shipping feeders and fed cattle to a plant in Alberta, then shipping boxed beef back to the coast.

Feeder supplies in the region are ample to support a small to medium sized packing plant. A 1000 head per week plant would require 55% of the feeder cattle in the BC east region. A 1,500 head plant would require 48% of all feeders in BC and a 2,000 head plant would require 65% of all feeders in BC or 31% of the feeders in the BC east and AB west regions.

Given the local supply of feeder calves are currently being trucked to central AB for finishing, transportation both in and out of the region could be saved with the development of a local feedlot. A feedlot at Vanderhoof could comfortably source 24,000 head locally. This would support a 1,000 head per week plant (50,000 head per year) with 47% of cattle supplied from a Vanderhoof feedlot with a one-time bunk capacity of 13,100 head.

A three year horizon to begin plant operations would be well-timed with the expansion phase of the cattle cycle.



PLANT ANALYSIS

Canada's meat industry generates 64,750 jobs across the country, making it the largest component of our food processing sector (Source: Canadian Meat Council). The industry has seen a trend in recent years of meat packers and processors moving away from traditional locations close to major urban centers to less densely populated rural locations. This includes the closure of the XL Beef in Calgary and Quality Meat Parkers Ltd in Toronto. The majority of the cattle and hogs previously processed at these facilities are now processed in Brooks AB and Breslau ON respectively. This is driven by the need for lower costs along with less political and environmental pressure.

Prince George, British Columbia is the largest city in one of the fastest growing regions in Canada. It has superior transportation connections to provincial, national and global markets through an international airport (YXS), a CN distribution centre, Highways 16 and 97 and the Port of Prince Rupert. It is also ideally located near feeder cattle and feed supply and has the potential to be in close proximity to a feedlot.



Prince George is positioned as a prime region for growth, opportunity and investment. The Prince George economy has grown by nearly double the rate of the BC economy annually since 2010 (4.7% compared to 2.4%). It is both growing and diversifying with \$140 billion in resource projects proposed for the next decade. MSN Money recently recognized Prince George as one of the Top 10 Canadian cities to find employment. Average household income is \$76,545, just slightly higher than BC average at \$73,063. (Source: Initiatives Prince George). It's important to note that the economy is driven extensively by forestry and has been impacted significantly by the pine beetle infestation. Economic diversification is a major regional priority.

REGULATORY REQUIREMENTS AND PERMITTING

Federal Acts and Regulations that pertain to operating a meat packing plant include:

- Agriculture and Agri-food Monetary Administrative Penalties Act
- Canada Agricultural Products Act
- Canadian Food Inspection Agency (CFIA) Act
- Consumer Packaging and Labeling Act
- Health of Animals Act and Regulations
- Meat Inspection Act and Regulations

CFIA approval of a plants require a HACCP Plan prior to operating approval.

Specified risk material (SRM) disposal must also be addressed. SRM means the skull, brain, trigeminal ganglia, eyes, tonsils, spinal cord and dorsal root ganglia of cattle aged 30 months or older, and the distal ileum of cattle of all ages, but does not include material from a country of origin, or a part of a country of origin, that is designated under section 7 as posing a negligible risk for Bovine Spongiform Encephalopathy.

(Source: Health of Animals Regulations)

Currently there is only one commercial rendering company in Western Canada operating a dedicated facility for SRM disposal and it is in Calgary. Trucking SRM to Calgary for disposal is an option but would mean additional costs.

It should be noted that in 2009 the BC government rejected a proposal to establish waste composting at a slaughter plant in Westwold as well as two other plants in BC's Interior. Instead a trucking contract was granted to haul waste to Alberta.

SRM disposal is currently approved at landfills in Dawson Creek, Salmon Arm and Williams Lake. The quantities currently approved are not likely suitable for a small to mid-sized plant. Options to dispose of SRM locally would need to be developed. This could include an application for disposal at the Clearview landfill site that is approximately 122 km from Prince George.

If additional cold storage for finished products is required, CFIA approval of that facility will also be required for interprovincial trade or international export.

International approvals are also required for countries identified for export. These could include the United States, European Union, China, Japan, Korea, Hong Kong, Taiwan, Singapore, United Arab Emirates, Saudi Arabia, etc.

Each has their own requirements and approval processes. Some of the key requirements are as follows:

European Union:

In order for Canadian Federally Registered beef establishments to access European Union markets, the first condition is that the Canadian beef must be produced under the Canadian Program for Certifying Freedom from Growth Enhancing Products (GEPs) for the export of beef to the EU.

One of the key requirements is compliance with European Union rules on decontamination. Interventions (e.g., use of hot water or of chemicals except lactic acid) to decontaminate dressed carcasses are not permitted. However, the use of steam is allowed provided that:

- Water used for steam production is potable;
- Steam application does not result in irreversible discoloration of the meat (as determined by visual inspection);
- Hygiene requirements are respected; and
- It is considered as a Critical Control Point in the HACCP plan.

The European Union also requires separate employee welfare areas for slaughter floor and cut floor staff which has implications on plant design and construction cost.

People’s Republic of China:

The slaughtering and processing plants and federally registered cold storage facilities exporting pork and beef to China must meet the requirements of the Meat Inspection Act and the requirements of the Chinese veterinary hygiene and public health regulations which apply to Chinese meat processing plants in the relevant Chinese laws and regulations.

Water potability: records must show absence of fecal coliform (*Escherichia coli*) and a maximum total plate count of 100 microorganisms per ml or less.

China also requires separate approval for off-site cold storage. Provincial Acts and Regulations that pertain to operating a meat packing plant include:

- Environment Management Act
- Code of Practice for Slaughter and Processing Industries
- Waste Discharge Regulation
- Provincial Agricultural Land Commission (ALC) i.e. SRM
- Environmental Assessment Act
- Reviewable Projects Regulation

We have worked with the Environmental Standards Branch and Environmental Protection Division to try to clarify requirements including waste disposal and/or treatment requirements.

They consider “treatment” different to “disposal.” Treatment may be primary settling out the solids, and then discharging the liquid portion to the ground (in a detention pond or by irrigation), which would be the disposal, and composting the solids (is a treatment) and land applying (is the disposal), or burying the solids (also disposal).

If the slaughter facility has a discharge (or discharges) to the environment (liquid or effluent (wastewater), semi-solids or solids, the owner/operator needs to register the facility and follow the requirements in the Code of Practice for Slaughter and Processing Industries. If the slaughter facility is connected to the municipal wastewater system, then effluent (or wastewater) from the slaughter facility is going into a pipe and is not considered to have a discharge – of effluent – to the environment.

The blood, fat, oils, cleaning agents, etc. may be accepted into the municipal system, but they may require some kind of treatment dependent on levels. Some slaughter facilities screen and/or separate out the blood, fats, oil, grease (FOG) and add it to their solids for treatment/disposal. This is referred to as semi-solids in the Code.

CFIA and some specific countries have potable water requirements that will have a big impact on land cost and water services. Environmental engineering analysis would be required to determine the feasibility of drilling a well and using well water along with a water treatment facility versus relying on city supplied water. This would need to include assessment of risk of well water contamination and effluent outputs. These could cause production disruption, potentially trigger recalls of millions of dollars of product in the supply chain and impact export approvals.

For the purpose of this viability study, we have based analysis on operating within the city limits connected to the municipal sewage system. We have built in a small allowance for treatment that could include screening and/or separating out the blood, fats, oils and grease.

Consultation with the Environmental Protection Division has concluded that Environmental Assessment should not be required as effluent output is projected to less the 800 m3/day.

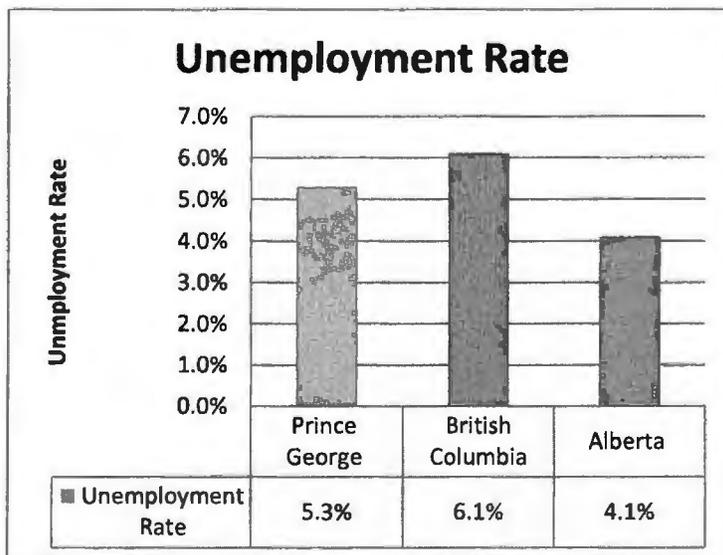
Municipal requirements include the approval of a building permit and issuing of business license. Municipal considerations are detailed under land requirements.

AVAILABILITY OF LABOUR AND AFFORDABLE HOUSING

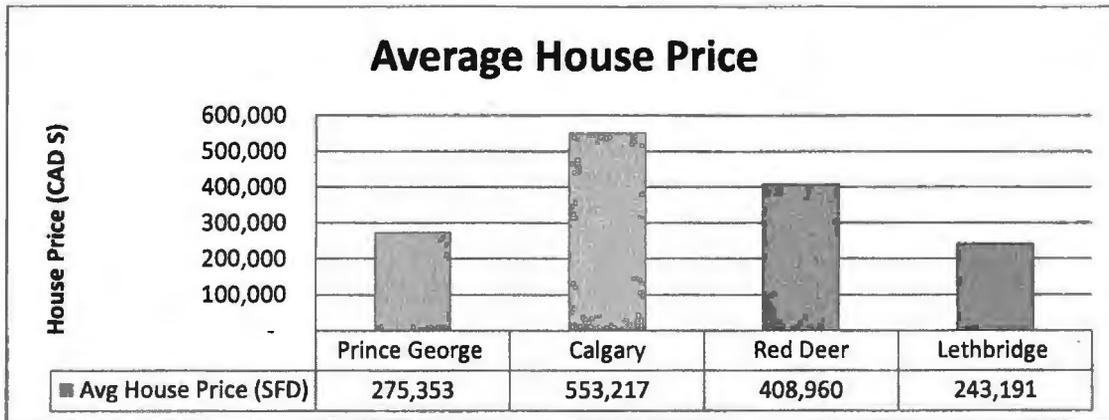
The Canadian meat packing sector is hampered by a chronic shortage of skilled labour with the problem being more acute in Western Canada. The recent changes proposed to the Temporary Foreign Worker Program are expected to only compound this problem.

With a population base of 76,000, Prince George has sufficient size to support labour and required support services. By comparison, some other Western Canadian centres with federally inspected plants such as High River AB (12,920), Brooks AB (23,430) and Langley BC (25,085) are much smaller and rely on drawing from other centers.

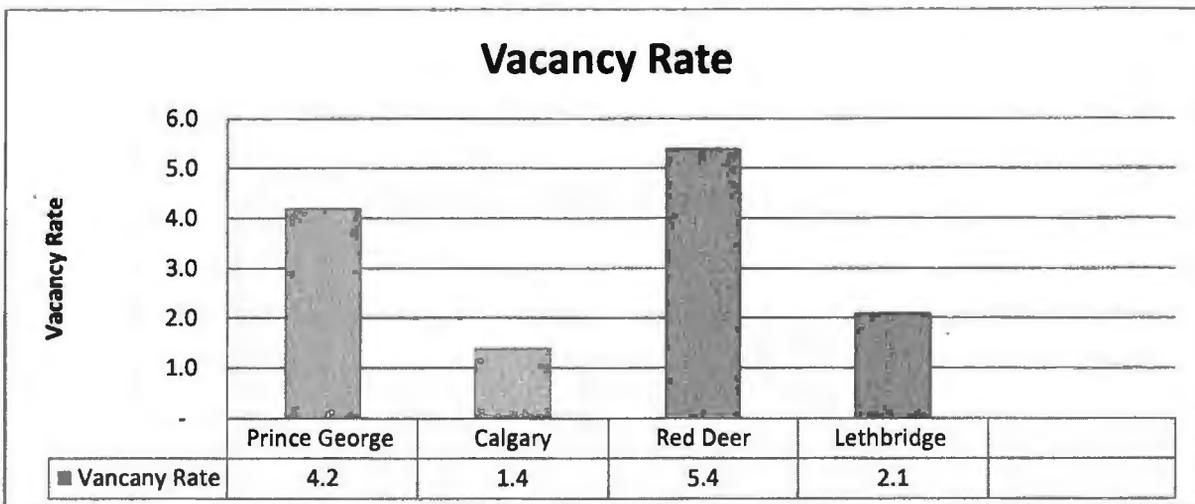
Unemployment rates in Prince George are 5.3%, lower than the province of BC's rate of 6.1%. Alberta's current unemployment rate is 4.1%. An estimated 4,028 people within the Prince George market are listed as unemployed. There may be potential for some to be recruited and trained for various positions within the plant while the positions that require specialized processing skills would need to be recruited from outside the local market.



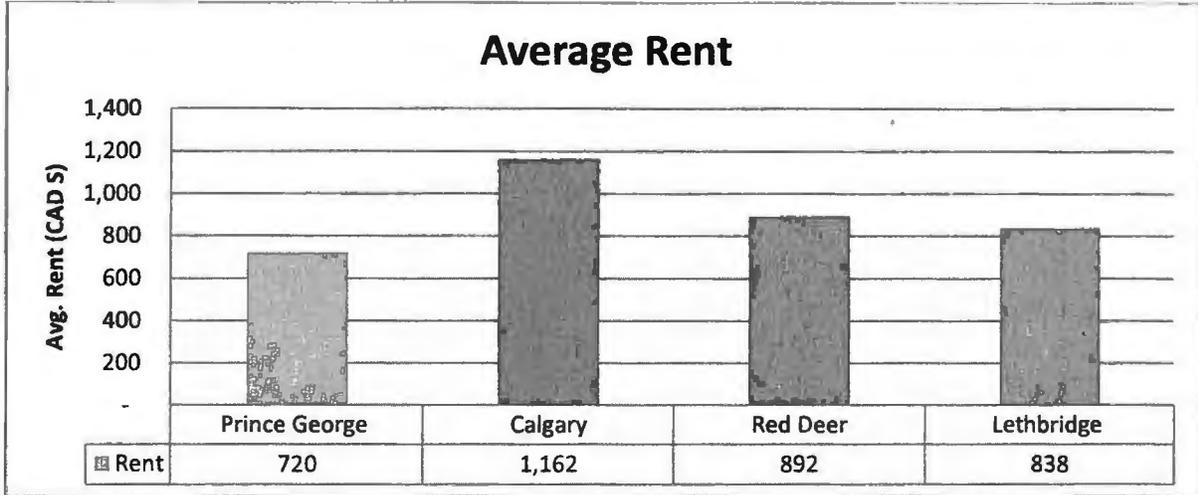
Prince George is positioned as a city of opportunity where people can afford to make their dreams come true. Housing is more affordable than other centres with an average house price of \$275,353. The percentage of household income required to finance a home in PG is 32%, considerably lower than in other areas of the province like Vancouver where 82% percent of income is required to finance a home. (Source: BC Northern Real Estate Board – Housing Affordability Index)



Rental property is more readily available as vacancy rates at 4.2% are higher than other centers.



Rental property is more affordable as average rent at \$720 is also lower than other centers (Vancouver \$1,090, Calgary \$1162, Lethbridge \$838.) This affordable quality of life set against the natural beauty of the region make it very appealing compared to some other centres with meat packing facilities.



LAND

Land, building construction and equipment will be the largest capital costs.

A site within city limits is recommended for access to municipal water and sewage. It will also provide good access for staff and support services including the CN Rail intermodal terminal. Location within the city will require careful consideration to minimize any potential issues with livestock management and stock pen waste as well as any potential associated odor or air quality issues. Within the city of Prince George is a “bowl” created by surrounding banks. A location outside of the “bowl” may be preferred and recommend by city planners.

Zoning requirements cannot be confirmed until an application is submitted but will most likely require major/heavy industrial zoning. City tax rates are higher for heavy versus light i.e. 45.55 versus 24.94 (source City of Prince George).

It is estimated that five acres of heavy industrial will be required specifically for the plant. This will allow for scaling of operations on the existing site.

There are at least nine industrial parks within the city that offer potential site options. Heavy industrial land can be purchased within the city limits for \$125,000 - \$250,000 per acre with city water and sewer services. Electrical (25KV) is available along with Fortis supplied natural gas. This would offer the most reliable utility service and convenient access for employees and the most efficient access to transportation infrastructure.



A plant location within the city would not likely allow for co-location of a feedlot. Agricultural land west of the city or in the Vanderhoof area would be a more desirable and cost effective location.

As an alternate option for plant location, agricultural land east of the city with existing electrical service can be purchased for \$3,000 - \$5,000 per acre but would require development of gas, water and sewer services. A city location connected to the municipal water and sewage system was used for this analysis due to potential risk of well water contamination and effluent outputs.

We estimate on serviced land cost at \$1.0M.

CONSTRUCTION

The plant would be a purpose-built design to meet export requirements. Design would be driven by the need to optimize livestock handling, employee safety, food safety, productivity, energy efficiency, etc.

A phased approach to plant design is recommended to allow for scaling of operations. This would include placement of stock pens, carcass cooler and finished product storage on the perimeter to allow for cost effective expansion.

Utilizing a current plant design modified to meet the requirements, the estimate for the initial build would be approximately 35,000 square feet and would process about 1,000 head per week. A phased expansion of stock pens, finished goods cooler, freezer, loading docks and employee welfare areas would allow for a second shift per day and would require about a 10,000 square foot expansion to 45,000 square feet. Additional production engineering would be required to validate size requirements and capacity targets.

The author worked with Prince George based construction firm IDL projects and their recommended specialist on food manufacturing construction. They have provided a class two estimate on design and construction. Building construction costs are estimated at \$11M plus cost of carcass rails system estimated up to \$2.0M for a total of \$13M for a 1,000 head per week facility. Based on a 35,000 foot blueprint, that is approximately \$370 per square foot. Using \$400 per square as a guide for future expansion, at 10,000 square foot addition at a later date would potentially cost \$4M. These estimates include a 10% contingency.

An additional contingency of \$1.0M was added for any additional engineering, consulting and professional services to conclude the permitting and construction process.

Effluent levels will also have to meet existing provincial standards which could potentially require waste water treatment. An additional contingency of \$1.0M was added should a water treatment system be required.

A plan will need to be developed with CFIA for disposal options for inedible waste and specified risk material separation, handling and disposal. This may affect estimated plant costs if a rendering/biofuel system makes economic sense.

EQUIPMENT

Automated processing equipment is expensive but essential to optimize safety and productivity. Kill and cut floor requirements include carcass rail system, knocking box, hide puller, split saw, carcass steam pasteurization chamber, etc. Cut floor requirements include boning lines, conveyers, vacuum packaging machines, grinders, scales, etc. Shipping requires disposal lifts, fork lifts, roll back racking etc. An on-site lab will require testing instrumentation. Employee welfare areas will require lockers and office will require specialized software, computers, etc.

Equipment costs are estimated at \$5 M.

44

TOTAL CAPITAL COST

Estimated total capital cost for 1,000 head per week plant at \$21M and for 2,000 head per week plant at \$25M.

Estimated Capital Cost (\$ M)			
	Phase 1	Phase 2	Total
	1,000	2,000	
	Head/Week	Head/Week	
Land	1		1
Construction	13	4	17
Water Treatment	1		1
Professional	1		1
Equipment	5		5
Total	21	4	25



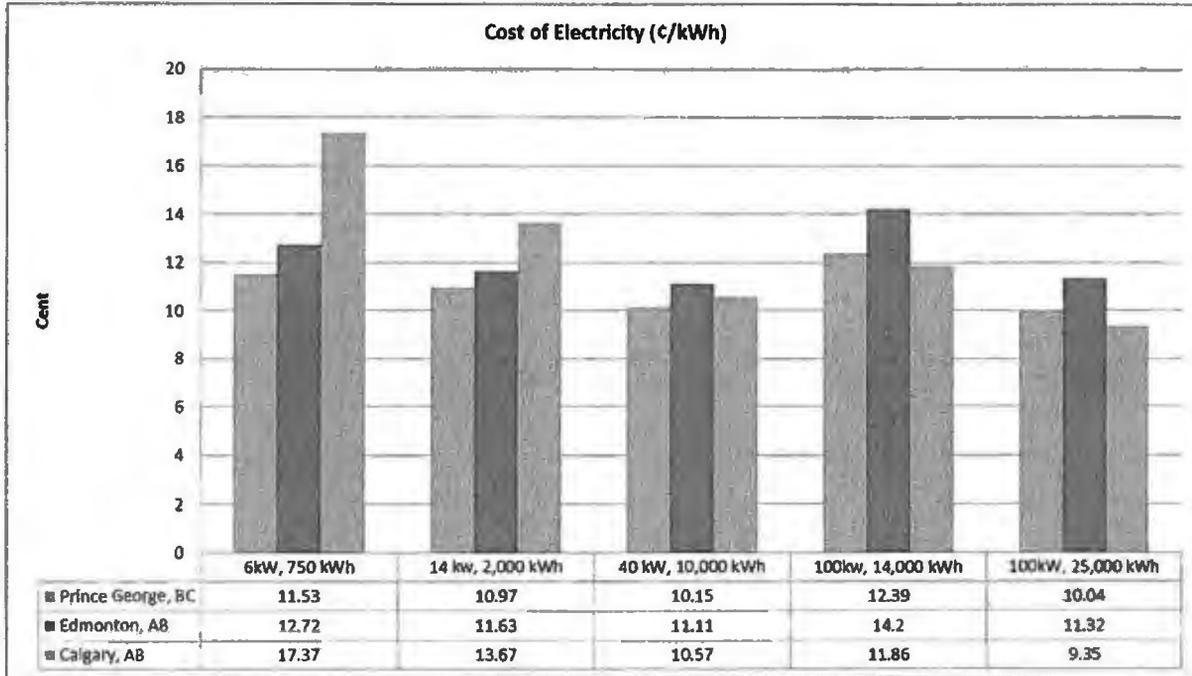
OPERATING COSTS

After cost of livestock, labour is the largest expense in a beef packing operation and is critical to success. Wage rates in the manufacturing sector in BC are, on average, 20% lower than in AB.



While wage rates in the manufacturing sector are lower in BC, this plant would likely be required to pay rates comparable to the Alberta meat plants to attract experienced skilled workers for key positions. Within the marketplace it will also likely be difficult to attract general labourers from mining, oil and gas sectors due to the disparity in wage rates. In addition, the recent changes to the Temporary Foreign Worker program will make it more difficult to operate a facility with these workers.

Utility costs for water, sewage, electricity and natural gas are major expenses. Comparable data was gathered where available. Electricity would appear to be more affordable in Prince George than Calgary or Edmonton.



Natural gas cost varies by usage amounts and is estimated to be comparable to other regions.

Natural Gas - Prince George

Rate Schedule	Basic Daily Charge	Variable Prices (per GJ)			Total (per GJ)
		Delivery	Midstream	Cost of Gas	
Small Commercial (<2000 GJ)	\$0.82	\$2.94	\$1.22	\$4.64	\$9.62
Large Commercial (<2000 GJ)	\$4.35	\$2.47	\$1.04	\$4.64	\$12.50

Water and sewage are major factors from both environmental and economic perspectives. The last federally inspected packing plant built in Canada was the Ranchers Beef facility in Balzac Alberta in 2006. It reportedly had major challenges with access to and cost of water.

Water and sewage rates are provided by the city of Prince George. Water is \$2.52 per thousand gallons and sewage is \$3.89 per thousand gallons. Based on estimated use at 500 gallons per head, water and sewage cost to process 1,000 head per week would be about \$160,000 annually and for 2,000 head per week would increase to about 320,000 which equates to \$3.21 per head.

Water and Sewage - Prince George									
Gallons per head	Head Per Week	Water Use Annually (G)	Water \$/000 G	Cost/Week \$	Sewage \$/000 G	Cost/Week \$	Total/Week \$	Annual \$	Cost/Head \$
500.00	1,000.00	500,000.00	2.52	1,260.00	0.00	1,945.00	3,205.00	160,250.00	3.21
500.00	2,000.00	1,000,000.00	2.52	2,520.00	0.00	3,890.00	6,410.00	320,500.00	3.21

Combined federal and regional tax rates at 25% are the same as in Alberta and lower than other regions.

Province	Tax Rate
Prince George, BC	25%
Alberta	25%
Saskatchewan	27%
Manitoba	27%
Ontario	26.5%
Quebec	26.9%
New Brunswick	25%
Nova Scotia	31%
Prince Edward Island	31%
Newfoundland/Labrador	29%

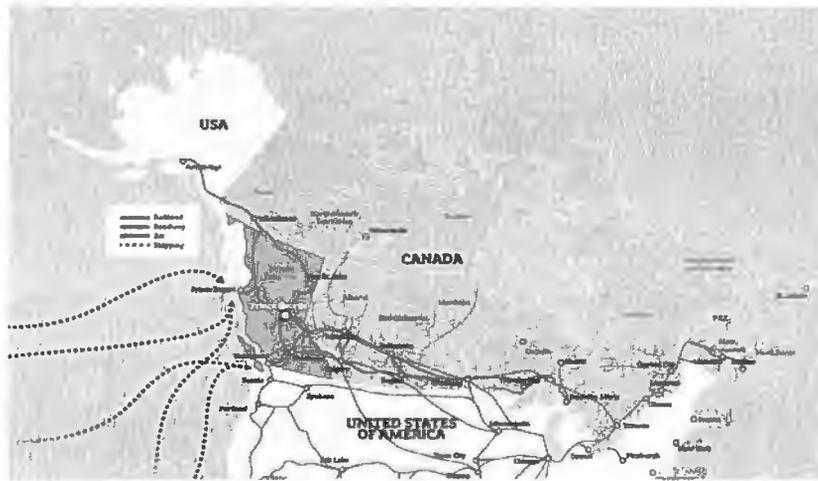
Source: CRA, KPMG.

Added Costs for Support Services:

Currently some key support services for a feedlot and packing plant are not available in Prince George and would therefore increase operating costs. There are no commercial feed mills in the area so feed supplements would need to be brought in, likely from Edmonton. Specified risk material (SRM) and dead stock disposal for cattle may not be suitable for the volume of waste generated. Options include shipping to the Clearview landfill if allowable or alternately SRM would have to be shipped to West Coast Reduction/Alberta Processing Company’s dedicated ruminant and SRM facility in Calgary. Federally inspected cold storage is not available in the area and would need to be added to the plant or the airport’s proposed warehouse.

TRANSPORTATION

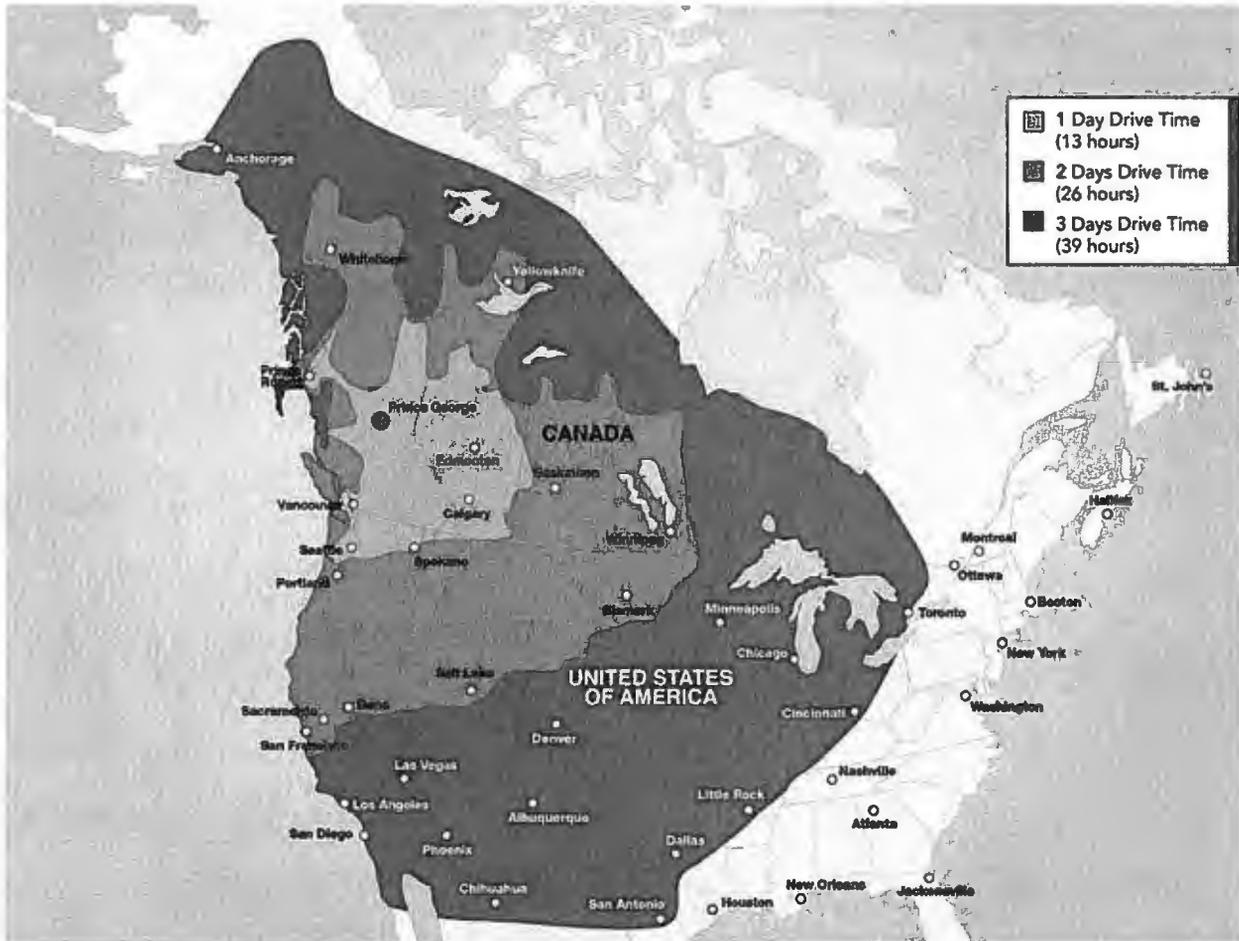
Prince George offers superior transportation connections for local businesses and residents via road, air, rail and marine infrastructure. It is located along the shortest trade route between Asia-Pacific and US heartland markets.



Highways:

Located at the intersection of Highways 16 and 97, Prince George is within one day driving time to key domestic and Pacific Northwest customers.





Port of Prince Rupert:

Prince George is strategically located along the Northwest Transportation Corridor, with road and rail access to the Port of Prince Rupert, the closest North American port to Asia. The port is up to three days closer than other West Coast ports to Asia's major port cities. This should translate into shorter delivery times and lower costs creating a competitive advantage.



The Port of Prince Rupert is the deepest natural harbor in North America offering safe and simple ocean access. The Fairview container terminal, one of North America's fastest growing intermodal terminals, delivers fast, reliable service connecting to Asian markets. The port currently handles primarily non-refrigerated containers and has only 70 electrical generation set plugs required for refrigerated containers. They have committed to expand that if sufficient demand exists.



Prince George is located in an area of significant forest product production making it a strategic location for a supply of containerized products for export to Asia via the Port of Prince Rupert. CN operates a distribution center co-located inside the CN Intermodal yard allowing for in-park movement of containers potentially reducing drayage time and handling cost for customers.

Currently the facility primarily handles non-refrigerated containers and has limited refrigeration capability with electrical generation set but have committed to add if demand is established. Repair services and emergency cold storage capabilities would also need to be added.

It is important to note the Port of Prince Rupert does not currently service any European Union destinations and is unlikely to do so due to geographic location.

Prince George Airport:

Prince George Airport (YXS) has been managed and operated by the Prince George Airport Authority (PGAA) since 2003. Since then, YXS passenger traffic has grown and airport infrastructure has improved. In 2012, YXS recorded the highest number of passengers with 418,589 passengers using the airport. The airport expanded its runway in February 2009. It now has the third longest runway in Canada, at 11,450 feet long and 150 feet wide, accommodating any sized aircraft for refueling. It is also developing a new 25,000 square foot cargo facility and common fuel storage to support trans-Pacific refueling and ground handling services for cargo, enhancing air freight capabilities of the airport.

With its geographic location on the “Great Circle” routes between Asia and the United States, together with its improved infrastructure, YXS plans to play a strategic role as a gateway to Northern BC and as an important component of Canada’s Asia-Pacific Gateway. YXS plays a strategic role in facilitating trade and transportation to Asia as a trans-Pacific technical stop for both aircraft refueling and maintenance. Currently most cargo aircraft stop in Anchorage Alaska to refuel prior to returning to Asia. YXS estimate that 60% of those jets are under capacity creating a backhaul opportunity. The cargo companies indicate that 20,000 to 30,000 kilograms of cargo would be required to make backhaul viable. YXS is currently examining the feasibility of exporting perishable goods from Northern BC, the Okanagan, and Northern Alberta to Asia via the airport. Availability of a backhaul opportunity would improve airport utilization and help establish YXS as a refueling depot and maintenance base.



Transportation Cost Advantages:

Transportation costs were compared relative to plants in southern Alberta; it is difficult to quantify a cost advantage based on information currently available.

Truck transportation from Prince George to Prince Rupert is estimated at \$.12/kg which is only \$.012/kg less expensive than Alberta to Vancouver. This is due to the lack of an established backhaul opportunity. Truck transportation from Prince George to customers in Vancouver and the Pacific Northwest is the same as from Alberta, again, because of the lack of an established backhaul opportunity.

Rail transportation to Prince Rupert and other port destinations like Montreal for access to the European Union could provide a cost advantage. CN staff and management were consulted extensively to assess this but they were not able to provide costs at this time. It is also important to note that transit times would be a key factor particularly if using rail to ship fresh product to Montreal for export to the European Union.

Ocean freight costs to Asia are difficult to quantify as freight and logistics companies worked with the two main carriers, Cusco and Hanjin but were not able to get quotations out of the Port of Prince Rupert at this time. This is complicated by the fact that currently very few refrigerated containers are returned from Asia to the Port of Prince Rupert. All ocean freight quotations had to be generated based on shipping empty refrigerated containers from Vancouver to Prince George and returning to the Port of Vancouver for export to Asia. The cost to truck a refrigerated container from Vancouver to Prince George returning to Vancouver for delivery to Shanghai China is estimate at \$.25/kg, the same cost as from Alberta.

Ocean freight costs to Europe are also difficult to quantify. As the Port of Prince Rupert does not currently service the European Union, all quotations need to be via either Vancouver or Montreal. Ocean freight from Prince George via Vancouver to Europe is available and is estimated at \$.31/kg but is projected to require 51 days by water which would be acceptable for frozen beef but not for fresh product. Currently the best available option is trucking an empty container from Calgary to Prince George, back to Calgary then to Montreal for export to Europe. This cost is estimated at \$.46/kg and is projected to require 17 days by water which is acceptable for fresh beef.

Air freight costs were also difficult to quantify. Air freight to Asia and Europe for fresh or frozen meat is typically cost prohibitive. Costs from Alberta to Asia are currently estimated in the \$2.00 to \$2.40/kg range and vary based on availability. Due the prohibitively high cost, air freight to Asia is typically used on an urgent basis. The most common use is to make up product that was shorted when loading an ocean container. Air freight is commonly used for regular deliveries of fresh beef to the Middle East. Cost is estimated at \$3.00/kg. As none of the carriers currently make scheduled stops in Prince George, we were not able to secure any air freight quotes to Asia from Prince George. One industry expert estimated it would be about \$1.40 to \$2.00/kg on a back haul with 20,000 to 30,000 kilograms to be required.

If a plant is to be considered, further work should be done with transportation and logistics companies including CN, Cosco and Hanjin to more accurately estimate cost options and quantify any potential advantages to both Asia and Europe. Similar work should also be done with trucking and air cargo companies to assess the advantages of back haul opportunities.

MARKET ANALYSIS

As an export dependent beef and cattle producer, Canada has the opportunity to capitalize on increasing global demand for high quality beef. The industry has recently seen enhanced market access conditions (Japan expanded market access for Canada to bone-in and boneless beef from cattle under-30-months of age on February 1, 2013) as well as the signing of trade agreements including the Canada–EU Comprehensive Economic Trade Agreement (CETA), the Canada-Korea Free Trade Agreement (CKFTA) and the potential of the Trans Pacific Partnership (TPP). Combined with the increasing demand for high quality beef in China and niche opportunities in North American specialty markets, these conditions present exciting opportunities for the BC beef cattle industry.

Although 2013 saw a number of positive developments for beef market access, international trade impediments in the form of non-tariff trade barriers (targeting production practices, particularly growth promoting products) are increasing. Considering the market requirements, opportunities do exist in markets where product with growth promotants are banned such as China and the European Union.

Moving forward, Asian demand will remain strong as these economies grow and personal wealth increases, driving the demand for high quality beef. Consumers looking for high quality beef prefer the taste of grain fed beef over grass fed beef, especially when compared to the Indian Buffalo and dairy based cattle that currently dominate China imports.

As a producer of primarily grain fed beef, the BC cattle industry offers a unique value proposition over many of the world's largest exporting nations which produce mainly grass finished beef. The BC beef industry will benefit from maximizing exports.

TARGET MARKETS

The success of the proposed plant depends upon targeting regional retail and food service customers within BC and the Pacific Northwest (PNW) and untapped global demand in Europe, Asia and the Middle East. This will avoid competing for local niche markets the provincial plants supply and the key customers supplied by larger, more efficient plants

The combination of domestic, US, European, Middle Eastern and Asian markets would optimize carcass cut-out values and minimize market risk.



MARKET POSITIONING

Product would need to be clearly differentiated from commodity beef. The plant would specialize in producing beef from cattle raised without antibiotics or added hormones. Consumer research in BC and the Pacific Northwest show strong consumer preference and willingness to pay for these specific attributes in addition to a preference for product of BC origin.

Product would be positioned as *BC Natural Beef* domestically and internationally. *BC Natural Beef* would be positioned globally as “raised in the clean pristine environment of beautiful British Columbia.” This capitalizes on the image developed in the popular BC Tourism campaign and leverages images from global media coverage of the Vancouver 2010 Olympics.



SUPPLY CHAIN ALIGNMENT

The BC Cattlemen’s Association has already developed a *BC Natural Beef* program with production protocols to raise product without antibiotics or added hormones and with verified BC origin. A significant portion of BC cattle are already being raised without hormonal implants and with limited use of antibiotics but these animals are not sufficiently differentiated to capture premiums from the marketplace.

BCCA has a supply chain alignment agreement with an existing processor, distributor and a leading retailer to market this product in Western Canada beginning in 2015. They also have strong demand from the food service sector and are exploring an opportunity with a large distributor to service the hotel and restaurant sector with *BC Natural Beef*.

BC Natural Beef is designed to meet the import requirements of the European Union and China for hormone and ractopamine free requirements respectively.

POTENTIAL BC COMPETITIVE ADVANTAGES

The key to maintaining herd health without the use of antibiotics is the management of bovine respiratory disease (BRD). An innovative Vancouver based biotech firm, Bovivor Pharmatech Inc. have pioneered and patented a technology to achieve this without antibiotics. Use of Bovinex effectively treats BRD and allows for the resulting beef product to be marketed as raised without antibiotics. It will transform the livestock sector by addressing growing concerns about antimicrobial resistance. BC Agriculture can have a leadership role on the global stage with an innovative approach to reducing antimicrobial resistance and improved global food security.

We are also exploring the use of biochar which is produced from biomass generated in the lumber, pulp and paper industry. Biochar is believed to improve feed efficiency in cattle by 20-25 percent. This is extremely significant in feeding sector that measures feed efficiency in cents per pound of gain. Biochar is also an approved feed additive and believed to allow “natural” claims in key international markets. Northern BC is the largest production region in Canada for biochar. Reports indicate it is underutilized and that the lumber sector would benefit from local demand as it is cost prohibitive to ship long distances.

FINANCIAL ANALYSIS

An extensive financial analysis was undertaken. Cattle price premiums were calculated and the net contribution to the producer in BC north/east is estimated to increase to \$179/head when price premiums and cost advantages of local plant are realized. Much of the benefit of a new plant is accrued directly back to the producer.

Carcass cutout values were established using actual market pricing for conventional beef and estimated pricing for beef raised without antibiotics and added hormones. The analysis was intended to include verification of estimated prices in the European Union and Asia with distributors and customers with funding assistance from Canada Beef Inc. This key step could not be concluded due to a change in program funding at Canada Beef Inc. Export price verification should be completed as part of further developing the business case for a new plant.

Sales revenue for beef and by product sales in year 1 (2018) are estimated at \$160M rising to \$256M in year 3 (2020). Operating budgets were developed with estimated kill, cut and administration costs. Financing costs were calculated with debt service coverage ratios and capitalization rates.

While projected net operating income was positive, significant capital and operating expenses are required for a very low margin business. Capitalization rates on plant assets were favourable. Overall rates of return in terms of operating margins are low. This may make it challenging to secure venture capital.

ENVIRONMENTAL AND SUSTAINABILITY BENEFITS

There are a number of environmental and sustainability benefits to be gained from the construction and operation of this plant.

- 1) The transportation and logistical advantages of feeding and processing cattle in the region will reduce the carbon footprint and improve sustainability.
- 2) The use of biochar utilizes biomass and potentially improves feed efficiency; biochar is reputed to reduce greenhouse gas emission by reducing methane output in cattle. It may generate carbon tax credits.
- 3) If a bio fuel facility is viable as part of the plant, it will render animal fat and waste into biofuel. This can potentially be blended into biodiesel at a local refinery or efficiently shipped by rail to North American markets.
- 4) If local waste disposal options are developed for SRM and dead stock, they could be utilized by other livestock or industry sectors. This could include airport authority use for international aircraft waste.

ECONOMIC AND SOCIAL BENEFITS

There are a number of economic and social benefits to be gained by the operation of this plant.

- 1) Increased cattle and grain demand resulting in potentially higher prices which would enhance profitability and sustainability of those industries.
- 2) Net contribution to cattle producers in BC north/east is estimated to increase to \$179/head when price premiums and cost advantages of local plant are realized.
- 3) Beef and by-product sales in year 1 (2018) are estimated at \$160 M rising to \$256M in year 3 (2020).
- 4) The plant would contribute significantly to BC Agriculture's goal to increase agricultural receipts from \$10B to \$14B.
- 5) Value added exports would increase by \$100M in year 1 and projected to increase to \$180M in year 3.
- 6) The region would benefit directly from 100 full time equivalent jobs in 2018 increasing to 180 in 2020 within the plant. Packing plants can have significant economic spin-offs and we estimate 620 jobs being created within the region by 2020.

- 7) The region and provincial economy would benefit from increased economic diversification.
- 8) The plant would leverage existing transportation infrastructure. It could also help establish YXS as a refueling centre and maintenance base for international aircraft.
- 9) Other fresh commodities could also benefit from the back haul opportunity created such as seafood, fresh fruit, etc.

REGION SUPPORT AND INCENTIVES

BC Ministry of Agriculture

The provincial government department responsible for the growth and sustainability of the agriculture and food sector of British Columbia is the Ministry of Agriculture. The ministry works with regional governments to increase the efficient use of agricultural land, supports the expansion of export markets, strengthens the domestic agri-food markets and ensures that agricultural products meet health standards to mitigate the risk of diseases and pests. In addition, the ministry offers programs seeking to ensure the stability of farm incomes, provides funding to increase innovation and competitiveness and promotes environmentally sustainable systems and production practices.

The BC Ministry of Agriculture has an important role in relating the province's agri-food strategy to Northern BC and connecting the strategy with the YXS initiative. The Ministry can provide assistance in promoting high-quality and high-value commodities produced in BC and assist local businesses in reaching out to international markets.

International Trade and Investment Attraction Division

The International Trade and Investment Attraction Division of the province's Ministry of Jobs, Tourism and Skills Training provides a wide range of services for businesses and stakeholders interested in exporting and importing products from the province. These services include providing international market intelligence and trade leads, advising on cross-cultural business practices, and organizing and supporting industry-specific trade missions. Furthermore, the division manages a website called Trade and Invest British Columbia, the official international trade and investment.

Northern Development Initiative Trust

The Northern Development Initiative Trust (NDI) is an independent non-profit organization that focuses on stimulating economic development in central and northern British Columbia. The organization supports economic growth and job creation in the region through the identification of new opportunities. Together with regional advisory committees, the Trust offers funding programs for businesses and stakeholders interested in investing in the region. Since its inception in 2005, over 860 individual investments have been made; with 222 funding initiatives approved in 2011. The funds received have contributed to a wide range of projects in central and northern BC, all with the same goal of improving the quality of life in the region.

Northern Development Initiative Trust (NDIT) offers direct incentives to businesses locating or expanding in Northern BC, including the Competitiveness Consulting Rebate, which provides a rebate to small and medium-sized companies for outsourced consulting services. NDIT also offers the Northern Industry Expansion Program, which provides supply chain financing and working capital loan guarantees to help

small and medium-sized companies in Northern BC expand their businesses. The Northern Industry Expansion Program is offered in partnership with the Business Development Bank of Canada and National Bank of Canada.

Initiatives Prince George

As the municipally owned economic development corporation of the City of Prince George, Initiatives Prince George (IPG) provides economic development services for the city. IPG has five key areas of focus: Strategic Leadership and Partnerships; Positioning and Marketing of Prince George; Business Retention and Expansion; Labor Recruitment and Retention and; Downtown Development. It has a goal to serve as a facilitator in connecting Prince George's sustainable, knowledge-based, resource economy to the world. With a mandate to facilitate the growth and diversification of the Prince George economy, IPG offers marketing programs to promote trade and investment for Prince George businesses and other stakeholders. Through its initiatives, IPG contributes to raising the standard of living for residents in the city by creating new opportunities for local existing and potential businesses, and increasing the tax base. This includes the support it lends for the development and growth of the air cargo and logistics industry in Prince George. It is well positioned to work with shippers to promote the use of the northern BC supply chain, rather than reliance on supply chains focused on the Lower Mainland, Calgary and other southern gateways.



KEY SUCCESS FACTORS

The packing industry is an extremely difficult business, even for established companies. There is no guarantee that small, start-up slaughter facilities will achieve success in an industry characterized by economies of scale. Such plants should not attempt to operate as scaled-down versions of their larger counterparts, but should exploit specialty markets where larger firms lack flexibility. Developing a branded, differentiated program will be essential in order to distinguish the new plant from large scale packers and smaller plants that no longer have the capacity to support growing programs.

Cattle Supply

Small plant success is dependent on being able to exploit niche markets and having a reliable supply of feeder cattle will be critical. The success of the proposed plant depends upon targeting regional retail and food service customers within BC and the Pacific Northwest (PNW) and untapped global demand in Europe, Asia and the Middle East. This will avoid competing for the local niche markets the provincial plants supply and the key customers supplied by larger, more efficient plants.

While they may not be competing for the same customers, all three types of plants are competing for the same source of fed cattle. A plant located in Prince George will pull cattle supplies that currently go to domestic and US plants. This requires the large domestic plants to compete more aggressively for cattle. If Country of Origin labeling is repealed or amended so slaughter confers origin, it will become increasingly difficult to compete with US plants for cattle. As well, larger plants with globally diversified operations may be able to withstand a bidding war with a new market entrant for a longer period of time.

Using a differentiated business model, viability is also dependent on a consistent supply of cattle with the required attributes. It will take commitment and support of the majority of producers in the region to be part of an aligned supply chain. Producers in the region stand to benefit significantly from a new plant. They will see higher prices and reduced costs but it will take time to demonstrate the benefits and producers may be skeptical of potential premiums. It will also take significant coordination to align the cattle supply with customer demand requirements. This will be especially difficult in the first few years of operation as the plant gets established and there may only be a limited number of calves available that meet the program requirements.

Plant Operations

Plant operations for a start-up can be extremely challenging. Highly skilled and experienced senior managers are required—learning “as you go” with a new plant can be very expensive and directly affect viability. Sufficient skilled labor to operate efficiently is essential. Any operating cost disadvantages will need to be minimized for example, SRM removal. Plant utilization will be a critical success factor as it needs to operate as closely as possible to target volumes. The sales department will need to establish customers quickly, command high enough premiums and balance carcass utilization. Quality control will be key to maintaining premiums. Food safety risk and the potential for recalls must be managed very carefully. Transportation and logistics advantages must also be realized.

External Market Factors

Moving forward, commercially viable market access will be essential. This includes the successful negotiation of the details of the CETA agreement to ensure it is commercially viable. Access to China must be reliable and not subject to political instability or artificial trade barriers. Potential for market closure is also a risk, as happened to countries exporting to Russia in 2014. Canada must maintain equivalent access

and tariff rates to key competitors like the US and Australia. Country of origin labeling must also be resolved with a favorable outcome.

If new market entrants or established plants choose to enter the natural or antibiotic and no added hormones market segment, it will increase competition for both cattle and customers and challenge the ability to maintain price premiums.

Key Success Factors

- 1) Producer commitment and their support to be part of an aligned supply chain.
- 2) Consistent supply of cattle with required attributes.
- 3) Ability to match cattle supply and customer demand.
- 4) Skill and experience of senior management team.
- 5) Availability of skilled labor.
- 6) Any operating cost disadvantage needs to be minimized.
- 7) Plant utilization needs to operate at target volumes.
- 8) Sales will need to establish customers quickly, at high enough premiums and balance utilization.
- 9) Quality control and food safety risk including potential for recalls must be carefully managed.
- 10) Transportation and logistics advantages must be realized.
- 11) Commercially viable market access.
- 12) Competition in market segment and ability to maintain premiums.



CONCLUSION

A small plant with a differentiated marketed strategy is viable. While viable, it is a high risk venture with significant capital and operating expenses for a very low margin business. Operational excellence, prudent risk management and favourable external factors are required to be profitable.

Based on the information in this study, projected net operating income was positive, capitalization rates on plant assets were favourable, however overall rates of return in terms of operating margins are low.

RECOMMENDATIONS

As much of the benefit is accrued directly back to the producer, an integrated structure with producer ownership should be considered to align the supply chain and share risk and reward. Producer ownership in the plant would help build commitment and support within the region to establish a consistent supply of cattle with the required attributes. This will also likely improve initial cattle supplies and help match supplies to customer requirements moving forward. There would also be a shared economic incentive to drive operating costs out of the supply chain to optimize profitability for both the packer and producer.

A commercial partner with experience in the meat packing industry should be considered to mitigate operational risk. They would provide a skilled and experienced management team with established operating systems including food safety and quality control programs. They should also have recruitment and training programs to meet skilled labour requirements at key positions. Potentially they would have established customers and advanced market knowledge of the target markets. They would also potentially have established international distribution and additional logistics insight. They could currently have beef, pork or seafood product lines that would complement each other and create synergy in the marketplace.

A commercial partner with a network of small plants would also provide economies of scale. Senior management salaries could be spread across multiple plants. Supply and service requirements could be consolidated where possible and contracted to lower costs. For major ongoing supply expenses like vacuum bags and boxes, this can result in significant savings on a per head basis. The ability to consolidate product from multiple plants to assemble more timely loads will better meet customer requirements, reduce cold storage cost and optimize transportation advantages.

This combination of risk mitigation and improved net operating income would improve viability and make it more attractive to secure investment capital.

For next steps, the business case should be further developed. It would include verifying pricing premium potential in export markets and quantifying transportation advantages as recommended. Producer benefits would also be further quantified. Once the business case is complete, a business plan should be developed. It would identify preferred ownership and partnership options including direct producer investment from within the region. Cattle contracting would be explored to secure supply of cattle with the required attributes. Key operating and marketing strategies would be developed as well.

A commercialization strategy should be developed that includes identifying potential commercial partners. This would include existing North American beef and pork plant operators and international operators looking to establish a high quality supply from North America. Partners would be evaluated, targeted and engaged in discussion about establishing a commercial venture. Commercial financing barriers would be further assessed and addressed.

With significant benefits to the regional and provincial economies including economic diversification, BC Ministry of Agriculture, International Trade and Investment Attraction Division, Northern Development Initiative Trust and Initiatives Prince George should be approached for technical support and funding assistance to enable further development of the business case, development of the business plan and commercialization strategy.

Key Recommendations

1. An integrated structure with producer ownership should be considered to align the supply chain and share risk and reward.
2. A commercial partner with experience in the meat packing industry should be considered to mitigate operational risk and provide economies of scale.
3. The business case should be further developed including verifying price premiums, transportation advantages and quantifying producer benefits.
4. A business plan should be developed that identifies ownership and partnership options including direct producer investment from within the region and cattle contracting options.
5. A commercialization strategy should be developed that identifies, evaluates, targets and engages potential partners to establish a commercial venture.
6. Regional technical support and funding assistance should be considered to enable further development of the business case, development of the business plan and commercialization strategy.



BIBLIOGRAPHY

Alberta Agriculture reports Pot liners (50-65,000 lbs) at \$4.75-5.25/loaded mile (~\$3.10/loaded km) for transport >450 kms in 2013 [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/inf14268](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/inf14268)

Canfax Annual Demographics Survey <http://www.canfax.ca/CattleOnFeed/CattleOnFeed.aspx>

Clement E. Ward and Jonathan T. Hornung. 2005. Price Effects from an Anticipated Meatpacking Plant Opening and Unexpected plant closing. *Journal of Agricultural and Resource Economics* 30(3): 469-47

CRS Cow-Calf Special Edition Fact Sheet: Focus on Productivity. April 2013. <http://www.canfax.ca/Samples/Focus%20on%20Productivity%20April%202013.pdf>

David Anderson, William Kerr, Guillermo Sanchez and Rene Ochoa. Cattle/Beef Subsector's Structure and Competition under Free Trade.

Jack C. Stabler, William J. Brown, M. Rose Olfert. September 1993. Socio-Economic Impacts of the Poundmaker Feedlot-Ethanol Complex. Policy Branch, Agriculture Canada. Technical Report 4/93.

James Rude and Jared Carlberg. 2006. Kill or Shill: Processing Capacity and Cattle Prices with a Closed Boarder. *Current Agriculture, Food and Resource Issues: A Journal of the Canadian Agricultural Economics Society*. Number 7:p.85-93. www.CAFRI.org

Jeffrey Church and Daniel Gordon. August 2012. Market Power and the Western Canadian Red Meat Packing Industry. Phase I: Market Power Update, Mad Cows, Mergers and COOL.

Marvin R. Duncan, Richard D. Taylor, David M. Saxowsky, Won W. Koo. March 1997. Economic Feasibility of the Cattle Feeding Industry in the Northern Plains and Western Lakes States. North Dakota State University. *Agricultural Economics Report No. 370*.

Michael Broadway. Meatpacking, Refugees and the Transformation of Brooks, Alberta.

Marvin R. Duncan, Richard D. Taylor, David M. Saxowsky, Won W. Koo. March 1997. Economic Feasibility of the Cattle Feeding Industry in the Northern Plains and Western Lakes States. North Dakota State University. *Agricultural Economics Report No. 370*.

Manitoba Agriculture, Guidelines for Estimating Barley & Corn Silage Production Costs-2014. http://www.gov.mb.ca/agriculture/business-and-economics/financial-management/pubs/cop_forage_cerealsilage.pdf

Suren Kulshreshtha, Oteng Mondongo, and Allan Florizone. October 2012. Economic Impacts of Livestock Production in Canada – A Regional Multiplier Analysis.

Ted C. Schroder, Clement E. Ward, and Lee Schulz. December 2009. Determinants of the Canadian-US Basis for Cash Fed Cattle and Impacts from Government Regulations.

Cattle images courtesy of Canada Beef Inc.



BC Farmland Lease Workbook

Assisting landowners and land seekers in preparing a farm land lease agreement

Introduction

Access to farmland is often one of the most prohibitive barriers for a new farmer. Purchasing farmland represents a long-term commitment – much longer than three to five years it can take to get a farm business up and running. Often, even if a new farmer is willing to invest in real estate, they will find themselves priced out of the real estate market. Farmland real estate prices across British Columbia are rising due to competing residential, recreational and other commercial values, outpricing the value of agriculture uses.

A lease agreement is an alternative method farmers can use to access farmland and reduce the strain of real estate investment on a new farm start up. Lease agreements are also beneficial to landowners who wish to see their land in active agricultural production, and may not be ready to sell. Many landowners will enter into lease agreements with new farmers so that their land can be actively farmed while they pursue other activities, such as retirement, other careers, and extended leave. Lease agreements are also a helpful tool for landowners to vet potential buyers for their ability to viably maintain the farmland for agricultural use into the future, prior to transferring ownership.

Lease agreements are the most formal type of land access agreements, giving exclusive possession and usage of a property, or portion of property, to a tenant in exchange for rent. Lease agreements can be registered on title, giving tenants greater legal recognition and security. There are many clauses in a lease agreement that will define the responsibilities of a landowner and tenants. A lot of thought and conversation is required to create a lease agreement specific to each landlord and tenant relationship.

This toolkit is designed to facilitate a preliminary discussion between a farmland seeker and farmland owners. It is not a legal document, but it is designed to prepare both parties to enter into a legal agreement. By working through the questions in this workbook, you will have a better understanding of your own demands, expectations and limitations. By completing this workbook, you will also save time for a legal expert or third party advisor who may be assisting you, which saves valuable dollars on legal and consulting fees.

To begin this process, please download and print this workbook and follow the steps below:

Step 1:

Fill out your section of the workbook, either as a land seeker or land owner, to the best of your abilities. You may not be able to answer all of the questions, but do the best you can. Not all questions will be relevant to all situations. Farmland seekers should prepare a business plan for their farming ventures prior to entering into lease negotiations. Farmland owners should understand the market values of leaseholds in their area.

Step 2:

Arrange to meet with the other party, the land owner or land seeker, and review your answers to the questions in the workbook together. Compare results and determine where expectations match and where they differ. Begin discussions on issues that may need to be negotiated or further explored.

Step 3:

Bring your workbooks to a lawyer for further advice and begin drafting a legal agreement. A completed workbook from both parties will assist a lawyer in drafting a good lease agreement and will save both parties on costly legal fees by being well prepared.

Tips for Getting to an Agreement

1. **Be knowledgeable and competitive.** Always approach potential land seekers or land owners in a professional manner. Know your potential for profit and loss. Be ready to provide references and resumes to demonstrate past experience. If there are friendships or family linkages between a land owner and land seeker, remember that a lease agreement is, above all, a business relationship.
2. **Be proactive.** If you do not yet have a potential land partner in mind, prepare your half of the workbook to the best of your ability and use the results to create an advertisement for your opportunity. Be sure to post this advertisement broadly through classified sites, land linking sites and your local farming networks. You may even want to advertise nationally to draw on the largest possible pool of qualified land partners.
3. **All agreements will require negotiations.** Expect to have several meetings with potential land partners before anything close to an agreement is reached. Setting an agenda for each meeting can help keep the process on track and ensure your expectations are met. Prior to entering negotiations, understand what your own priorities are: what items are absolute necessities and what items can be negotiated?
4. **Rely on professionals.** Not everyone has all the answers. Avoid relying on bad advice that could have costly implications down the road. Accountants, lawyers, and agricultural specialists can help determine the best financial, legal and agricultural practices for your situation.
5. **Don't be afraid to walk away.** Not all negotiations will end in an agreement. Stand by your priorities and never sign an agreement that you are uncomfortable with. Depending on the market, there may other land partners you can work with.

Further References:

- Guide for Agriculture Lease Agreements in British Columbia. 2014 Edition. BC Ministry of Agriculture: http://www.agf.gov.bc.ca/busmgmt/bus_arrange/lease_pdf/Lease_Guide_10-2014.pdf
- Land Access Guide. Edition 2.0. Young Agrarians: <http://youngagrarians.org/young-agrarians-bc-land-access-guide-lease-license-templates/>
- Linking Land and Farmers: <http://llaf.ca/>
- New Farm Start Up Guide. BC Ministry of Agriculture: <http://www.agf.gov.bc.ca/regional/NewFarm/NewFarm.htm>

Acknowledgements

Parts of this workbook were adapted from FarmStart & Everdale Environmental Learning Centre's Accessing Land for Farming in Ontario: a guidebook for farm seekers and farmland owners.

For Land Seekers

Section 1: Basic Information

Name:				
Mailing address:				
Phone number:				
Email:				
Are you a Canadian citizen or permanent resident?			Yes	No
Business Name:				
Business structure:	sole proprietorship	partnership	corporation	not yet registered
Is your farm business:		new business	existing business	
If this is an existing business, how many years has it been operation?:				
If this is an existing business, What were last year's gross sales?:				

Section 2: The Land

Do you require access to a well or waterline?	Yes	No	Unsure			
Do you require potable water?	Yes	No	Unsure			
Do you require documentation of past activities that took place in the leasehold?	Yes	No	Unsure			
Do you require records of pesticide, fertilizer, or chemical applications on the leasehold?	Yes	No	Unsure			
Do you require documentation of waste disposal, septic fields, sewage lagoons and contaminated sites on the leasehold?	Yes	No	Unsure			
Do you require the land to hold current organic certification?	Yes	No	Unsure			
Do you require the land hold any other current certifications?	Yes	No	Unsure			
Do you require soil samples from the leasehold?	Yes	No	Unsure			
Do you cell phone reception on the leasehold?	Yes	No	Unsure			
Do you require the following utility connections:						
Sewer lines	Yes	No	Unsure			
Natural gas lines	Yes	No	Unsure			
Electrical lines	Yes	No	Unsure			
Curbside waste pickup	Yes	No	Unsure			
Phone lines	Yes	No	Unsure			
High speed internet lines	Yes	No	Unsure			
Do you require fencing in the leasehold?	Yes	No	Unsure			
What type of fencing?						
Wood	Barbed wire	High-tensile wire	Woven wire	Electric	Other	Unsure
Describe the size and function of the areas that will need to be fenced:						
Do you require any security systems on the leasehold? If so, describe:						

Section 3: Farm Activities

What types of activities will you be conducting on the leasehold?:			
Animal Boarding	Yes	No	Unsure
Apiculture	Yes	No	Unsure
Aquaculture	Yes	No	Unsure
Accommodations	Yes	No	Unsure
Agritourism	Yes	No	Unsure
Biosolids application	Yes	No	Unsure
Chemical fertilizer application	Yes	No	Unsure
Christmas trees	Yes	No	Unsure
Dairy	Yes	No	Unsure
Fairs and Festivals	Yes	No	Unsure
Floriculture	Yes	No	Unsure
Food Processing	Yes	No	Unsure
Food Service	Yes	No	Unsure
Forest seedlings	Yes	No	Unsure
Forage production	Yes	No	Unsure
Fuel Storage	Yes	No	Unsure
Fruit, vegetable and herb production	Yes	No	Unsure
Grain production	Yes	No	Unsure
Greenhouse production	Yes	No	Unsure
Livestock raising – extensive	Yes	No	Unsure
Livestock raising – intensive	Yes	No	Unsure
Marijuana production (legal)	Yes	No	Unsure
Pesticide application	Yes	No	Unsure
Turf production	Yes	No	Unsure
Wild harvesting (describe):	Yes	No	Unsure
Other (describe):			
Other (describe):			
Other (describe):			
Do you require the ability to remove trees in the leasehold?			
Yes	No	Only in emergency circumstances	
Who should be responsible for management or removal of manure from the leasehold?			
Tenant	Landlord	Shared	
Who should be responsible for the management or removal of waste from the leasehold?			
Tenant	Landlord	Shared	
Do you require the ability to spread manure, fertilizers, pesticides, or other chemicals on the leasehold?	Yes	No	Unsure
Do you require notice for the landlord to apply manure, fertilizers, pesticides, or other chemicals on or adjacent to the leasehold?	Yes	No	Unsure
Do you require the ability to erect signage on the leasehold?	Yes	No	Unsure
Do you require the ability to pursue organic certification?	Yes	No	Unsure
Are there general production practices or stewardship standards you intend to follow?			

Please describe:

Section 4: Access

Are there buildings or equipment that you require access to? Please describe:

Are there time periods your access to the leasehold absolutely cannot be restricted? Please describe:

Are there time periods during which you would like to be able to restrict access to the leasehold by others? Please describe:

Under what circumstances can normal access to the leasehold be restricted? How much notice is required?

How much notice to you require for landlord to enter the site and inspect the land and premises?

What do you consider a reasonable frequency of landlord inspection of the leasehold?

Daily	Weekly	Monthly	Quarterly	Annually
-------	--------	---------	-----------	----------

Aside from yourself, who else might access the leasehold?

	Yes	No	Unsure
Friends & family	Yes	No	Unsure
Contractors and service providers	Yes	No	Unsure
Volunteers	Yes	No	Unsure
Interns and employees	Yes	No	Unsure
Customers	Yes	No	Unsure
General visitors	Yes	No	Unsure
Paying guests (B&B rentals, tour groups, etc)	Yes	No	Unsure

Section 5: Accommodations

Do you require housing on the leasehold?	Yes	No	Unsure
Do you require the ability to use a trailer or tent as temporary accommodations on the leasehold?	Yes	No	Unsure
In the absence of existing washroom facilities on the site, how do you propose to establish washroom facilities?			
Do you require parking space for vehicles in addition to your own personal vehicle? Please describe:			

Section 6: Time Frame

How long should the term of the lease be?:			
At the end of the lease, should the agreement:			
Automatically renew if no complaints brought forward by either party	Yes	No	Unsure
Provide an option for renewal	Yes	No	Unsure
Provide an option for purchase	Yes	No	Unsure
How could the lease be terminated prior to its expiry date?			
Breach of contract	Yes	No	Unsure
Sale of land	Yes	No	Unsure
Notice with compensation	Yes	No	Unsure
Notice without compensation	Yes	No	Unsure
Extenuating circumstances, such as:			
Do you require the lease to be registered on title to ensure the agreement survives the sale of the land to a new owner?	Yes	No	Unsure

Section 7: Financial

What form of payment for the lease is expected?			
Cash	Crop share	Labour	Other:
When will be payment be made and at what intervals?:			
Who is responsible for payment of:			
Property taxes	Landlord	Tenant	Shared
Fees and licensing	Landlord	Tenant	Shared
Utilities	Landlord	Tenant	Shared
Capital improvements	Landlord	Tenant	Shared
Legal fees associated with the lease agreement	Landlord	Tenant	Shared
If Farm Status under BC assessment is earned or maintained by your activities on the leasehold, do you expect to receive financial compensation?	Yes	No	Unsure
Are you willing to purchase general liability insurance for the business and list the landlord as third party insured?	Yes	No	Unsure

Section 8: Other

Do you require mentoring support from the landlord?	Yes	No	Unsure
Do you require labour or other services from the landlord? Please describe:			
What compensation are you willing to provide for the landlord's labour and other contributed services?			
Is there anything else you would like a potential landlord to be aware of that has not been covered in this workbook?			

For Landowners

Section 1: Basic Information

Name:		
Mailing address:		
Phone number:		
Email:		
Are you a Canadian citizen or permanent resident?	Yes	No
Are you married?	Yes	No
Are there additional owners listed on title for the property	Yes	No

Section 2: The Land

Legal description of the property:							
Do you have aerial photos or maps of the property?	Yes	No	Attached				
Does the intended leasehold an entire property or a portion of a property?	Portion		Entire				
If the intended leasehold covers a portion of the property, could you attach a sketch or map of the area?	Yes	No	Attached				
Size of the intended leasehold:							
Zoning of the intended leasehold:							
Does the intended leasehold fall within the boundaries of the Agricultural Land Reserve?	Yes	No	Partially				
Does the intended leasehold fall within the boundaries of any of restricted areas or special management zones?	Yes	No	Partially				
If so, please describe:							
How many hectares/acres of the intended leasehold are in production?:							
Describe the current production:							
How many acres of the intended leasehold are forested?:							
What is the fenced area of the intended leasehold?:							
What type of fencing?							
Wood	Barbed Wire	High-tensile wire	Woven wire	Electric	Other		
What is the state of the fencing?							
Poor		Fair		Good		Excellent	
Does the leasehold have access to a well or waterline?			Well	Waterline	None		
Does the well or waterline provide potable water?			Yes	No	Unsure		
Can you provide recent water testing results?			Yes	No	Attached		
Do you have any knowledge of historical activities that took place in the leasehold?			Yes	No	Attached		

Is the leasehold fallow? If so, for how long?	Yes	No	Duration:
Do you have records of pesticide, fertilizer, or chemical applications on the leasehold?	Yes	No	Attached
Are there any active or closed waste disposal, septic fields, sewage lagoons and contaminated sites on the leasehold? If so, please attach a map	Yes	No	Attached
Does the land hold any current organic certification?	Yes	No	Attached
Does the land hold any other current certifications?	Yes	No	Attached
Are the results of soil sample testing from the leasehold available?	Yes	No	Attached
What proportion of the property has of south facing exposure?:			
Describe the topography of the leasehold:			
Describe the routes of access to the leasehold:			
Describe any security measures that have been taken to protect the leasehold from trespassing, theft or natural disasters:			
Describe the extent of any noxious weed presence in the leasehold:			
Describe the extent of seasonal flooding issues in the leasehold:			
Does the leasehold have cell phone reception?	Yes	No	
Does the leasehold have the follow utility connections available:			
Sewer lines	Yes	No	
Natural gas lines	Yes	No	
Electrical lines	Yes	No	
Curbside waste pickup	Yes	No	
Phone lines	Yes	No	
High speed internet lines	Yes	No	
Will the tenant be sharing the use of these utilities with any other user?	Yes	No	

Section 3: Farm Activities

What types of activities will you be permitted on the leasehold?:			
Animal Boarding	Yes	No	Unsure
Apiculture	Yes	No	Unsure
Aquaculture	Yes	No	Unsure
Accommodations	Yes	No	Unsure
Agritourism	Yes	No	Unsure
Biosolids application	Yes	No	Unsure
Chemical fertilizer application	Yes	No	Unsure

Christmas trees	Yes	No	Unsure
Dairy	Yes	No	Unsure
Fairs and Festivals	Yes	No	Unsure
Floriculture	Yes	No	Unsure
Food Processing	Yes	No	Unsure
Food Service	Yes	No	Unsure
Forest seedlings	Yes	No	Unsure
Forage production	Yes	No	Unsure
Fuel Storage	Yes	No	Unsure
Fruit, vegetable and herb production	Yes	No	Unsure
Grain production	Yes	No	Unsure
Greenhouse production	Yes	No	Unsure
Livestock raising – extensive	Yes	No	Unsure
Livestock raising – intensive	Yes	No	Unsure
Marijuana production (legal)	Yes	No	Unsure
Pesticide application	Yes	No	Unsure
Turf production	Yes	No	Unsure
Wild harvesting (describe):	Yes	No	Unsure
Are there any other activities that would not be acceptable in the lease? Please describe?			
Will the tenant require permission to remove trees in the leasehold?			
Yes	No	Except in emergency circumstances	
Who should be responsible for management or removal of manure from the leasehold?			
Tenant	Landlord	Shared	
Who should be responsible for the management or removal of waste from the leasehold?			
Tenant	Landlord	Shared	
Do you require the ability to spread manure, fertilizers, pesticides, or other chemicals on the leasehold or adjacent lands?	Yes	No	Unsure
Do you require notice for the tenant to apply manure, fertilizers, pesticides, or other chemicals to the leasehold?	Yes	No	Unsure
Is the tenant permitted to erect signage on the leasehold?	Yes	No	Unsure
Is there an opportunity for the tenant to pursue organic certification?	Yes	No	Unsure
Are there general production practices or stewardship standards the tenant must follow? Please describe:			

Section 4: Access

Are there buildings or equipment that the tenant will have exclusive access to? Please describe:				
Are there buildings or equipment that the tenant will have shared access to? Please describe:				
Are there areas of the leasehold that will be off limit to the tenant? Please describe:				
Are there time periods your access to the leasehold absolutely cannot be restricted? Please describe:				
Are there time periods during which you would like to be able to restrict access to the leasehold by the tenant and others? Please describe:				
Under what circumstances can normal access to the leasehold be restricted? How much notice is required?				
How much notice are you willing to provide prior to entering the leasehold to inspect the land and premises?				
What do you consider a reasonable frequency of landlord inspection of the leasehold?				
Daily	Weekly	Monthly	Quarterly	Annually
Aside from the tenant, who may access the leasehold?				
Friends & family	Yes	No	Unsure	
Contractors and services providers	Yes	No	Unsure	
Volunteers	Yes	No	Unsure	
Interns and employees	Yes	No	Unsure	
Customers	Yes	No	Unsure	
General visitors	Yes	No	Unsure	
Paying guests (B&B rentals, tour groups, etc)	Yes	No	Unsure	

Section 5: Accommodations

Is there housing available to the tenant on the leasehold?	Yes	No	Unsure
Can the tenant use an RV, trailer or tent as temporary accommodations on the leasehold?	Yes	No	Unsure
Are there washroom facilities that the tenant will have access to?	Yes	No	Unsure
Are there designated areas for vehicle parking?	Yes	No	Unsure

Section 6: Time Frame

How long should the term of the lease be?:			
At the end of the lease, should the agreement:			
Automatically renew if no complaints brought forward by either party	Yes	No	Unsure
Provide an option for renewal	Yes	No	Unsure
Provide an option for purchase	Yes	No	Unsure
How could the lease be terminated prior to its expiry date?			
Breach of contract	Yes	No	Unsure
Sale of land	Yes	No	Unsure
Notice with compensation	Yes	No	Unsure
Notice without compensation	Yes	No	Unsure
Extenuating circumstances, such as:			
Are you willing to register the lease on title to ensure the agreement survives the sale of the land to a new owner?	Yes	No	Unsure

Section 7: Financial

What form of payment for the lease is expected?			
Cash	Crop share	Labour	Other:
When will be payment be made and at what intervals?:			
Who is responsible for payment of:			
Property taxes	Landlord	Tenant	Shared
Fees and licensing	Landlord	Tenant	Shared
Utilities	Landlord	Tenant	Shared
Capital improvements	Landlord	Tenant	Shared
Legal fees associated with the lease agreement	Landlord	Tenant	Shared
If Farm Status under BC assessment is earned or maintained by the activities on the leasehold, will the tenant receive financial compensation?	Yes	No	Unsure
Do you require your tenant to hold general liability insurance for their business and to list you as third party insured?	Yes	No	Unsure

Section 8: Other

Will you be available to provide mentoring support to the tenant?	Yes	No	Unsure
Will you be available to provide labour or other services to the tenant? Please describe:			
What form of payment is expected for your labour and other contributed services?			
Is there anything else you would like a potential tenant to be aware of that has not been covered in this work book?			