

# **Feasibility Study for a Poultry Abattoir in Frontenac County, Ontario**

## **Executive Summary**

**POULTRY ABATTOIR REVIEW COMMITTEE**

**April 20, 2011**



**Expansion Stratégies inc.**

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## Mandate

- To establish if there is a place where an abattoir could be established that is not much farther than a one hour drive from the majority of the users
- To establish if there are a sufficient number of birds to put this abattoir on a profitable basis.

# Methodology

- Survey the farmers in the region
- Select a preferred location
- Design a layout adapted to the needs
- Perform the financial analysis
- Discuss the alternatives
- Make recommendations

# Survey: Poultry Production - 2011

What is your expected production of poultry in 2011 ?

Description	Total Chicken	Total	Total Ducks	Total Others*
Production	4,035	333	82	882
Slaughtered by farmer	591	20	50	80
Slaughtered at an abattoir	3,444	313	32	802

\*Layers, Geese, Guinea Hens etc.

# Survey: Poultry Sales - 2011

## Slaughter Calendar

Description	Chicken	Turkey
January - March	3 %	
April - June	13 %	
July-September	49 %	30 %
October - December	35 %	70 %

## Sales By Type

Description	Chicken	Turkey
Fresh - whole	100 %	100 %
Frozen – whole	88 %	100 %
Frozen – cut	12 %	

# Survey: Interest for an Abattoir

<b>Level of Interest</b>	Definitely	70 %
	Likely	6 %
	Probably	9 %

## Future Production

Chicken			Turkey		
Now	Future	%	Now	Future	%
4,035	7,365	83 %	333	726	118 %

## Sales By Type

Description	Chicken		Turkey	
	Now	With Abattoir	Now	With Abattoir
Fresh - whole	100 %	94 %	100 %	95 %
Fresh - cut		6 %		5 %
Frozen – whole	88 %	85 %	100 %	99 %
Frozen – cut	12 %	15 %		1 %

# Survey: Expected Services

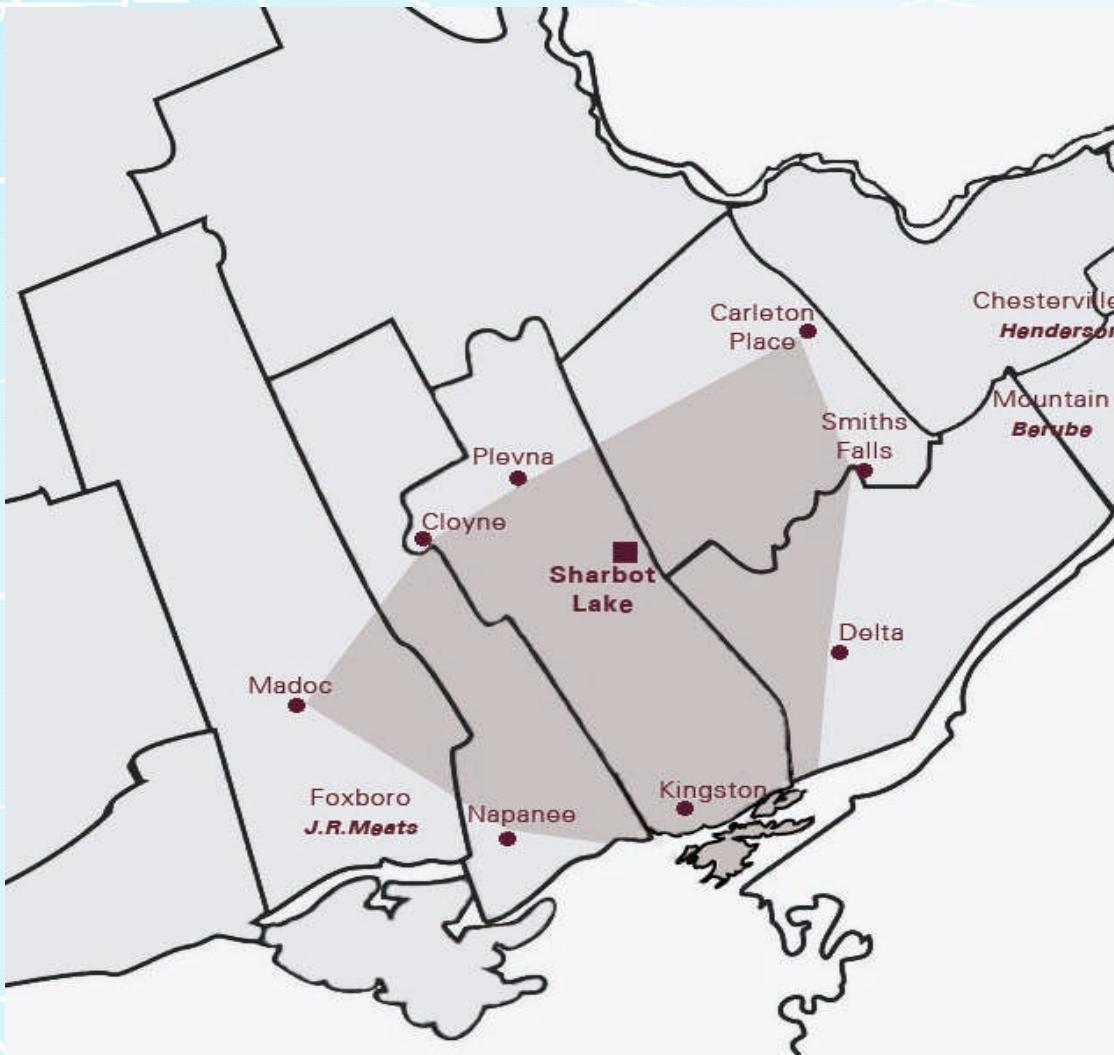
Services	Percentage
Scheduling appointments	94 %
Cut up birds	73 %
Customized packaging	53 %
Blast freezing	45 %
Conventional freezing	65 %
Weighing	83 %
Pricing & Labelling	68 %

# Market Potential

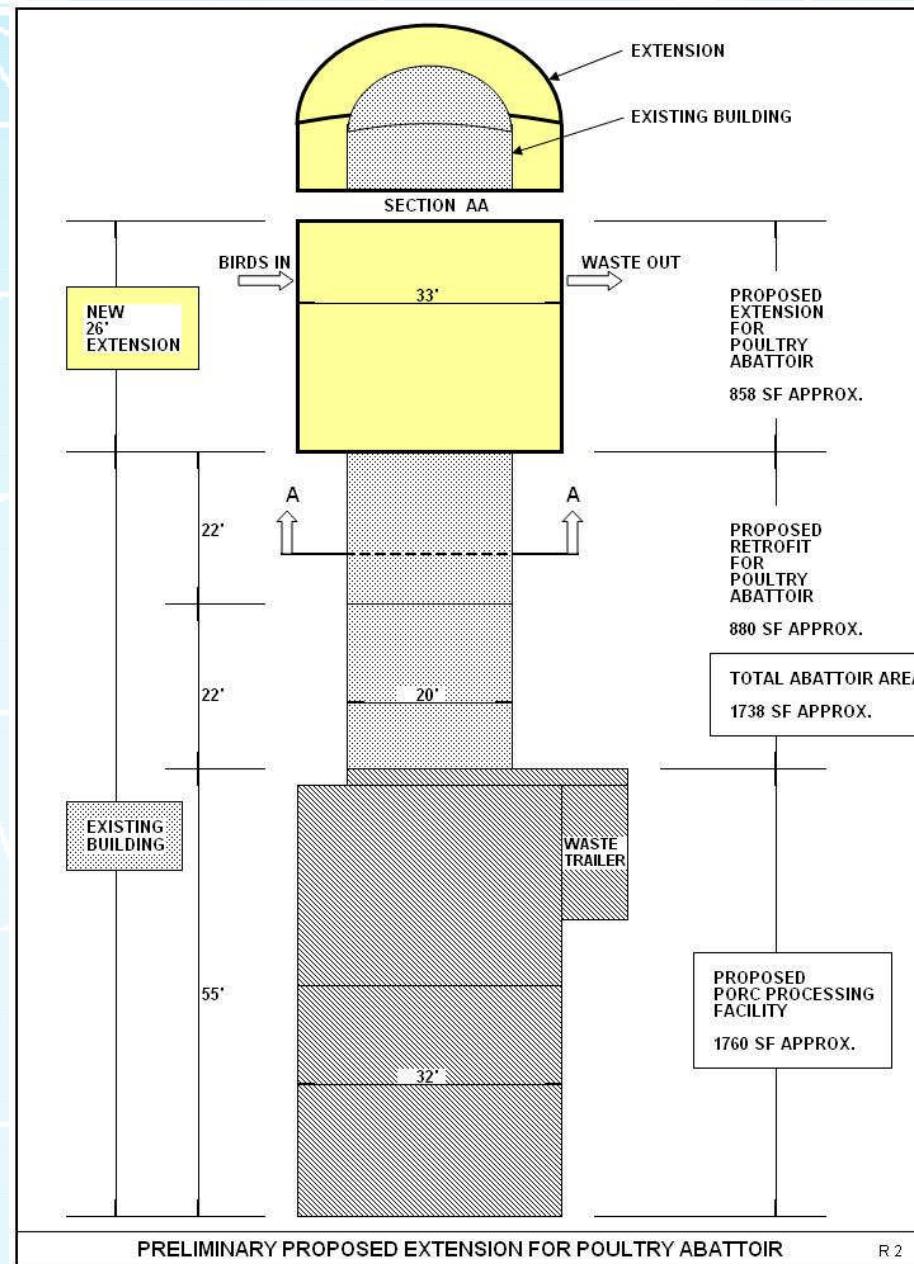
Numbers	Evaluation of Present Volume	Evaluation of Present Potential	Estimate of Future Volume	Estimate of Future Potential
Farms	200	200	300	300
Chickens	28,800	60,000	55,200	90,000
Turkeys	2,400	10,000	5,400	15,000
Ducks	79	Not included	2100	Not included
Others	882	Not included	3,938	Not included
Birds total	32,802	70,000	66,638	105,000



# Primary Market Area and Competition



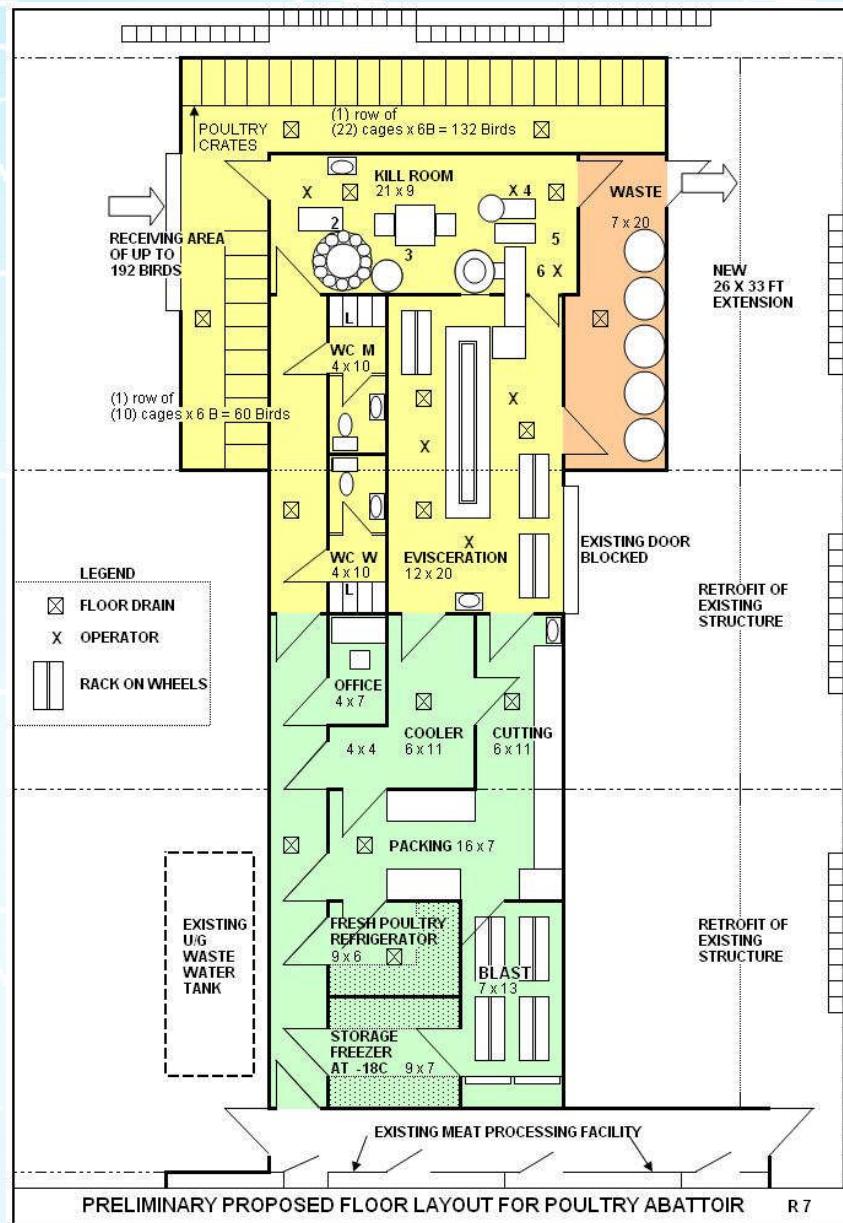
# Proposed Extension



# Process Flow Diagram

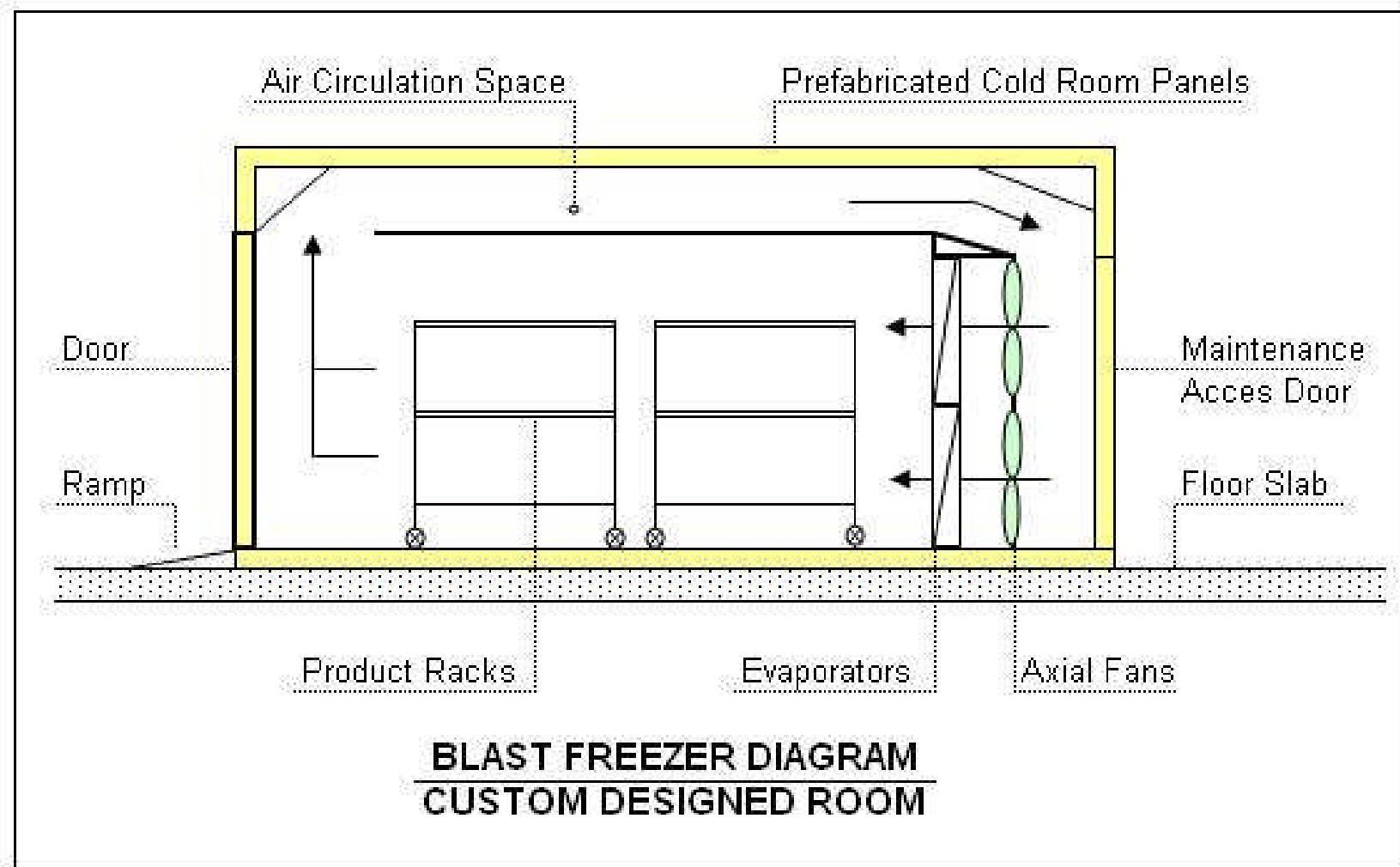
Input Data	Clean areas	Process Areas	Staff	Dirty Areas
Poultry/year : 50,000. Operation period: 6 months Poultry/month: 8,333 Poultry/day: 378 Process flow/hr : 47 birds Process flow/min: 1.3 bird				
6 BIRDS/ CRATE 32 CRATES OF 3'X 1.5' 192 BIRDS FOR 50% of total capacity approx.				
12 CONE KILLING STAND 4 POULTRY/hr / CONE				
HOT WATER DIP				
DEFEATHERING				
BURNING RESIDUAL HAIR				
HOT WATER CYCLOMATIC				
1 MAN x 47 POULTRY/hr 2 MEN x 24 POULTRY/hr 3 MEN x 16 POULTRY/hr				
COLD WATER, REFRIGERATOR				
OPTIONAL : HALF CHICKEN DEBONED BREASTS				
VACUUM PACKING OR				
LOOSE PACKING FOR FRESH PICK-UP				
OPTIONAL : BLAST FREEZING 2 or 3 DAILY BATCHES				
OVERNIGHT FREEZER				
AT PLANT SHOP				
		1 RECEIVING TRACING WASHING CLEANING	1	
		2 SLAUGHTER		BLOOD
	KILL ROOM	3 SCALDING		
		4 PLUCKING	1	FEATHERS
		5 SINGEING		
		6 WASHING	1	
		7 EVISCERATION		HEADS INTERNAL ORGANS
		COOLING	2	
		CUTTING		Skin Bones
		PACKING		
		FRESH REFRIGERATOR		
		BLAST @ -40°C		
		STORAGE @ -18°C	2	
		DELIVERY		
			Total Staff :	7

# Proposed Floor Layout



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# Blast Freezing Diagram



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# Construction Budget – Sharbot Lake

## CONSTRUCTION BUDGET ( SHARBOT LAKE, 1738 Sq. ft. )

	Budget \$	Total \$
<b>Architecture, Structure, internal retrofit</b> Prefabricated steel extension, slab on grade, retrofit of existing areas Sub-total	74,500	74,500
<b>Plumbing</b> New floor drains, sinks, WCs, hot & cold water outlets Sub-total	40,500	40,500
<b>HVAC</b> Air conditioning of Kill Room, office, corridor Ventilation of ceiling space, receiving area, WCs Sub-total	5,052 6,408	11,460
<b>Electrical</b> Lighting and services, power distribution, upgrade of electrical entrance Sub-total	24,856	24,856
<b>Process Fit-up</b> Prefabricated cold rooms panels + air-cooled refrigeration compressors and condensers for the following rooms: Waste, Evisceration, Cooler, Cutting, Packing, Fresh Fridge, Blast and Storage Freezer at -18C Process equipment and furnishings for: kill room, Evisceration, Waste, bird crates, work benches, portable product racks, bins, etc. Sub-total	119,100 49,150	168,250
<b>Subtotal for Extension and Retrofit of Existing Areas</b>		319,566
<b>Contingencies, Design Fees and Contractor Overhead &amp; Profit</b> Contingency 30% Design 7% Contractor General Conditions 5% Contractor Overhead and Profit 3%	95,870 29,081 22,226 14,002 161,178	
<b>Grand Total (excluding HST)</b> Cost per square foot for 1738 Sq. ft. of expansion		480,744 277



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# Construction Budget – New Site

CONSTRUCTION BUDGET ( NEW SITE, 2000 Sq. ft. )		Budget \$	Total \$
<b>Architecture, Structure, internal partitions</b>			
Land cost, (2) acres minimum (87,120 SF)		87,120	
Prefabricated steel structure shell & slab on grade		100,000	
Paved accesses, landscaping, fencing, signage		170,240	
Architectural internal fit-up, partitions and hardware		30,150	
Sub-total			387,510
<b>Plumbing</b>			
New floor drains, sinks, WCs, hot & cold water outlets		40,500	
Liquid waste pump-out, potable water well		20,000	
Sub-total			60,500
<b>HVAC</b>			
Air conditioning of Kill Room, office, corridor & lobby		6,252	
Ventilation of ceiling space, receiving area, WCs, dry storage room		7,880	
Sub-total			13,932
<b>Electrical</b>			
Lighting and services, power distribution, upgrade of electrical entrance		28,000	
Sub-total			28,000
<b>Process Fit-up</b>			
Prefabricated cold rooms panels + air-cooled refrigeration compressors and condensers for the following rooms: Waste, Evisceration, Cooler, Cutting, Packing, Fresh Fridge, Blast and Storage Freezer at -18C		119,100	
Process equipment and furnishings for: kill room, Evisceration, Waste, bird crates, work benches, portable product racks, bins, etc.		49,150	
Sub-total			168,250
<b>Subtotal</b>			658,192
<b>Contingencies, Design Fees and Contractor Overhead &amp; Profit</b>			
Contingency 30%		197,458	
Design 7%		59,895	
Contractor general conditions 5%		45,777	
Contractor overhead and profit 3%		28,840	
			331,970
<b>Grand Total (excluding HST)</b>			990,162
Average cost per square foot of 2000 Sq. ft. of building including a property of 2 acres			495



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# Operating Budget – Sharbot Lake

Operating Budget		( Sharbot Lake Site Extension only )				R 7	
ITEMS	Details	Units	Unit Cost	Area Sq.ft.	Cost \$ / year	Total \$ / year	Cost / Sq. ft.
<b>General Expenses</b>							
Municipal Taxes	Assumed, to be validated				2,500		
School Taxes							
General insurance					1,500		
Sub-total						4,000	
<b>Maintenance of Building Shell</b>							
Doors and windows						500	
Metal siding							
Caulking							
Roof Maintenance							
<b>Outdoor Maintenance</b>							
Snow removal and maintenance of paved access roads						500	
Maintenance of landscaping						500	
<b>Environmental</b>							
Disposal of animal waste						3,000	
Disposal of liquid waste						3,000	
<b>Hydro</b>							
Heating and hot water			1	1,738	1,738		
Lighting, services, and process (6 month operation)		6	1,738	10,428			
Sub-total						12,166	
<b>Management</b>							
Manager for administration and marketing	By Owner of Sharbot Lake				included		
Manpower : ( 7 ) workers	6 months x 22 d/m x 8h/d @ \$ 14/hr				103,488		
Marketing Tools (15% of annual turnover)	50,000 chicken x \$5. average	250,000	15%		37,500		
Packing Products		50,000	0.10		5,000		
Other Products: cleaning agents, waste disposal bins, etc.					3,000		
Plumber, electrician, refrigeration technician ( 6 hre/m x 12 m/a x 45 \$/hre )	on call				3,240		
Repair costs					3,000		
Annual financial statement					1,000		
Sub-total						156,228	
<b>GRAND TOTAL</b>					179,894	103.51	



# Operating Budget – New Site

Operating Budget		( New Site )			R 7		
ITEMS	Details	Units	Unit Cost	Area Sq.ft.	Cost \$ / year	Total \$ / year	Cost / Sq.ft.
<b>General Expenses</b>							
Municipal Taxes	Assumed,				5,000		
School Taxes	to be validated						
General Building Insurance					1,500		
Sub-total						6,500	
<b>Maintenance of Building Shell</b>							
Doors and windows						500	
Metal siding							
Caulking							
Roof Maintenance							
<b>Outdoor Maintenance</b>							
Snow removal and maintenance of paved access roads						500	
Maintenance of landscaping						500	
<b>Environmental</b>							
Disposal of animal waste						3,000	
Disposal of liquid waste						3,000	
<b>Hydro</b>							
Heating and hot water			1	2,000	2,000		
Lighting, services, and process	(6) month operation	6	2,000	12,000			
Sub-total						14,000	
<b>Management</b>							
Manager for administration and marketing	By Owner				20,000		
Manpower : ( 7 ) workers	6 months x 22 d/m x 8h/d @ \$ 14/hr				103,488		
Marketing Tools (15% of annual turnover)		250,000	15%		37,500		
Packing Products		50,000	0.10		5,000		
Other Products: cleaning agents, waste disposal bins, etc.					3,000		
Plumber, electrician, refrigeration technician ( 6 hre/m x 12 m/a x 45 \$/hre )	on call				3,240		
Repair costs					3,000		
Annual report					1,000		
Sub-total						176,228	
<b>GRAND TOTAL</b>					204,228	102.11	



# Estimation of Revenues

An average price of \$ 4.75/chicken is used

Year	Number of birds	Revenues
1	25,000	\$118,750
2	30,000	\$142,500
3 and after	50,000	\$237,500

# Financing Scenario - Sharbot Lake Site

Equity Investment		Grant		Loan	Total
20%	\$ 96,149	0	-	\$ 384,595	\$ 480,744
20%	\$ 96,149	20%	\$ 96,149	\$ 288,446	\$ 480,744
20%	\$ 96,149	40%	\$ 192,298	\$ 192,298	\$ 480,744



# Profit (Loss) Situation – Sharbot Lake

	Grant level	Year 1	Year 2	Year 3 +
<b>Revenues</b>		<b>\$ 118,750</b>	<b>\$ 142,500</b>	<b>\$ 237,500</b>
Operating Cost		\$ 109,400	\$ 123,4998	\$ 179,894
Loan repayment	0	\$ 38,945	\$ 38,945	\$ 38,945
	20%	\$ 29, 209	\$ 29, 209	\$ 29, 209
	40%	\$ 19,473	\$ 19,473	\$ 19,473
Profit ( loss)	0	\$ (29,595)	\$ (19,944)	\$ 18,6611
	20%	\$ (19,859)	\$ (10,208)	\$ 28,397
	40%	\$ (10,123)	\$ (472)	\$ 38,133



# Break-even Situation – Sharbot Lake

Break-even price at 25,000 birds - Sharbot Lake Site

Grant Level	0	20%	40%
Operating Cost + loan repayment	\$ 148,345	\$ 138,609	\$ 128,873
Break-even Price	\$ 5.93	\$ 5.54	\$ 5.15

# Economic and Social Impact

**Direct employment of seven (7) new jobs for 26 weeks at the plant with possibility for additional jobs depending on the other birds to be slaughtered and processed**

**Increased revenues for the farmers. After three years, the volume of sales at the farm level could reach approximately one million dollars**

**Response to the growing demand for locally grown poultry**

**A strong contribution to the National Farmers Union Local 316 to its objective of strengthening the local food system in the Kingston Area**

**An image building initiative to promote the Frontenac County development effort**

# Conclusions and Recommendations

## Conclusions

**The viability of the Sharbot Lake Site is established on the premise:**

- a) that this abattoir would be the primary server to the farmers of the region**
- b) that the major portion of the chickens in its vicinity would be slaughtered there**
- c) that there would be a minimum of 30,000 chickens available to the abattoir**

## Recommendations

**Sharbot Lake Plant should also be used to slaughter other birds for other markets**

**The Plant should consider the use of the new addition to supply chicken meat to augment its line of processed products**

