



**P.M. ASSOCIATES LTD.**

Management, Financial, Engineering and Design Consultants

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August 11, 2005

Ms. Linda Cote  
South Temiskaming Community Futures Development Corporation  
467 Ferguson Avenue  
P.O. Box 339  
Haileybury, ON P0J 1P0

Dear Linda:

Here is a draft report of our findings to date. As you will see, the plant is marginally viable, based on the model we have developed. Other issues we need to look at include:

1. Market capture rates may be too high (90% beef and 50% pork)  
  
Concerns
  - intentions sometimes do not get translated into actions
  - not sure about potential supply – farmers on committee to comment
2. Solid waste disposal needs more work – I am going to contact Rothsay (just got the information on biodiesel)
3. Equipment list is out at Sperling for quote – might change somewhat
4. Floor plan has been reviewed with CFIA – needs some changes, might impact on cost
5. For costing, we have a larger plant out to tender – should have more prices soon
6. Would like committee's approval to review the report with Ken Horst
7. Ownership options not considered – need an experienced operator (Horst?)
8. Farmers' hook sales – In Rainy River, they are selling at \$1,000/hook (sold 105) to be used for working capital – could be a preferred share, etc.

9. Retail could be considered given the location. This could increase revenues and profits.

Please circulate to your committee so they can review in advance of the meeting. Please call me if questions.

Yours truly,

P.M. ASSOCIATES LTD.

Murray Coates  
Senior Consultant

**PRELIMINARY REPORT  
ON THE  
PROPOSED ABATTOIR  
FOR THE  
SOUTH TIMISKAMING AREA**

**PROVIDED TO THE  
STEERING COMMITTEE  
OF THE  
SOUTH TIMISKIMING C.D.C.**

**Draft  
For Discussion Only**

**August 2005**



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## 1.0 INTRODUCTION

In the spring of 2005, the South Temiskaming Community Futures Development Corporation commissioned a study to assess the potential viability of developing a regional abattoir. Step One was to conduct a market analysis. This draft report provides details in respect of the market analysis, as well as other issues pertaining to the project.

## 2.0 POTENTIAL SUPPLY OF RED MEAT ANIMALS

The Ontario Ministry of Agriculture and Food (OMAF) maintains statistics on livestock numbers in the various districts of Ontario. The following data was provided by OMAF by species:

### BEEF

NUMBER OF CATTLE IN TIMISKAMING DISTRICT									
Year	Bulls (>1 yr.)	Dairy Cows	Dairy Heifers (>1 yr.)	Beef Cows	Beef Heifers for breeding (>1 yr.)	Beef Heifers for slaughter (>1 yr.)	Steers (>1 yr.)	Calves (>1 yr.)	Total Cattle
2000	-	-	-	-	-	-	-	-	28,090
2001	450	5,700	2,900	8,300	1,600	750	1,900	8,750	30,350
2002	450	5,600	2,700	9,100	1,500	800	2,100	9,600	31,850
2003	500	5,400	2,800	10,100	1,700	900	2,300	9,600	33,300
2004	550	5,000	2,800	11,100	1,900	1,000	2,400	9,100	33,850

According to local OMAF officials, only about 1,000 calves are finished in the area. It was also indicated that livestock numbers are up. Pre-BSE, there was a promotion on to increase cow numbers in the area.

## PORK

NUMBER OF PIGS IN TIMISKAMING DISTRICT							
Year	Sows & Bred Gilts (>6 mo.)	Boars (>6 mo.)	All Other Pigs			Total	Total Pigs
			< 45 lbs	45-130 lbs	> 130 lbs		
2000	-	-	-	-	-	-	-
2001	150	-	250	1,150	1,000	2,400	2,550
2002	150	-	250	1,200	1,000	2,450	2,600
2003	100	-	250	1,100	900	2,250	2,350
2004	100	-	200	1,100	850	2,150	2,250

There is limited pork production in the area.

## SHEEP

NUMBER OF SHEEP IN TIMISKAMING DISTRICT							
Year	Rams (>1 yr.)	Ewes & Wethers (>1 yr.)	Sheep (>1 yr.)	Replacement Lambs (<1 yr.)	Market Lambs (<1 yr.)	Total Lambs (<1 yr.)	Total Sheep and Lambs
2000	-	-	-	-	-	-	-
2001	150	3,650	3,800	650	1,600	2,250	6,050
2002	150	3,500	3,650	600	1,900	2,500	6,150
2003	150	3,900	4,050	700	2,100	2,800	6,850
2004	150	4,100	4,250	700	2,300	3,000	7,250

Other livestock totals as of 2001 were as follows:

<b>OTHER LIVESTOCK AND COLONIES OF BESS IN TIMISKAMING DISTRICT – May 2001</b>											
<b>Goats</b>		<b>Wild Boars</b>		<b>Bison (Buffalo)</b>		<b>Deer (excluding wild deer)</b>		<b>Elk</b>		<b>Llamas and Alpacas</b>	
<b>Farms</b>	<b>#</b>	<b>Farms</b>	<b>#</b>	<b>Farms</b>	<b>#</b>	<b>Farms</b>	<b>#</b>	<b>Farms</b>	<b>#</b>	<b>Farms</b>	<b>#</b>
31	1,085	1	X	3	240	5	170	1	X	8	12

Farms = Farms Reporting

X = suppressed to protect confidentiality

There are no restrictions on the movement of live animals from Quebec to Ontario (or vice versa). The plant could therefore draw on Quebec production for animals. Please see Appendix A for Quebec livestock statistics adjacent to the study area.

## **3.0 MARKET ASSESSMENT**

### **3.1 BACKGROUND**

A zone analysis was used for the market analysis. The consultants did not look at markets beyond Ontario, as this would require federal licensing. (A prudent course of action could be to develop a plant that meets federal standards and operates as a provincial facility until other opportunities open up.) There are also indications that the provinces are working on inter-provincial licensing, which could facilitate sales into Quebec and other provinces.

The zone analysis looked at a circular zone of 120 miles (192 km) from New Liskeard within Ontario as per the accompanying map.

### **3.2 COMPETITIVE FACTORS**

Within the zone described in 3.1, there are five existing facilities listed as licensed establishments under the Ontario Act including:

1. Rheal's Abattoir & Meat Market  
RR2, Kenabeek, ON, P0J 1M0  
County of Temiskaming  
(705) 647-7419
2. Eric's Clay Belt Abattoir  
P.O. Box 6, Earlton, ON, P0J 1E0  
County of Temagami  
(705) 563-8131



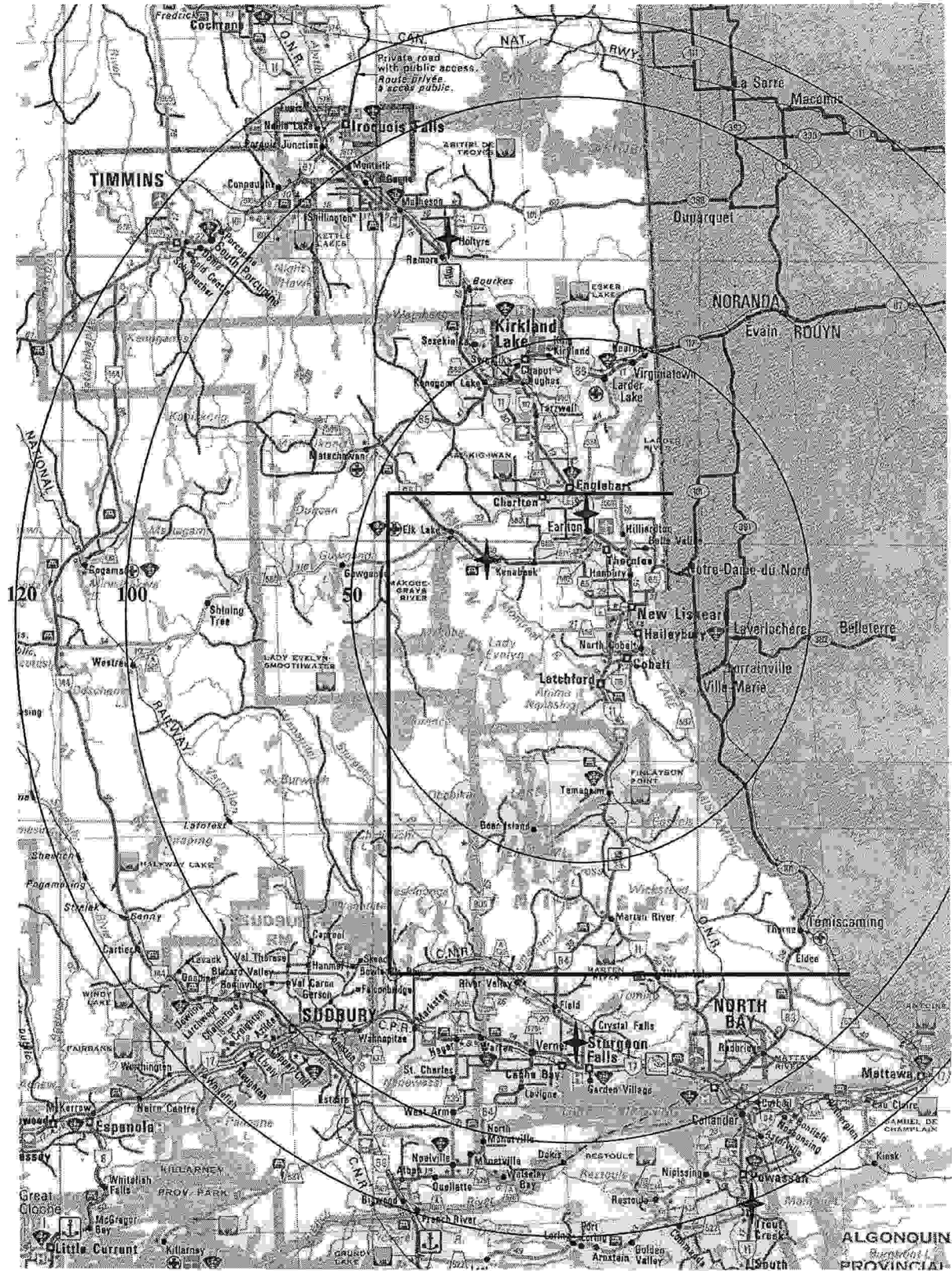
3. Bennett Abattoir  
Ramore, ON, P0K 1R0  
County of Timmins  
(705) 236-4498
  
4. Northern Meat Packers & Abattoir Ltd.  
RR1, Box 175, Trout Creek, ON, P0H 2L0  
(705) 723-5573
  
5. Abattoir Simon & Fils  
725 LeBlanc Road, Sturgeon Falls, ON, P2B 2N6  
(705) 753-1112

The first two establishments are “local” where as the other facilities are somewhat further away (by road).

Sturgeon Falls	149 km from New Liskeard
Trout Creek	201 km from New Liskeard
Ramore	125 km from New Liskeard

As was previously reported, the two local plants will need to address some issues to meet the new licensing requirements. Rheal's Abattoir & Meat Market will not likely be salvageable, but the operators wish to continue in the business. The other operator plans to continue and claims to have identified costs of \$10,000 for the required upgrades. The combined volumes of the two plants, based on the two operators' comments, is estimated as follows:

- 1,650 beef animals
- 200 hogs
- Total gross revenue of \$550,000-600,000



✦ Indicates current abattoirs

These plants are mainly doing custom work. The operators believe the unlicensed kill is between 1,000 and 1,650 animals per year (or roughly equal to what the two licensed plants are now doing). The availability of this business in the future would depend on whether (and how) the new rules and regulations are applied in order to stop activity by unlicensed operators.

Both operators are keen to continue in the industry.

### **3.3 POTENTIAL FOR MEAT SALES ON A WHOLESALE/RETAIL BASIS**

The potential for meat sales by the proposed/new meat processing business, in the catchment area for the plant, is a function of the area population, per capita meat consumption and the existing competitive situation in the retail and wholesale trade.

#### **3.3.1 Approach**

The market analysis focused on the local market. Research was not done in respect of the "export" of meat to other provinces or to the USA. Analysis of these markets was not done as the model's initial focus is on a provincially licensed facility.

#### **3.3.2 Market Size**

The Ontario market represents the largest provincial market in Canada. Ontario's population was 12,274,251 in 2003, which is some 38.4% of the total population of Canada.

The catchment area is located within the Timiskaming district of the Northeast economic region. The Northeast region has a total population of 567,800 of which the Timiskaming district encompasses 35,500 people.

The specific population of the Haileybury area (includes Haileybury, New Liskeard, Cobalt, Dymond and two smaller areas) was 12,375 in 2004.

A further breakdown of the local district is provided as follows (2001 data):

<u>Township</u>	<u>Population</u>
Armstrong	1,223
Thornloe	120
Temagami	893
Latchford	363
New Liskeard	4,906
James	467
Kerns	360
Harley	557
Harris	518
Hilliard	241
Dymond	1,181
Haileybury	4,543
Cobalt	1,229
Coleman	550
Casey	421
Brethour	<u>57</u>
	18,027

Additional population centres within the 120-mile zone include the following:



<u>Township</u>	<u>Population</u>
Timmins	43,445
Kirkland Lake	7,840
Iroquois Falls	5,157
Sudbury	158,000
Nipissing District (partly within the zone)	<u>85,300</u>
	299,742

### Summary

Local Trading Area	18,027
Adjacent Kirkland Lake	<u>7,840</u>
	25,867
Edges of Zone	<u>291,902</u>
<b>Total</b>	<b><u>317,769</u></b>

### 3.3.3 Meat Consumption

Consumption data for meat products in Canada is tracked by CanFax Research Services. The most recent data available indicated the following:

- Per capita beef consumption in 2003 was 51.5 lbs, which was a slight increase (5%) over 2001 and 2002. Some analysts attribute the increase to support for farmers over the BSE crisis, but other factors include the various low carbohydrate diet fads and some retail price reductions. The above figure is on a retail weight basis (RWB).
- Pork consumption in 2003 was 42.2 lbs per person, which was a 10% decline over 2002. Chicken and turkey consumption has remained stable at 67.2 lbs and 9.3 lbs respectively.

- Lamb consumption is 1.8 lbs per person.

On the basis of the above, the market for red meat in Ontario and the study area would be as follows:

<b>Market for Red Meat</b>					
	Population	Beef Per Capita (lbs)	Total Beef (lbs)	Pork Per Capita (lbs)	Total Pork (lbs)
Immediate Area	18,027	51.5	928,390	42.2	760,739
Adjacent Kirkland Lake Area	7,840	51.5	403,760	42.2	330,848
Edges of Zone	291,902	51.5	15,032,953	42.2	12,318,264
<b>Total</b>	<b>317,769</b>	-	<b>16,365,103</b>	-	<b>13,409,851</b>

The lamb per capita figure of 1.8 lbs per person would also imply the local and adjacent lamb markets could be some 571,984 lbs. However, lamb consumption is highly dependent on product availability, so the per capita figures may not be as applicable as those for beef and pork.

There are no per capita consumption figures for bison, elk or other game animals.

Average lbs of meet per carcass animal are as follows:

	<i>Carcass weight Basis</i> CWB (Lbs)	<i>Retail weight Basis</i> RWB (Lbs)	Yield from Live
Steer	834	590	43%
Cow	689	396	33%
Midrange		493	
Lamb	65	49	41%
Hogs	182	133	53%

For beef, the number of animals required to meet local and adjacent market demand is calculated as follows:

Beef					
	Total Meat (RWB)	Average RWB per Animal		Total Steers	Total Cows
		Steer	Cow		
Immediate Area	928,390	590	396	1,573	2,344
Kirkland Lake	403,760	590	396	684	1,020
<b>Subtotal</b>	<b>1,332,150</b>	-	-	<b>2,257</b>	<b>3,364</b>
Edge of Zone	15,032,953	590	396	25,480	37,962
<b>Total</b>	<b>16,365,103</b>	<b>590</b>	<b>396</b>	<b>27,737</b>	<b>41,326</b>

It is noted that the area likely produces some 6,000 male calves per year. Only 1,000 are currently finished in the area. The total cow cull would be some 1,000 animals per year (at 10%).

For pork, the number of animals required to meet local and adjacent market demand is calculated as follows:

Pork			
	Total Meat (RWB)	Average RWB per Hog	
Immediate Area	760,739	133	5,720
Kirkland Lake	330,848	133	2,888
<b>Subtotal</b>	<b>1,091,587</b>	-	<b>8,608</b>
Edge of Zone	12,318,264	133	9,262
<b>Total</b>	<b>13,409,851</b>	<b>133</b>	<b>17,870</b>

Based on current sow inventories, the area production could be as high as 2,700 hogs per year (18 pigs per sow).

Lamb requirements could be as follows:

<b>Lamb</b>			
	<b>Total Meat (RWB)</b>	<b>Average RWB per Carcass</b>	<b>Total Lambs</b>
Immediate Area	32,448	49	662
Kirkland Lake	14,112	49	288
<b>Subtotal</b>	<b>46,560</b>	<b>-</b>	<b>950</b>
Edge of Zone	525,424	49	10,723
<b>Total</b>	<b>571,984</b>	<b>49</b>	<b>11,673</b>

Based on the live inventory, the potential lamb production would be some 4,000 – 5,000 lambs per year.

In conclusion, the area is probably a net importer of pork, beef and lamb.

### 3.3.4 Market Characteristics and Trends

The distribution system of food sales in Canada is large in size, with annual sales of some \$75 billion in total (2002). The industry employs 455,000 workers in over 24,000 stores. Canadians enjoy a very competitive shopping environment and spend only 9.1% of their incomes on grocery products.

The study area has a number of chains or networked outlets which sell groceries:

A & P Foods	Loeb Canada
Cooperative Regionale	M & M Meats
Food Town	No Frills
Foodland (Sobeys)	Price Chopper
Grocery Depot	Valu-Mart
“Independent” chains	

**Notes:**

- Independent and No Frills are part of the Loblaws family of companies.
- The Sobeys family includes Sobeys and Price Choppers.
- A & P Foods is part of the Dominion family of companies which is now owned by Metro. Loeb and Foodland are part of this group.
- M & M Meats is a partner of J.M. Schneider.

The vast majority of total retail food sales occur through chain supermarkets. According to Agriculture Canada, meat sales represent \$2.4 billion annually. It is known that 86% of retail food sales occur through supermarkets and food stores so their share of the meat business is very significant. The market shares are as follows:

Chain Stores such as Loblaws, Sobeys, etc.	45%
Independent Grocery Stores (Buying groups)	35%
Independent Stores	<u>6%</u>
	86%

Specialty food stores (meat markets, fresh produce stores, bakeries) account for 8% with the remainder of sales (6%), being done through convenience stores. Loblaws is the largest grocery retailer in Canada with 32% of the overall market. Sobeys is another major player with a market share of about 14%. The following table shows the grocery sales and market share for Canadian retailers (2002).

<b>Canadian Grocery Retailer</b>	<b>Billions (\$) Canadian</b>	<b>Market Share (%)</b>
Loblaw	23,894	32.03
Sobeys	10,960	14.69
Safeway	5,492	7.36
Metro	5,201	6.97

<b>Canadian Grocery Retailer</b>	<b>Billions (\$) Canadian</b>	<b>Market Share (%)</b>
Overwaitea	2,380	3.19
A & P	4,400	5.90
Convenience Stores	3,250	4.36
Costco Food	3,550	4.76
Drug	2,659	3.56
Wal-Mart	2,758	3.70
Co-op	2,667	3.58
Other	7,389	9.90
<b>Total</b>	<b>74,600</b>	<b>100.00</b>

**Note:** Metro has moved up close to number two with its acquisition of A & P/Dominion.

### 3.3.5 Meat Industry Developments

Traditionally, meat sales were made through specialty “butcher shops”. Meat cutting was a skilled trade, and butchers generally had their own abattoir facilities in which they killed animals purchased from farmers.

As the grocery industry evolved, many “butcher shops” were replaced by supermarket meat departments. These facilities included equipment and space for skilled butchers to process animal sides into packaged meat including customized products “on demand”.

The next generation of meat department, which replaced the in-store meat markets, is the boxed meat facility. These operations have no rails and cannot process sides or quarters. They order loins, top sirloins, etc. and thus do very little processing and have less waste. The butcher staff skill requirements are also lower.

The big supermarket chains are now in the process of evolving their operations to handle “case-ready” meat. All processing is done off site by an owned or affiliated company, and the meat comes packaged for maximum shelf life. No skilled meat cutting staff are required for this type of operation. The reasons for adopting a case-ready strategy are as follows:

- to ensure food safety in meat (particularly ground beef);
- to address labour shortages of meat cutters;
- to provide a more consistent product throughout all of their stores; and
- to keep pace with competitors such as Wal-Mart.

Meat sales to chain supermarkets and members of buying groups are not available to local abattoirs such as this one due to the following reasons:

- Most chains operate in several provinces and thus require sourcing from a federal plant;
- Many chains are owners, partners or in the same corporate family as their meat suppliers;
- Consistent quality is a key issue. They want a proven track record, including recognized programs such as HACCP, ISO 9000, etc.; and
- Local store managers have no authority to buy products from local suppliers.

Most meat sales in the region occur through the chain outlets.

### 3.3.6 Market Research (Wholesale/Retail)

In order to assess the potential for local stores to be customers, a comprehensive survey was carried out by telephone. Within the zone depicted in the previous map, 61 stores were identified (see Appendix B for the list).

### 3.3.7 Survey Results

#### A. Grocery Stores

The following survey results were received:

- 51 of the 61 stores responded to the survey. Ten either could not be contacted or would not participate.
- 16 of 37 responded yes to the question about whether a new abattoir was needed in the area. 21 of 37 said no, and 24 did not respond.
- 14 of the 16 that said yes to a new abattoir said they would buy from a new abattoir. It needs to be an inspected facility.
- 14 respondents wanted pork, 15 wanted beef, and 5 wanted lamb.
- Packaging needs:

7/16 carcass

12/16 boxed

3/16 case ready



- Total Annual Pounds of Meat (RWB) for Grocery Stores

<b>Beef</b>	224,100
<b>Pork</b>	258,400
<b>Lamb</b>	720

#### **B. Meat Market/Butcher Shops**

A list of 13 stores was used. Contact was made with 11 of these operations, and we received the following results.

- Only nine were currently involved in meat sales.
- Six of the nine respondents would be interested in meat purchases. Six wanted beef, five wanted pork, and three wanted lamb.
- Packaging needs:
  - 5/8 carcass
  - 2/8 boxed
  - 1/8 case ready
- Total Annual Pounds of Meat (RWB) for Meat Markets:

<b>Beef</b>	466,400
<b>Pork</b>	227,032
<b>Lamb</b>	10,400

- Total Combined Annual Pounds of Meat (RWB) for Grocery Stores & Meat Markets:

Species	Total RWB Weight	RWB/Animal (lbs)	No. of Animals
Beef	690,500	Cow – 396 Steer - 590	Cow – 1,744 Steer – 1,170
Pork	485,432	133	3,649
Lamb	11,120	49	227

### Beef

Potential Capture Estimate:

- 90% opening year
- Split of 60% steers, 40% cows (by weight)
- 5% growth rate

	Base Potential	90%	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Cows	697	627	658	726	762	800	840
Steers	702	632	663	696	736	768	807
<b>Total</b>	<b>1,302</b>	<b>1,309</b>	<b>1,321</b>	<b>1,422</b>	<b>1,493</b>	<b>1,568</b>	<b>1,647</b>

The above represents animals purchased, slaughtered and processed for resale as fresh/frozen meat.

### Pork

Potential Capture Estimate:

- 50% by Year 3 (due to lack of hog supply in the region)
- All hogs
- 5% growth rate

	<b>Base Potential</b>	<b>70%</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>
Hogs	3,649	1,824	1,915	2,011	2,111	2,217	2,328

The above is for animals purchased, slaughtered and processed for resale.

### **Lamb**

Lamb sales were not significant enough to be included.

## **3.4 CUSTOM VOLUMES**

For the purposes of analysis, it was assumed that the new plant would capture 100% of Rheal's Abattoir & Meat Market volume, and 75% of the unlicensed kill volume. (This assumes he would be a participant in the project.)

### **Existing Volumes**

	<b>Rheal's</b>	<b>Unlicensed*</b>	<b>Total</b>
Beef	1,250	990	2,240
Pork	150	25	175

\* The average of the unlicensed kill is 1,325 (high 1,650 – low 1,000). A capture of 75% of this total is utilized in the table.

Growth 5% per year

<b>Custom Slaughter</b>					
	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>
Beef	2,240	2,352	2,470	2,593	2,722
Pork	175	183	193	203	213

### Total Units

<b>Beef</b>					
	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>
Owned Meat	1,321	1,422	1,493	1,568	1,647
Custom	2,240	2,352	2,470	2,593	2,722
Total	3,561	3,774	3,963	4,158	4,369

- More fed cattle will be needed from the area than are currently produced.

<b>Pork</b>					
	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>
Owned Meat	1,915	2,011	2,111	2,217	2,328
Custom	175	183	193	203	213
Total	2,090	2,194	2,304	2,420	2,541

- Achieving these pork volumes may require sourcing outside the district.

Animal Unit (AU) Equivalent – One animal unit is the equivalent to a finished steer in weight. A hog is 0.3 AUs, and a lamb is 0.1 AUs.

<b>AUs for Model</b>					
	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>
Beef	3,561	3,774	3,963	4,158	4,369
Hogs	627	658	691	726	762
Total	4,188	4,432	4,654	4,884	5,131

This would represent weekly volumes of 83 in Year 1 rising to 103 by Year 5 (based on 50 weeks of operation). Typically plants would kill for 2 to 3 days and do processing for the remaining days. The kill per day would therefore range from 28 to 34 based on a 3-day kill (AU basis).

## **4.0 WASTE ISSUES**

Waste disposal is a major issue for abattoir projects. There are two main components to waste disposal, including one for solid material and one for liquids. The constraints relating to both have become more significant in recent times due to issues such as BSE, water pollution, landfill restrictions and rendering industry changes. Waste disposal costs can threaten project viability, so the capital and operating costs for waste disposal need to be carefully considered for this project. In many cases, waste disposal costs can threaten the viability of the project. Additional research is needed in light of emerging issues pertaining to solid waste.

### **4.1 TYPES OF PLANTS CONSIDERED AND SLAUGHTER PROCESS**

#### **Red Meat**

For this project, the proposed red meat plant is defined as a “simple slaughterhouse”. This is “a plant that slaughters animals and does a very limited amount of by-product processing. Its main products are fresh meat in the form of whole, half or quarter carcasses or in smaller meat cuts.” This could include slaughter only or slaughter as well as cut and wrap facilities.

The slaughter process is as follows:

Stunning;

Suspension from an overhead rail by the hind legs;

Sticking and bleeding over a collecting trough. The collected blood may be sewerred or processed;

Hide removal (cattle) or scalding and dehairing (hogs);

In some plants hogs are skinned to eliminating scalding and dehairing. Scalding is a method to loosen hair before removal. For several minutes, the hogs are held in a scalding tank at approximately 60°C. After scalding, the hogs are mechanically dehaired by abrasion and singed in a gas flame to complete the hair removal process.

Decapitation;

Opening of the carcass by cutting;

Inspection of the carcass;

Evisceration (removal of intestines and internal organs);

Splitting and cutting of the carcass; and

Chilling or freezing.

If the plant goes beyond slaughter to do cut and wrap, the following additional activities take place:

Cutting and deboning.

## **4.2 SOLID WASTE**

### **Red Meat – Beef**

The products resulting from red meat slaughter include carcasses and by-products. The dressing percentage is the carcass weight expressed as a percentage of live weight. Saleable meat results from the carcass being broken down into the various cuts. Dressing percentages and saleable meat percentages vary with a prime finished steer yielding the highest, and canner cows yielding lower.

### Average Dressing %

Prime Steer	64%
Canner Cow	45%

When the animal is further processed, the quantity of saleable meat depends on the quality of the animal. A lean, heavily muscled animals will yield more than a fat animal. For planning purposes, an average beef animal could yield as follows:

Dressing Percentage of Carcass Weight	61%
Saleable Meat as a Percentage of Carcass Weight	71%
Saleable Meat Percentage of Live Weight	43%

(Very high quality animals could be as high as 52%, lower quality animals could be as low as 30%.)

The 57% residual includes the hide, which is generally saleable. It represents 8% of weight. This leaves 49% of the animal that is waste including bone, fat, viscera, paunch manure, etc. For planning purposes, 50% of beef volume is waste.

### Hogs

For hogs, the yield is typically higher. An average market hog would yield as follows:

Dressing Percentage	72%
Saleable Meat as a Percentage of Carcass Weight	65%
Saleable Meat as a Percentage of Live Weight	47%



(High quality animals could yield as high as 65%, low quality animals could be 37%.)

For planning purposes, the waste to be disposed of from hogs would amount to 50-53% of total live weight.

### **Lamb**

Lamb yields are somewhat lower than beef. For planning purposes, an average lamb would yield as follows:

Dressing Percentage of Carcass Weight	54%
Saleable Meat as a Percentage of LiveWeight	75%
Saleable Meat Percentage	41%

(Lamb yields range from 31% to 44%.)

For planning purposes, lamb waste to be disposed would be 60%. (This could be reduced somewhat if a market could be found for the hides.)

#### **4.2.1 Potential Volumes of Solid Waste**

### **Beef**

#### Assumptions

- Beef have weight average of 1,150 lbs
- 50% solid waste (assumes hide is sold) equal 575 lbs

	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>
No. of Animals	3,561	3,774	3,963	4,158	4,369
Avg. Wt. Solid Waste	575	575	575	575	575
Total Waste Wt. (lbs)	2,047,575	2,170,050	2,278,725	2,390,850	2,512,175
Tons	1,023.8	1,085.0	1,139.4	1,195.4	1,256.1
Metric Tons (Mt)	928.8	984.3	1,033.6	1,084.4	1,139.5
Weekly Mt	18.6	19.7	20.7	21.7	22.8

### **Pork**

#### **Assumptions**

- Hog average live weight of 250 lbs
- 50% solid waste or 125 lbs

	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>
No. of Animals	2,090	2,194	2,304	2,420	2,541
Avg. Wt. Solid Waste	125	125	125	125	125
Total Waste Wt. (lbs)	261,250	274,250	288,000	302,500	317,625
Tons	130.6	137.1	144.0	151.3	158.8
Mt	118.4	124.4	130.6	137.3	144.1
Weekly Mt	2.4	2.5	2.6	2.7	2.9

The total solid generation for this model would range from 15.6 Mt per week in Year One to 19 Mt per week in Year 5.

### 4.3 DISPOSAL OF SOLID WASTE

There are several potential methods for solid waste disposal including:

1. Rendering

In the past, slaughter facilities were able to sell their waste to rendering plants for a modest fee. However, this is no longer the case. Rendering companies now charge for pickup. This industry change was primarily due to BSE concerns. Specified Risk Materials are now considered as hazardous waste (see Appendix C).

The pickup charge is typically in the range of 5¢ per pound, so a beef animal's waste disposal fee could be \$25.00 per animal (net of paunch manure). Some renderers will not take SRM material if all waste went to rendering.

As noted in a recent press release, Rothsay is opening a biodiesel plant in Montreal (see the press release in Appendix D). This may provide an option for SRM disposal. More research is being done on this matter.

2. Landfill

For solid waste that can not go to the rendering company, a potential option is to take the waste to a landfill. Landfills have become centralized and some municipalities only have waste transfer stations. Tipping fees and transportation costs can make this option very expensive. In addition, some landfills may not take abattoir waste. Officials from Coleman are checking to see if their landfill license allows offal disposal.

### 3. Composting

For solid waste, the development of a composting operation to treat solid waste may be an option. Capital costs can range to \$100K and operating costs range to \$5/Mt. (There may be issues in respect to composted SRM material.) We have capital costs for this option. Pork waste composting would have no issues. We have included provision for composting in this plan.

### 4. Incineration

The capital cost of incinerators is relatively low, but operating costs range to \$80/Mt.

## 4.4 LIQUID WASTE

Slaughterhouse effluent is considered to have significant potential for environmental pollution, bad odours and health hazards.

### Volume Estimate

#### **Red Meat**

A minor quantity of moisture comes from the animals slaughtered, but most effluent results from clean-up procedures. All water used results in wastewater that will require disposal.

Guidelines from CFIA do not prescribe minimum water use quantities per animal unit. The guidelines are generally based on using enough water to adequately maintain the required standard of cleanliness.

Water utilization estimates vary considerable and are dependent on factors such as:

- the use of dry, pre-clean-up procedures;
- blood collection;
- the use of water conservation nozzles; and
- dry dumping of paunch contents or whole handling of paunch.

Water use estimates per animal unit range from 50 gallons to 440 gallons.

#### Examples

- Mallot Creek Engineers – Estimate for a Beef Slaughterhouse (Rainy River, Ontario)  
440 gallons/AU
- CFIA Ontario  
200 gallons/AU
- San Juan Mobile Unit (Slaughter Only)  
50 gallons/AU

A planning average volume use of 200 gallons per AU is considered appropriate. Liquid waste produced is generally 85% of water used. If scalding hogs, water use

would be higher. (We are currently looking at a steam cleaning unit as a pilot project in B.C. – this could significantly reduce water and chemical use.)

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
AU	4,188	4,432	4,654	4,884	5,131
Gallons per AU	200	200	200	200	200
Total Water Use	837,600	886,400	930,800	976,800	1,026,200
Waste at 85%	711,960	753,440	791,180	830,280	872,270

#### 4.5 TYPICAL COMPOSITIONS OF EFFLUENT

##### Definitions

##### **BOD<sub>5</sub> – Biological Oxygen Demand**

This refers to the amount of oxygen that would be consumed (in 5 days) if all the organics in one litre of water were oxidized by bacteria and protozoa. A very clear lake water sample could show a reading of 2 mg/litre or less, while residential sewage typically is at 300-350 mg/litre. Abattoir effluent can be as high as 3,500-4,000 mg/litre. (Blood is a major contributor. Pure blood could be as high as 405,000 mg/litre.) The target BOD<sub>5</sub> for a treatment plant output is 25 mg/litre.

##### **TSS – Total Suspended Solids**

This refers to solids in water that can be trapped by a filter. High TSS blocks light and slows down decomposition. Target range for treated effluent is 30 mg/litre. Abattoir wastewater is usually within 1,500-2,500 mg/litre, while household waste is typically 220 mg/litre.

### **FOG – Fats, Oils and Grease**

This refers to fats, oils and grease that end up in the waste stream. The average value is 100 mg/litre, and the objective is to reduce or eliminate these substances as they are detrimental to the treatment process. Abattoir wastewater ranges are from 300-500 mg/litre.

### **Total N<sub>2</sub> – Nitrogen**

This refers to nitrogen in the effluent. The average residential effluent is 40 mg/litre. Abattoir effluent ranges from 100 – 400 mg/litre.

### **Total Phosphorus**

Values in residential average 12 mg/litre. Abattoir effluent ranges from 20-60 mg/litre.

### **Summary of Abattoir Effluent Values**

BOD <sub>5</sub>	3,500 – 4,500 mg/l
TSS	1,500-2,500 mg/l
FOG	300-500 mg/l
Total N <sub>2</sub>	100-400 mg/l
Total Phosphorus	20-60 mg/l

It is suggested that the plant would follow recommended practices for cleanup and water conservation as per the Best Management Practices. Please find a copy of this document in Appendix E. This can reduce nitrogen or phosphorus loading.

#### 4.6 EFFLUENT DISPOSAL

The composition of abattoir effluent practices precludes its direct disposal into a municipal treatment system. We have consulted with K. Smart Associates Ltd., who are an engineering firm located in Kitchener, Ontario (see Appendix F). They have suggested a treatment plant costing \$600,000 would be required. Note that we have oversized the plant to 8,000 AUs to account for potential future expansion and/or increased water use.



## 5.0 OTHER INFRASTRUCTURE CONSIDERATIONS

### 5.1 SITE CONSIDERATIONS AND ACCESS

Three sites were identified by the Township of Coleman:

Site 1 Old pit across from miller pit (Sharp Lake)

Site 2 Old miller pit adjacent to Highway 11

Site 3 Adjacent to road to landfill

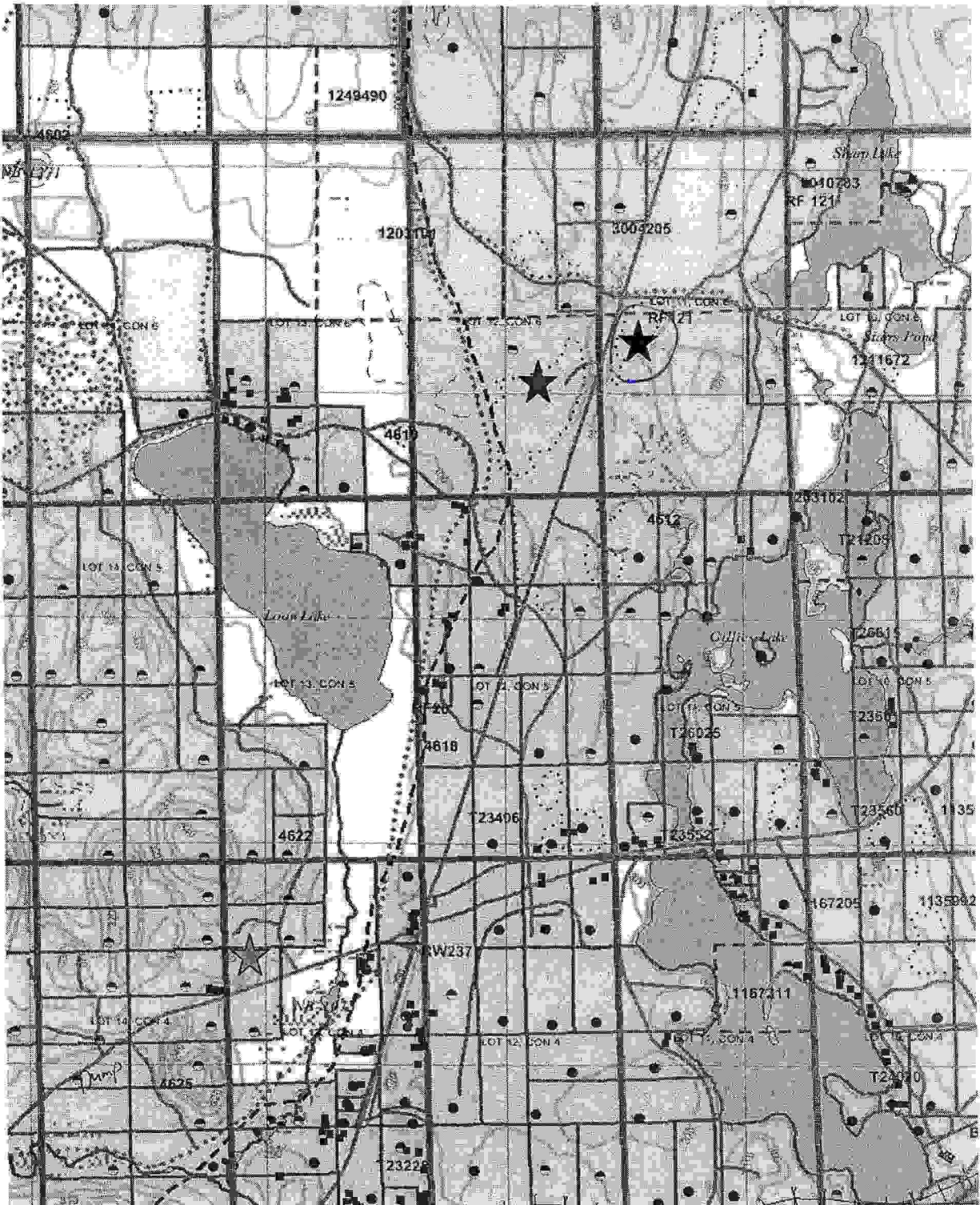
The criteria for selection will be based on the following:

- Isolation from conflicting land uses (i.e. residential);
- Availability of power;
- Adjacency to an existing road for access and/or retail viability;
- Soil conditions for foundation, waste disposal, etc.;
- Availability of water; and
- Zoning.

#### Notes:

1. Site One is located across the highway from Site Two. It has the most potential for adjacent land use conflicts (cottage access road beside the property). It is very visible from Highway 11. The terrain is flat and would require less site work depending on where the project is situated. There is a power line within  $\frac{1}{4}$  mile (probably single phase). Well water availability is unknown. The zoning is open land, which would require rezoning. It is crown land, and the municipality expects to own it within three weeks (since the time of the visit in May).

2. Site Two is less well isolated, but conflict with other adjacent land uses appears unlikely. There is no power line. It is adjacent to Highway 11, which is an attractive feature. Water ponding is prevalent, and substantial reshaping and/or filling would be needed. Well water source conditions are unknown. It is zoned as open land, which would require rezoning. The municipality is considering acquisition of the land.
  
3. Site Three is well isolated from conflicting land use activities. There is a power line, but it appears to be single phase. It is adjacent to a road for access but has no visibility from a main traffic artery. There appears to be a well on or near the site. Water quality is unknown at this time. It is zoned rural, which could mean an abattoir is a permitted use. The land is all owned by the municipality.



★ Site 1  
*Sharpe*

★ Site 2  
*Miller*

★ Site 3  
*Landfill*

At the present time, Site One is being looked at as a possible site as it has good potential for highway visibility for retail. It may also require less work in respect of site improvements. In addition, soil conditions seem favourable.

## **5.2 AVAILABILITY OF ELECTRICAL POWER**

The plant will require three (3) phase power. Hydro One has provided a quote to provide a primary line (347/600V 600A disconnect at a primary line voltage of 12.5KV phase to phase):

- \$18,000 + \$1,750 staking fees + GST
- Plus clearing of 5,500 m<sup>2</sup> of land (roughly 1.5 acres)  
\$10,000/acre = \$15,000
- Total = \$34,750 + GST

Please see Appendix G for a copy of the quote.

## **5.3 ACCESS**

There is an existing road off the Highway, which goes by the site. It should be possible to access the building site from this road, rather than developing a new approach from the highway.

## **5.4 WATER**

Abattoirs require potable water which meets Canadian Drinking Water Standards. Sourcing municipal water was not considered. According to Link Drilling, the following information is relevant to this area:

- Good water is available at depths of 200 feet
- The approximate cost of two wells would be \$50,000, including drilling, casing, pumps, etc.

Water from a non-treated source will need periodic testing (bi-weekly).

## 6.0 FACILITY (PRELIMINARY)

### 6.1 BUILDING

A facility to process 5,000 AUs per year would typically be laid out as per the attached drawing. This plant, not including the holding areas, has a total are of 5,780 s.f. It does not include provision for retail.

The approximate cost of the basic building including cooling and refrigeration at 200 s.f. would be \$1,156,000.

### 6.2 EQUIPMENT COSTS

We are in the process of costing the equipment line with Sperling Industries Ltd., who are suppliers to the industry. However, a typical inventory would be needed as follows:

**Temiskaming Abattoir  
Preliminary (Exclusive of Refrigeration)**

**Equipment and Furnishings  
Slaughter/Evisceration Process Equipment**

Revolving Stunning Pen Door	\$6,970
Vertical Gate	2,885
Cartridge Activated Stunner W/1000 Loads	1,550
Hoist	19,500
Lander	6,550
Automatic Shackle Positioner	9,250
Gravity Shackle and Bleed Rail	14,150
Blood and Water Drain	1,680
Beef Shackles	2,800
Hock/Horn Cutter w/Power Unit & Balancer	14,900
Hock/Horn Cutter Sterilizer	3,150
Hock/Horn Chute	2,250
Shackle Lowerator	7,000
Transfer and Cut off Hind Feet Platform	4,450

**Temiskaming Abattoir**  
**Preliminary (Exclusive of Refrigeration)**

**Equipment and Furnishings**  
**Slaughter/Evisceration Process Equipment**

Trolley Hoist	2,650
Shackle Releasing Device	9,200
Second Leg Lift	8,825
Gravity Skinning Rail	15,000
Hide Puller Assembly	98,560
Hide Chute	1,800
Steam Vac	22,400
Hand Skinners	22,400
Beef Dropper Spreader	16,850
Beef Brisket Saw w/ Balancer	6,700
Brisket Saw Sterilizer	1,120
Viscera Buggy	6,720
High/Low Platform - Hydraulic Elevating	17,500
Beef Spreader	6,160
Stn Stl Saw Shield	1,800
Splitting Saw w/ Balancer	13,150
Splitting Saw Sterilizer	2,688
Viscera Inspection Platform	4,170
Final Inspection Platform	7,150
Cut-Down Saw w/ Balancer	5,600
Cut-Down Saw Sterilizer	1,120
Condemned Chute	2,240
Rail Scale	5,130
High/Low Platform - Hydraulic Elevating	17,500
Carcass Wash Cabinet	5,600
Quartering Station & Dock	13,000
Side Finger Decline Conveyor	8,750
Rail Scale	5,130
Head Wash Cabinet	4,430
Head Rack	2,700
Head Boning Table	3,000
Tongue Wash	1,425
Pluck Table	4,500
Offal Wash	2,100
Boxing Table	2,700
Box Scale	2,500
Hand Wash Sink with one Sterilizer	17,500
Meat Wash Sink	3,650
Apron Wash Cabinet	3,360
Frock Racks	500
Knife Sharpener	750
Trolley Storage Racks	3,000



**Temiskaming Abattoir  
Preliminary (Exclusive of Refrigeration)**

**Equipment and Furnishings  
Slaughter/Evisceration Process Equipment**

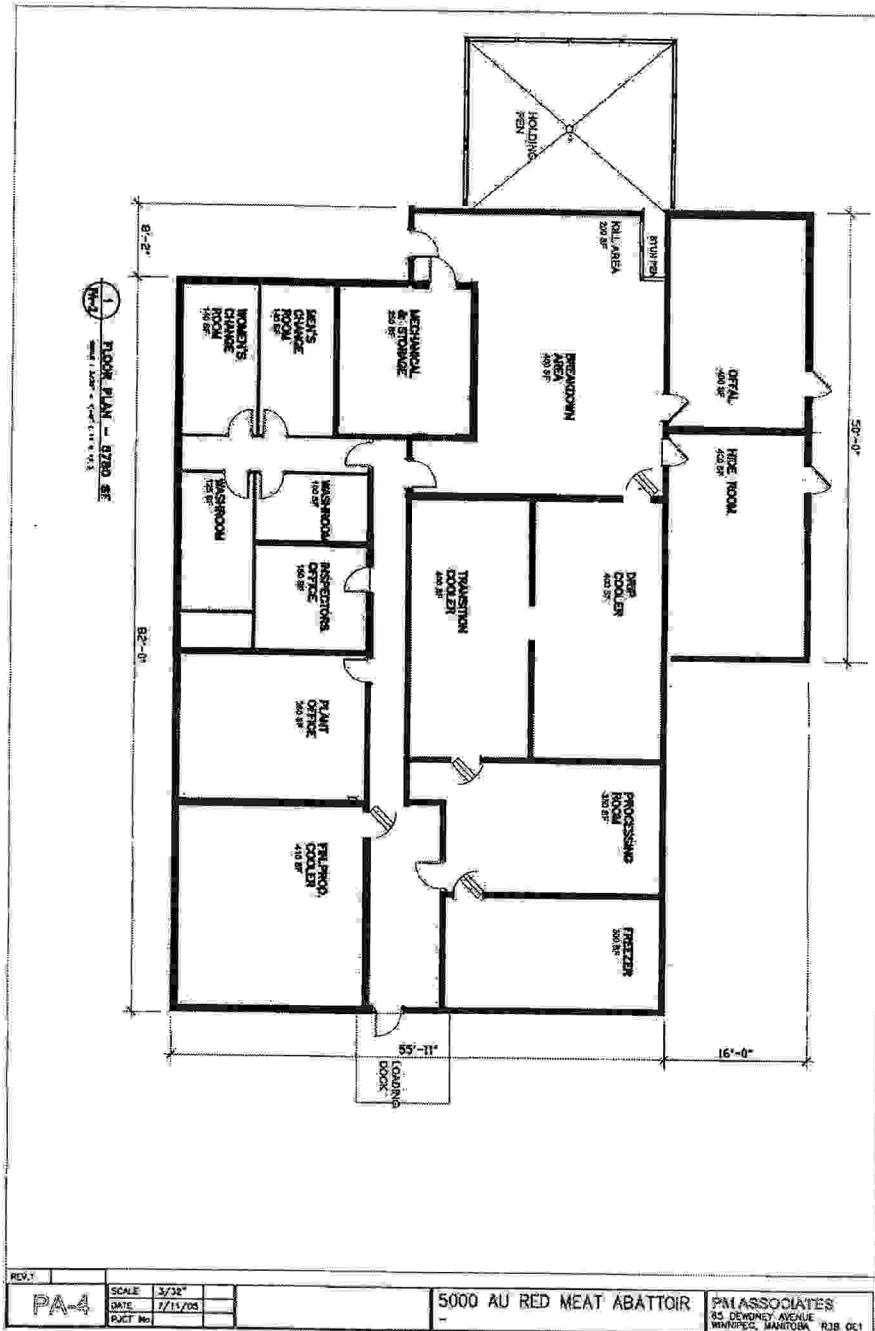
Trolley Wash Tank	5,900
Trolley Rinse Tank	3,100
Trolley Oil Dip Tank	4,345
Trolley Hoist	3,650
Monorail for Trolley Hoist	500
<b>Sub-Total Process Equipment</b>	<b>\$495,608</b>
<b>Equipment Installation</b>	<b>123,902</b>
Employee Welfare (Lockers/Furnishings)	\$25,000
Administrative/Management	15,000
<b>Total Equipment and Furnishings</b>	<b>\$659,510</b>

Some savings are possible is used equipment is used.

### 6.3 SUMMARY OF PROJECT COSTS (PRELIMINARY)

Basic Building	\$1,156,00
Equipment	<u>659,510</u>
Subtotal	1,815,510
Add:	
Hydro	36,000
Wells	50,000
Sewage	600,000
Composting Facility	25,000
Engineering @ 10%	<u>252,651</u>
Subtotal	2,779,161
Add: Contingency at 10%	277,916
	3,057,077
Working Capital	<u>100,000</u>
<b>Total</b>	<b>\$3,157,077</b>





## 6.4 SOURCES (PRELIMINARY)

### 1. Waste Disposal

Assumes Provincial/Federal/Municipal would cover 75% - applicant 25%

### 2. Hydro

Assumes Hydro One could provide 75% grant?

### 3. Assume target equity of 30% on remainder

<b>Total Cost</b>	<b>\$3,157,077</b>
Less:	
Hydro One (75% of \$36,000)	24,000
Provincial/Federal/Municipal on Waste Treatment (75% of \$625,000)	<u>468,750</u>
<b>Net Cost</b>	<b><u>\$2,664,327</u></b>
30% Equity	799,298
Net to be Financed	1,865,029
5 TCFDC	<u>500,000</u>
Net to banks, etc.	<b>\$1,365,029</b>

Note: More assistance from Canada/Ontario may be possible.

## 7.0 FINANCIAL PROJECTIONS

The following preliminary financial projections indicate that the proposed plant could achieve modest profit levels by Year Three. However, this is highly dependent on achieving at least the volumes noted in the projections.

Viability could be enhanced by:

1. Reducing the project cost by such things as:
  - acquiring used equipment;
  - reducing building size (unlikely); and
  - reducing construction costs per square foot (depends on local market)
2. Increasing equity levels.
3. Obtaining more government support. (Two and Three above would reduce interest costs.)
4. Making more sales to increase volumes.
5. Adding a retail component to increase volumes and achieve higher margins.

The model is for discussion and will be updated as we refine the overall plan.

<b>South Temiskaming Abattoir</b>					
<b>Income and Expense Projections</b>					
	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
<b>Revenue</b>					
Total Sales	\$1,991,517	\$2,032,490	\$2,491,579	\$2,763,728	\$3,105,838
Less: Direct Costs	1,639,752	1,723,261	2,017,478	2,303,910	2,595,734
<b>Total Gross Profit</b>	<b>\$351,765</b>	<b>\$309,228</b>	<b>\$474,101</b>	<b>\$459,818</b>	<b>\$510,104</b>
<b>Expenses</b>					
Insurance	\$24,000	\$24,000	\$24,000	\$24,000	\$24,000
Bank Charges	600	600	600	600	600
Communications	6,000	6,000	6,000	6,000	6,000
Advertising/Donations	19,915	20,325	24,916	27,637	31,058
Uniforms	2,000	2,000	2,000	2,000	2,000
Professional Fees	8,000	8,000	8,000	8,000	8,000
Sub-Total	60,515	60,925	65,516	68,237	71,658
<b>Staffing</b>					
General Manager	40,000	40,000	40,000	40,000	40,000
Clerical Staff	24,000	24,000	24,000	24,000	24,000
Accounting Staff	24,000	24,000	24,000	24,000	24,000
Sub-Total Wages	88,000	88,000	88,000	88,000	88,000
Add: Benefits (10%)	8,800	8,800	8,800	8,800	8,800
Total Staffing Costs	96,800	96,800	96,800	96,800	96,800
Utilities	25,000	25,000	25,000	25,000	25,000
Repairs/Maintenance	15,000	15,000	15,000	15,000	15,000
	\$197,315	\$197,725	\$202,316	\$205,037	\$208,458
Net Income BDIT	\$154,450	\$111,503	\$271,785	\$254,780	\$301,646
Less: Interest costs	78,489	72,460	66,083	59,341	52,210
Net Income BDT	\$75,961	\$39,044	\$205,702	\$195,440	\$249,436
Less: Depreciation	178,142	149,912	127,032	108,444	93,301
Net Income BT	-\$102,181	-\$110,868	\$78,670	\$86,996	\$156,135
Less: Taxes	-	-	-	-	25,000
Net Income	-\$88,256	-\$110,868	\$78,670	\$86,996	\$131,135

**South Temiskaming Abattoir  
Cash Flow Projection**

	<u>Start-Up</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
<b>Sources of Funds</b>						
<b>Equity</b>						
Owners	\$399,298	-	-	-	-	-
Ontario/Canada	400,000	-	-	-	-	-
<b>Total Equity</b>	<b>\$799,298</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Debt Financing</b>						
RRFDC Loan	\$500,000	\$ -	\$ -	\$ -	\$ -	\$ -
FCC Capital Loan	1,365,029	-	-	-	-	-
Infrastructure	492,750	-	-	-	-	-
<b>Total Debt Financing</b>	<b>\$2,357,779</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Net Income</b>	<b>\$ -</b>	<b>-\$88,256</b>	<b>-\$110,868</b>	<b>\$78,670</b>	<b>\$86,996</b>	<b>\$131,135</b>
<b>Add: Depreciation</b>		<b>178,142</b>	<b>149,912</b>	<b>127,032</b>	<b>108,444</b>	<b>93,301</b>
<b>Total Sources of Funds</b>	<b>\$3,157,077</b>	<b>\$89,886</b>	<b>\$39,044</b>	<b>\$205,702</b>	<b>\$195,440</b>	<b>\$224,436</b>
<b>Uses of Funds</b>						
Building Construction	\$1,156,000	\$ -	\$ -	\$ -	\$ -	\$ -
Equipment Purchases	659,510	-	-	-	-	-
Other costs	1,241,567	-	-	-	-	-
Loan Repayment (Prin. Only)	-	104,861	110,890	117,267	124,009	131,140
<b>Total Uses</b>	<b>\$3,057,077</b>	<b>\$104,861</b>	<b>\$110,890</b>	<b>\$117,267</b>	<b>\$124,009</b>	<b>\$131,140</b>
<b>Net Cash Flow</b>	<b>\$100,000</b>	<b>-\$14,975</b>	<b>-\$71,847</b>	<b>\$88,435</b>	<b>\$71,430</b>	<b>\$93,296</b>
<b>Beginning Cash Balance</b>	<b>\$ -</b>	<b>\$100,000</b>	<b>\$85,025</b>	<b>\$13,179</b>	<b>\$101,614</b>	<b>\$173,044</b>
<b>Ending Cash Balance</b>	<b>\$100,000</b>	<b>\$85,025</b>	<b>\$13,179</b>	<b>\$101,614</b>	<b>\$173,044</b>	<b>\$266,340</b>

**South Temiskaming Abattoir  
Balance Sheet Projection**

	<u>Start-Up</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
<b>Assets</b>						
<b>Current Assets</b>						
Cash	\$75,000	-\$20,386	-\$94,644	-\$25,368	\$34,357	\$113,125
Account Receivables	-	79,661	81,300	99,663	110,549	124,234
Inventory	25,000	25,750	26,523	27,318	28,138	28,982
<b>Total Current Assets</b>	<b>\$100,000</b>	<b>\$85,025</b>	<b>\$13,179</b>	<b>\$101,614</b>	<b>\$173,044</b>	<b>\$266,340</b>
<b>Long Term Assets</b>						
Building	\$1,156,000	\$1,109,760	\$1,065,370	\$1,022,755	\$981,845	\$942,571
Equipment	659,510	527,608	422,086	337,669	270,135	216,108
other costs	1,241,567	1,241,567	1,241,567	1,241,567	1,241,567	1,241,567
<b>Total Long Term Assets</b>	<b>\$3,057,077</b>	<b>\$2,878,935</b>	<b>\$2,729,023</b>	<b>\$2,601,991</b>	<b>\$2,493,547</b>	<b>\$2,400,246</b>
<b>Total Assets</b>	<b>\$3,157,077</b>	<b>\$2,963,960</b>	<b>\$2,742,202</b>	<b>\$2,703,605</b>	<b>\$2,666,591</b>	<b>\$2,666,586</b>
<b>Liabilities</b>						
STFDC Loan	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
FCC Capital Loan	1,365,029	1,260,168	1,149,278	1,032,011	908,002	776,862
Govt infrastructure	492,750	492,750	492,750	492,750	492,750	492,750
<b>Total Liabilities</b>	<b>\$2,357,779</b>	<b>\$2,252,918</b>	<b>\$2,142,028</b>	<b>\$2,024,761</b>	<b>\$1,900,752</b>	<b>\$1,769,612</b>
<b>Equity</b>						
Start Balance	\$799,298	\$799,298	\$711,042	\$600,174	\$678,843	\$765,839
Additions	--	88,256-	110,868	78,670	86,996	131,135
Ending Balance	\$799,298	\$711,042	\$600,174	\$678,843	\$765,839	\$896,974
<b>Total Equity and Liabilities</b>	<b>\$3,157,077</b>	<b>\$2,963,960</b>	<b>\$2,742,202</b>	<b>\$2,703,605</b>	<b>\$2,666,591</b>	<b>\$2,666,586</b>

**South Temiskaming Abattoir  
Depreciation Schedules**

**Equipment (20% Declining Balance)**

<u>Year</u>	<u>Opening Balance</u>	<u>Depreciation</u>	<u>Acc. Depreciation.</u>	<u>End Balance</u>
1	\$659,510	\$131,902	\$131,902	\$527,608
2	527,608	105,522	237,424	422,086
3	422,086	84,417	321,841	337,669
4	337,669	67,534	389,375	270,135
5	270,135	54,027	443,402	216,108

**Buildings (4% Declining Balance)**

<u>Year</u>	<u>Opening Balance</u>	<u>Depreciation</u>	<u>Acc. Depreciation.</u>	<u>End Balance</u>
1	\$1,156,000	\$46,240	\$46,240	\$1,109,760
2	1,109,760	44,390	90,630	1,065,370
3	1,065,370	42,615	133,245	1,022,755
4	1,022,755	40,910	174,155	981,845
5	981,845	39,274	213,429	942,571

**South Temiskaming Abattoir****Loan Schedules****Prime Lending Rate: 3.75%****STFDC Loan**

Details: Interest Only Years 1 to 5, 7.25%, 10 Year Amortization, 7.25% Years 6 to 15, Annual Payment

<u>Year</u>	<u>Opening Balance</u>	<u>Principle Payment</u>	<u>Interest Payment</u>	<u>Total Payment</u>	<u>End Balance</u>
1	\$500,000	\$ -	\$36,250	\$36,250	\$500,000
2	500,000	-	36,250	36,250	500,000
3	500,000	-	36,250	36,250	500,000
4	500,000	-	36,250	36,250	500,000
5	500,000	-	36,250	36,250	500,000
6	500,000	35,764	36,250	72,014	464,236
7	464,236	38,357	33,657	72,014	425,880
8	425,880	41,137	30,876	72,014	384,742
9	384,742	44,120	27,894	72,014	340,623
10	340,623	47,319	24,695	72,014	293,304
11	293,304	50,749	21,265	72,014	242,555
12	242,555	54,428	17,585	72,014	188,127
13	188,127	58,374	13,639	72,014	129,752
14	129,752	62,607	9,407	72,014	67,146
15	67,146	67,146	4,868	72,014	0

**FCC Capital Loan**

Details: 10 Year Amortization, Prime Plus 2% Years 1 to 10, Annual Payment

<u>Year</u>	<u>Opening Balance</u>	<u>Principle Payment</u>	<u>Interest Payment</u>	<u>Total Payment</u>	<u>End Balance</u>
1	\$1,365,029	\$104,861	\$78,489	\$183,350	\$1,260,168
2	1,260,168	110,890	72,460	183,350	1,149,278
3	1,149,278	117,267	66,083	183,350	1,032,011
4	1,032,011	124,009	59,341	183,350	908,002
5	908,002	131,140	52,210	183,350	776,862
6	776,862	138,680	44,670	183,350	638,182
7	638,182	146,655	36,695	183,350	491,527
8	491,527	155,087	28,263	183,350	336,440
9	336,440	164,005	19,345	183,350	172,435
10	172,435	172,435	9,915	182,350	0



<b>South Temiskaming Abattoir</b>					
<b>Cost of Sales Projection</b>					
	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
<b>Sales</b>					
Custom Beef & Pork	\$135,287	\$81,720	\$184,416	\$109,162	\$97,877
Fat Stock Meat	935,361	983,429	1,040,953	1,092,174	1,147,596
Cow Meat	291,283	306,252	324,166	340,116	357,376
Pork Meat	522,756	548,769	823,153	1,097,535	1,371,919
Hide Sales	106,830	112,320	118,890	124,740	131,070
<b>Total Sales</b>	<b>\$1,991,517</b>	<b>\$2,032,490</b>	<b>\$2,491,579</b>	<b>\$2,763,728</b>	<b>\$3,105,838</b>
Commissions (5% of Sales)	\$87,470	\$91,922	\$109,414	\$126,491	\$143,845
<b>Cost of Animal Purchases</b>					
Fat Stock Purchases	\$701,521	\$737,572	\$780,715	\$819,130	\$860,697
Cow Purchases	145,641	153,126	162,083	170,058	178,688
Hog Purchases	392,067	411,577	617,365	823,151	1,028,939
<b>Total Cost of Animal Purchases</b>	<b>\$1,239,229</b>	<b>\$1,302,274</b>	<b>\$1,560,163</b>	<b>\$1,812,340</b>	<b>\$2,068,325</b>
<b>Direct Labour Costs</b>					
Hours/Animal Unit (AU)	2.5	2.5	2.5	2.5	2.5
No of AUs	4,188	4,402	4,654	4,884	5,131
Total Hours Worked	10,470	11,006	11,636	12,210	12,828
Wage Rate	\$14.00	\$14.00	\$14.00	\$14.00	\$14.00
Benefits	10%	10%	10%	10%	10%
Total Wage Costs/Hour	\$15.40	\$15.40	\$15.40	\$15.40	\$15.40
<b>Total Direct Labour Costs</b>	<b>\$161,238</b>	<b>\$169,485</b>	<b>\$179,187</b>	<b>\$188,034</b>	<b>\$197,555</b>
<b>Water and Waste Disposal Costs</b>					
Water Costs/AU	\$0.25	\$0.25	\$0.25	\$0.25	\$0.25
Liquid Disposal Costs/AU	1.00	1.00	1.00	1.00	1.00
Solid Disposal Costs/AU	10.00	10.00	10.00	10.00	10.00
Total Waste Disposal Costs/AU	\$11.25	\$11.25	\$11.25	\$11.25	\$11.25
<b>Total Waste Disposal Costs</b>	<b>\$47,115</b>	<b>\$49,525</b>	<b>\$52,360</b>	<b>\$54,945</b>	<b>\$57,727</b>
<b>Freight Costs</b>					
Freight Out per AU	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00
<b>Total Freight Costs</b>	<b>\$62,820</b>	<b>\$66,033</b>	<b>\$69,813</b>	<b>\$73,260</b>	<b>\$76,970</b>
<b>Materials &amp; Miscellaneous Costs</b>					
Material and Misc. Cost/AU	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00
<b>Total Material &amp; Misc. Costs</b>	<b>\$41,880</b>	<b>\$44,022</b>	<b>\$46,542</b>	<b>\$48,840</b>	<b>\$51,313</b>
<b>Total Direct Costs</b>	<b>\$1,639,752</b>	<b>\$1,723,261</b>	<b>\$2,017,478</b>	<b>\$2,303,910</b>	<b>\$2,595,734</b>
<b>Gross Profit</b>	<b>\$351,765</b>	<b>\$309,228</b>	<b>\$474,101</b>	<b>\$459,818</b>	<b>\$510,104</b>

**South Temiskaming Abattoir  
Custom Beef and Pork Killing Sales**

**Beef: Cows**

Month	Year 1		Year 2		Year 3		Year 4		Year 5						
	Cow Units	Killing Fee	Total Fees	Cow Units	Killing Fee	Total Fees	Cow Units	Killing Fee	Total Fees	Cow Units	Killing Fee	Total Fees			
January	60	\$70	\$4,200	57	\$70	\$3,990	70	\$70	\$4,886	59	\$70	\$4,130			
February	60	70	4,200	57	70	3,990	70	70	4,886	59	70	4,130			
March	72	70	5,017	65	70	4,550	80	70	5,584	67	70	4,690			
April	72	70	5,017	65	70	4,550	80	70	5,584	67	70	4,690			
May	77	70	5,390	73	70	5,110	90	70	6,282	76	70	5,320			
June	90	70	6,272	94	70	6,594	100	70	6,980	105	70	7,323			
July	90	70	6,272	94	70	6,594	100	70	6,980	105	70	7,323			
August	77	70	5,390	73	70	5,110	90	70	6,282	76	70	5,320			
September	72	70	5,017	65	70	4,550	80	70	5,584	67	70	4,690			
October	72	70	5,017	65	70	4,550	80	70	5,584	67	70	4,690			
November	72	70	5,017	65	70	4,550	80	70	5,584	67	70	4,690			
December	72	70	5,017	65	70	4,550	80	70	5,584	67	70	4,690			
<b>Total</b>	<b>883</b>		<b>\$61,827</b>	<b>838</b>		<b>\$58,688</b>	<b>997</b>		<b>\$69,796</b>	<b>881</b>		<b>\$61,686</b>	<b>1036</b>		<b>\$72,494</b>

**South Temiskaming Abattoir  
Custom Beef and Pork Killing Sales**

Month	Year 1		Year 2		Year 3		Year 4		Year 5						
	Fat Cattle Units	Killing Fee	Total Fees	Fat Cattle Units	Killing Fee	Total Fees	Fat Cattle Units	Killing Fee	Total Fees	Fat Cattle Units	Killing Fee	Total Fees			
January	11	\$70	\$770	14	\$70	\$980	105	\$70	\$7,329	11	\$70	\$770			
February	11	70	770	14	70	980	105	70	7,329	11	70	770			
March	108	70	7,526	16	70	1,120	120	70	8,376	13	70	910			
April	108	70	7,526	16	70	1,120	120	70	8,376	13	70	910			
May	14	70	980	18	70	1,260	135	70	9,423	14	70	980			
June	134	70	9,407	20	70	1,400	150	70	10,469	157	70	10,985			
July	134	70	9,407	20	70	1,400	150	70	10,469	157	70	10,985			
August	14	70	980	18	70	1,260	135	70	9,423	14	70	980			
September	108	70	7,526	16	70	1,120	120	70	8,376	13	70	910			
October	108	70	7,526	16	70	1,120	120	70	8,376	13	70	910			
November	108	70	7,526	16	70	1,120	120	70	8,376	13	70	910			
December	108	70	7,526	16	70	1,120	120	70	8,376	13	70	910			
<b>Total</b>	<b>964</b>		<b>\$67,471</b>	<b>200</b>		<b>\$14,000</b>	<b>1,496</b>		<b>\$104,695</b>	<b>442</b>		<b>\$30,929</b>	<b>128</b>		<b>\$8,960</b>

South Temiskaming Abattoir  
 Custom Beef and Pork Killing Sales

Beef: Cows and Fat Cattle

Month	Year 1			Year 2			Year 3			Year 4			Year 5		
	Cows	Fat Cattle	Total Fees	Cows	Fat Cattle	Total Fees	Cows	Fat Cattle	Total Fees	Cows	Fat Cattle	Total Fees	Cows	Fat Cattle	Total Fees
January	\$4,200	\$770	\$4,970	\$3,990	\$980	\$4,970	\$4,886	\$7,329	\$12,214	\$4,130	\$770	\$4,900	\$4,760	\$630	\$5,390
February	4,200	770	4,970	3,990	980	4,970	4,886	7,329	12,214	4,130	770	4,900	4,760	630	5,390
March	5,017	7,526	12,543	4,550	1,120	5,670	5,584	8,376	13,959	4,690	910	5,600	6,156	700	6,856
April	5,017	7,526	12,543	4,550	1,120	5,670	5,584	8,376	13,959	4,690	910	5,600	6,156	700	6,856
May	5,390	980	6,370	5,110	1,260	6,370	6,282	9,423	15,704	5,320	980	6,300	6,160	840	7,000
June	6,272	9,407	15,679	6,594	1,400	7,994	6,980	10,469	17,449	7,323	10,985	18,308	6,860	910	7,770
July	6,272	9,407	15,679	6,594	1,400	7,994	6,980	10,469	17,449	7,323	10,985	18,308	6,860	910	7,770
August	5,390	980	6,370	5,110	1,260	6,370	6,282	9,423	15,704	5,320	980	6,300	6,160	840	7,000
September	5,017	7,526	12,543	4,550	1,120	5,670	5,584	8,376	13,959	4,690	910	5,600	6,156	700	6,856
October	5,017	7,526	12,543	4,550	1,120	5,670	5,584	8,376	13,959	4,690	910	5,600	6,156	700	6,856
November	5,017	7,526	12,543	4,550	1,120	5,670	5,584	8,376	13,959	4,690	910	5,600	6,156	700	6,856
December	5,017	7,526	12,543	4,550	1,120	5,670	5,584	8,376	13,959	4,690	910	5,600	6,156	700	6,856
<b>Total</b>	<b>\$61,827</b>	<b>\$67,471</b>	<b>\$129,298</b>	<b>\$58,688</b>	<b>\$14,000</b>	<b>\$72,688</b>	<b>\$69,796</b>	<b>\$104,695</b>	<b>\$174,491</b>	<b>\$61,686</b>	<b>\$30,929</b>	<b>\$92,615</b>	<b>\$72,494</b>	<b>\$8,960</b>	<b>\$81,454</b>

South Temiskaming Abattoir Custom Beef and Pork Killing Sales												
Pork: Hogs	Month	Hog Units	Year 1		Year 2		Year 3		Year 4		Year 5	
			Killing Fee	Total Fees	Killing Fee	Total Fees	Killing Fee	Total Fees	Killing Fee	Total Fees	Killing Fee	Total Fees
	January	14	\$45	\$631	\$45	\$662	\$45	\$993	\$45	\$1,324	\$45	\$1,655
	February	14	45	631	45	630	993	993	45	1,324	45	1,655
	March	3	45	135	45	720	360	360	45	1,655	45	540
	April	14	45	631	45	720	993	993	45	1,324	45	1,655
	May	14	45	631	45	810	993	993	45	1,324	45	1,655
	June	14	45	631	45	900	993	993	45	1,324	45	1,655
	July	14	45	631	45	900	993	993	45	1,324	45	1,655
	August	14	45	631	45	810	993	993	45	1,324	45	1,655
	September	14	45	631	45	720	993	993	45	1,324	45	1,655
	October	2	45	90	45	720	315	315	45	1,489	45	495
	November	14	45	631	45	720	993	993	45	1,324	45	1,655
	December	2	45	90	45	720	315	315	45	1,489	45	495
	<b>Total</b>	<b>133</b>		<b>\$5,990</b>		<b>\$9,032</b>		<b>\$9,925</b>		<b>\$16,547</b>		<b>\$16,422</b>

**South Temiskaming Abattoir  
Custom Beef and Pork Killing Sales**

**Total Custom Beef and Pork Killing Revenue By Month**

<u>Month</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
January	\$5,601	\$5,632	\$13,207	\$6,224	\$7,045
February	5,601	5,600	13,207	6,224	7,045
March	12,678	6,390	14,319	7,255	7,396
April	13,174	6,390	14,952	6,924	8,510
May	7,001	7,180	16,697	7,624	8,655
June	16,310	8,894	18,442	19,631	9,425
July	16,310	8,894	18,442	19,631	9,425
August	7,001	7,180	16,697	7,624	8,655
September	13,174	6,390	14,952	6,924	8,510
October	12,633	6,390	14,274	7,089	7,351
November	13,174	6,390	14,952	6,924	8,510
December	12,633	6,390	14,274	7,089	7,351
<b>Total</b>	<b>\$135,287</b>	<b>\$81,720</b>	<b>\$184,416</b>	<b>\$109,162</b>	<b>\$97,877</b>

**South Temiskaming Abattoir****Fat Stock Sales****Number of Animal Units**

<u>Month</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
January	55	58	62	65	68
February	55	58	62	65	68
March	63	67	71	74	78
April	63	67	71	74	78
May	71	75	79	83	88
June	79	83	88	93	97
July	79	83	88	93	97
August	71	75	79	83	88
September	63	67	71	74	78
October	63	67	71	74	78
November	63	67	71	74	78
December	63	67	71	74	78
<b>Total</b>	<b>793</b>	<b>833</b>	<b>882</b>	<b>926</b>	<b>973</b>

**Fat Stock Sale Revenue**

Based on a price of \$2.00/pound

Boneless Boxed Beef 590 pounds

\$1,180 /AU

January	\$65,475	\$68,840	\$72,867	\$76,452	\$80,332
February	65,475	68,840	72,867	76,452	80,332
March	74,829	78,674	83,276	87,374	91,808
April	74,829	78,674	83,276	87,374	91,808
May	84,182	88,509	93,686	98,296	103,284
June	93,536	98,343	104,095	109,217	114,760
July	93,536	98,343	104,095	109,217	114,760
August	84,182	88,509	93,686	98,296	103,284
September	74,829	78,674	83,276	87,374	91,808
October	74,829	78,674	83,276	87,374	91,808
November	74,829	78,674	83,276	87,374	91,808
December	74,829	78,674	83,276	87,374	91,808
<b>Total</b>	<b>\$935,361</b>	<b>\$983,429</b>	<b>\$1,040,953</b>	<b>\$1,092,174</b>	<b>\$1,147,596</b>

**South Temiskaming Abattoir**
**Cow Sales**
**Number of Animal Units**

<u>Month</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
January	37	39	41	43	45
February	37	39	41	43	45
March	42	44	47	49	52
April	42	44	47	49	52
May	48	50	53	56	58
June	53	56	59	62	65
July	53	56	59	62	65
August	48	50	53	56	58
September	42	44	47	49	52
October	42	44	47	49	52
November	42	44	47	49	52
December	42	44	47	49	52
<b>Total</b>	<b>528</b>	<b>556</b>	<b>588</b>	<b>617</b>	<b>648</b>

**Cow Sales Revenue**

Based on a price of \$0.80/pound  
and a carcass weight of 689 pounds

\$551/AU

January	\$20,390	\$21,438	\$22,692	\$23,808	\$25,016
February	20,390	21,438	22,692	23,808	25,016
March	23,303	24,500	25,933	27,209	28,590
April	23,303	24,500	25,933	27,209	28,590
May	26,215	27,563	29,175	30,610	32,164
June	29,128	30,625	32,417	34,012	35,738
July	29,128	30,625	32,417	34,012	35,738
August	26,215	27,563	29,175	30,610	32,164
September	23,303	24,500	25,933	27,209	28,590
October	23,303	24,500	25,933	27,209	28,590
November	23,303	24,500	25,933	27,209	28,590
December	23,303	24,500	25,933	27,209	28,590
<b>Total</b>	<b>\$291,283</b>	<b>\$306,252</b>	<b>\$324,166</b>	<b>\$340,116</b>	<b>\$357,376</b>



**South Temiskaming Abattoir**  
**Pork Meat Sales**

**Number of Animal Units**

<u>Month</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
January	153	161	241	322	402
February	153	161	241	322	402
March	191	201	302	402	503
April	153	161	241	322	402
May	153	161	241	322	402
June	153	161	241	322	402
July	153	161	241	322	402
August	153	161	241	322	402
September	153	161	241	322	402
October	172	181	271	362	452
November	153	161	241	322	402
December	172	181	271	362	452
<b>Total</b>	<b>1915</b>	<b>2010</b>	<b>3015</b>	<b>4020</b>	<b>5025</b>

**Pork Meat Sales Revenue**

Based on a price of \$1.50/pound  
and a carcass weight of 182 pounds

\$273.00/AU

January	\$41,820	\$43,902	\$65,852	\$87,803	\$109,754
February	41,820	43,902	65,852	87,803	109,754
March	52,276	54,877	82,315	109,754	137,192
April	41,820	43,902	65,852	87,803	109,754
May	41,820	43,902	65,852	87,803	109,754
June	41,820	43,902	65,852	87,803	109,754
July	41,820	43,902	65,852	87,803	109,754
August	41,820	43,902	65,852	87,803	109,754
September	41,820	43,902	65,852	87,803	109,754
October	47,048	49,389	74,084	98,778	123,473
November	41,820	43,902	65,852	87,803	109,754
December	47,048	49,389	74,084	98,778	123,473
<b>Total</b>	<b>\$522,756</b>	<b>\$548,769</b>	<b>\$823,153</b>	<b>\$1,097,535</b>	<b>\$1,371,919</b>

**South Temiskaming Abattoir**  
**Hide Sales Revenue**

**Number of Animal Units**

<u>Month</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
January	249	262	277	291	306
February	249	262	277	291	306
March	285	300	317	333	350
April	285	300	317	333	350
May	320	337	357	374	393
June	356	374	396	416	437
July	356	374	396	416	437
August	320	337	357	374	393
September	285	300	317	333	350
October	285	300	317	333	350
November	285	300	317	333	350
December	285	300	317	333	350
<b>Total</b>	<b>3,561</b>	<b>3,744</b>	<b>3,963</b>	<b>4,158</b>	<b>4,369</b>

**Hide Sales Revenue**

Price per hide/\$30.00

January	\$7,478	\$7,862	\$8,322	\$8,732	\$9,175
February	7,478	7,862	8,322	8,732	9,175
March	8,546	8,986	9,511	9,979	10,486
April	8,546	8,986	9,511	9,979	10,486
May	9,615	10,109	10,700	11,227	11,796
June	10,683	11,232	11,889	12,474	13,107
July	10,683	11,232	11,889	12,474	13,107
August	9,615	10,109	10,700	11,227	11,796
September	8,546	8,986	9,511	9,979	10,486
October	8,546	8,986	9,511	9,979	10,486
November	8,546	8,986	9,511	9,979	10,486
December	8,546	8,986	9,511	9,979	10,486
<b>Total</b>	<b>\$106,830</b>	<b>\$112,320</b>	<b>\$118,890</b>	<b>\$124,740</b>	<b>\$131,070</b>

**South Temiskaming Abattoir  
Beef Kill Model**

**Total Animal Units**

<u>Month</u>	<u>%/Month</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
January	7%	249	262	277	291	306
February	7%	249	262	277	291	306
March	8%	285	300	317	333	350
April	8%	285	300	317	333	350
May	9%	320	337	357	374	393
June	10%	356	374	396	416	437
July	10%	356	374	396	416	437
August	9%	320	337	357	374	393
September	8%	285	300	317	333	350
October	8%	285	300	317	333	350
November	8%	285	300	317	333	350
December	8%	285	300	317	333	350
<b>Total</b>	<b>100%</b>	<b>3,561</b>	<b>3,744</b>	<b>3,963</b>	<b>4,158</b>	<b>4,369</b>

**South Temiskaming Abattoir  
Beef Kill Model**

**Owned Meat Versus Custom**

Month	Year 1		Year 2		Year 3		Year 4		Year 5	
	Owned 37%	Custom 63%	Owned 37%	Custom 63%	Owned 37%	Custom 63%	Owned 37%	Custom 63%	Owned 37%	Custom 63%
January	150	100	191	71	222	55	244	47	266	40
February	150	100	191	71	222	55	244	47	266	40
March	171	114	219	81	254	63	279	53	304	45
April	171	114	219	81	254	63	279	53	304	45
May	192	128	246	91	285	71	314	60	342	51
June	214	142	273	101	317	79	349	67	380	57
July	214	142	273	101	317	79	349	67	380	57
August	192	128	246	91	285	71	314	60	342	51
September	171	114	219	81	254	63	279	53	304	45
October	171	114	219	81	254	63	279	53	304	45
November	171	114	219	81	254	63	279	53	304	45
December	171	114	219	80	254	63	279	53	304	45
<b>Total</b>	<b>2,137</b>	<b>1,424</b>	<b>2,733</b>	<b>1,010</b>	<b>3,170</b>	<b>793</b>	<b>3,493</b>	<b>665</b>	<b>3,801</b>	<b>568</b>

		Year 1		Year 2		Year 3		Year 4		Year 5	
		Cows 40%	Fats 60%	Cows 40%	Fats 60%	Cows 40%	Fats 60%	Cows 40%	Fats 60%	Cows 40%	Fats 60%
<b>South Temiskaming Abattoir</b>											
<b>Beef Kill Model</b>											
<b>Cows Versus Fat Cattle</b>											
<u>Month</u>											
January	100	150	105	157	111	166	116	175	122	183	
February	100	150	105	157	111	166	116	175	122	183	
March	114	171	120	180	127	190	133	200	140	210	
April	114	171	120	180	127	190	133	200	140	210	
May	128	192	135	202	143	214	150	225	157	236	
June	142	214	150	225	159	238	166	249	175	262	
July	142	214	150	225	159	238	166	249	175	262	
August	128	192	135	202	143	214	150	225	157	236	
September	114	171	120	180	127	190	133	200	140	210	
October	114	171	120	180	127	190	133	200	140	210	
November	114	171	120	180	127	190	133	200	140	210	
December	114	171	120	180	127	190	133	200	140	210	
<b>Total</b>	<b>1,424</b>	<b>2,137</b>	<b>1,498</b>	<b>2,246</b>	<b>1,585</b>	<b>2,378</b>	<b>1,663</b>	<b>2,495</b>	<b>1,748</b>	<b>2,621</b>	

**South Temiskaming Abattoir  
Beef Kill Model**

**Owned Versus Custom Cow Numbers**

Month	Year 1		Year 2		Year 3		Year 4		Year 5	
	Owned	Custom	Owned	Custom	Owned	Custom	Owned	Custom	Owned	Custom
January	37	63	39	66	41	70	43	73	45	77
February	37	63	39	66	41	70	43	73	45	77
March	42	72	44	75	47	80	49	84	52	88
April	42	72	44	75	47	80	49	84	52	88
May	48	81	50	85	53	90	56	94	58	99
June	53	90	56	94	59	100	62	105	65	110
July	53	90	56	94	59	100	62	105	65	110
August	48	81	50	85	53	90	56	94	58	99
September	42	72	44	75	47	80	49	84	52	88
October	42	72	44	75	47	80	49	84	52	88
November	42	72	44	75	47	80	49	84	52	88
December	42	72	44	75	47	80	49	84	52	88
<b>Total</b>	<b>528</b>	<b>896</b>	<b>556</b>	<b>942</b>	<b>588</b>	<b>997</b>	<b>617</b>	<b>1,046</b>	<b>648</b>	<b>1,099</b>
<b>Total Cows/Year</b>	<b>1,424</b>		<b>1,498</b>		<b>1,585</b>		<b>1,663</b>		<b>1,748</b>	

**South Temiskaming Abattoir  
Beef Kill Model**

**Owned Versus Custom Fat Cattle Numbers**

Month	Year 1		Year 2		Year 3		Year 4		Year 5	
	Owned	Custom	Owned	Custom	Owned	Custom	Owned	Custom	Owned	Custom
January	55	94	58	99	62	105	65	110	68	115
February	55	94	58	99	62	105	65	110	68	115
March	63	108	67	113	71	120	74	126	78	132
April	63	108	67	113	71	120	74	126	78	132
May	71	121	75	127	79	135	83	141	88	148
June	79	134	83	141	88	150	93	157	97	165
July	79	134	83	141	88	150	93	157	97	165
August	71	121	75	127	79	135	83	141	88	148
September	63	108	67	113	71	120	74	126	78	132
October	63	108	67	113	71	120	74	126	78	132
November	63	108	67	113	71	120	74	126	78	132
December	63	108	67	113	71	120	74	126	78	132
<b>Total</b>	<b>793</b>	<b>1,344</b>	<b>833</b>	<b>1,413</b>	<b>882</b>	<b>1,496</b>	<b>926</b>	<b>1,569</b>	<b>973</b>	<b>1,649</b>
<b>Total Fats/Year</b>		<b>2,137</b>		<b>2,246</b>		<b>2,378</b>		<b>2,495</b>		<b>2,621</b>
<b>Total Beef</b>		<b>3,561</b>		<b>3,744</b>		<b>3,963</b>		<b>4,158</b>		

**South Temiskaming Abattoir  
Pork Kill Model**

**Total Animal Units**

<u>Month</u>	<u>%/Month</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
January	8%	167	176	263	351	439
February	8%	167	176	263	351	439
March	10%	209	219	329	439	548
April	8%	167	176	263	351	439
May	8%	167	176	263	351	439
June	8%	167	176	263	351	439
July	8%	167	176	263	351	439
August	8%	167	176	263	351	439
September	8%	167	176	263	351	439
October	9%	188	197	296	395	494
November	8%	167	176	263	351	439
December	9%	188	197	296	395	494
<b>Total</b>	<b>100%</b>	<b>2,090</b>	<b>2,194</b>	<b>2,304</b>	<b>2,420</b>	<b>2,541</b>



**South Temiskaming Abattoir  
Pork Kill Model**

**Owned Meat Versus Custom**

Month	Year 1		Year 2		Year 3		Year 4		Year 5	
	Owned 92%	Custom 8%	Owned 92%	Custom 8%	Owned 92%	Custom 8%	Owned 92%	Custom 8%	Owned 92%	Custom 8%
January	153	14	161	15	241	22	322	29	402	37
February	153	14	161	15	241	22	322	29	402	37
March	191	18	201	18	302	28	402	37	503	46
April	153	14	161	15	241	22	322	29	402	37
May	153	14	161	15	241	22	322	29	402	37
June	153	14	161	15	241	22	322	29	402	37
July	153	14	161	15	241	22	322	29	402	37
August	153	14	161	15	241	22	322	29	402	37
September	153	14	161	15	241	22	322	29	402	37
October	172	16	181	17	271	25	362	33	452	41
November	153	14	161	15	241	22	322	29	402	37
December	172	16	181	17	271	25	362	33	452	41
<b>Total</b>	<b>1,915</b>	<b>175</b>	<b>2,010</b>	<b>184</b>	<b>3,015</b>	<b>276</b>	<b>4,020</b>	<b>368</b>	<b>5,025</b>	<b>460</b>

**APPENDIX A**  
**QUEBEC LIVESTOCK STATISTICS**

**APPENDIX B**  
**LIST OF STORES &**  
**MEAT MARKETSSURVEYED**

**APPENDIX C**  
**SPECIFIED RISK MATERIALS**

**APPENDIX D**  
**ROTHSAY – PRESS RELEASE**

**APPENDIX E**  
**BEST MANAGEMENT PRACTICES**

**APPENDIX F**  
**K. SMART ASSOCIATES LTD.**

**APPENDIX G**  
**HYDRO ONE ESTIMATE**