Business Plan

NW New Jersey Meat Processing Innovation Center

Conducted for:

NW New Jersey Meat Processing and Innovation Center

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November 2023

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Section 1 Executive Summary

NW New Jersey Food Processing and Innovation (herein referred to as FPIC) non-profit company based in Oxford, NJ planned by businessman, Richard Cotton. A newly designed greenfield meat processing plant will be built largely with targeted donated funds and built on Warren County land.

The company will provide:

a) Processing services to livestock producers and meat marketing companies.

b) Fresh and frozen subprimals, ground products, some portion-cut items, further processed items (curing, smoking, sausage and bone-broth manufacture), edible offal, and byproducts from beef and hogs and lambs. Also, fresh, and frozen halves and whole lamb and goat carcasses. All beef, lamb and goat will be certified Halal for those consumers desiring ritual certified meat.

c) A location for training community college students, vocational agriculture students and culinary institute students.

Warren County has a relatively small population, but it is near large population centers for a massive customer base all while being in a rural setting suitable for small farms. Farmers across New Jersey are disenchanted about the lack of suitable meat processing capacity and claim it is limiting the number of livestock they can produce.

A beef plant sized at approximately 32,000 sq. ft. (including livestock pens) has the capability to harvest, de-bone, portion-cut, grind, and package beef, pork, and lamb. It is also capable of further processing beef and pork and can process whole lamb and goat carcasses for retail and wholesale. The plant has been preliminarily designed and will be located on Warren County land. The plant will be capable of processing 4,200 beef cattle, 1,200 hogs, and 7,200 lambs and goats per year. It is expected that approximately 50% of the livestock processed will be custom processed as a service to regional livestock producers. The plant will also serve as training for the community college and local vocational programs with a classroom designed into the plant. The estimated cost to build and equip this plant is estimated to be approximately $10 million. The plant is expected to employ approximately 37 employees. Working capital needs are estimated at $1.4 MM. The sources of funds to meet the capital requirements will be a combination of charitable gifts and debt.

The company is projected to have a negative EBITDA (-347,000) with a negative Net Income (-$1.3 M) in its first year of operation. In the second year, EBITDA increases to $1.4 M and Net Income becomes positive at $410,000. The plant is projected to begin

cash flowing in month 22 of operation. When the plant is fully ramped up, the third year performance is projected to yield an EBITDA of $2.1 M with Net Income at $1.2 M. In Year 3, the Return on Sales (ROS) is projected to be 12 % and a Return on Equity (ROE) is 24 %; both ratios are outstanding for a food business.

Beginning the second year of operation, all species of animals resulted in positive net income as custody animals (animal purchased and meat sold by company) and custom processed for a fee. In the third year, the net income per animal processed increased significantly.

The plant will do well financially if it can attract sufficient direct and indirect labor and keep processing the numbers of livestock the plant was designed for.

Section 2 Introduction

Throughout the U.S., there are declining and limited resources for livestock producers who desire to process and merchandise meat from their own livestock. Even though there are many small meat processing plants in New Jersey and Pennsylvania (see Section 3), they are not meeting the demand in the region. Most of these plants are very small and currently are booked up for an extended period of time.

Mr. Richard Cotton, real estate developer, livestock producer, and businessman is organizing a meat processing business in Oxford Township, NJ. The processing company is legally organized as a 501 C-3 Corporation and is called NW New Jersey Food Processing and Innovation Center (herein referred to as FPIC). Warren County owns 12 acres near their landfill and intends to host the facility. They will execute a long-term land lease of the facility to FPIC. This township only has a population of 2,500 people according to the 2010 census; however, it is in close proximity to the New York City and Newark metropolitan areas.

The new plant will be designed as a multiple-species plant for 25 beef equivalents (3 hogs = 1 B.E. and 6 lambs = 1 B.E per day). It will operate under the purview of USDA FSIS inspection and food-safety requirements with an on-site inspector. This plant will focus on harvest, processing, and further processing of beef cattle (both under and over 30 months of age), hogs, lambs, and goats. Also, the plant will sell services to other producers (custom processing) for a fee. All custody meat products processed will be sold via wholesale channels. The plant will likely be certified Halal to accommodate customers desiring ritual slaughter. The plant is too small to accommodate Kosher harvest. The plant will also be a training center for Oxford Community College, the Culinary Institute, and Vocational Ag programs.

Food and Livestock Planning, Inc., who specializes in business planning for meat processing plant start-ups and start-overs was engaged to conduct the business plan and provide technical assistance if the plan moves towards execution.

Section 3 Proposed Marketing Plan

3.1 Target Markets

The plant's primary income will be derived from the following:

d) Selling processing services to livestock producers and meat marketing companies.

e) Selling fresh and frozen subprimals, ground products, some portion-cut items, further processed items (curing, smoking, and sausage manufacture), edible offal, and byproducts from beef, hogs, and lambs. Also, selling fresh and frozen halves and whole lamb and goat carcasses.

Under (b) above the target markets will be:

i) Local and regional retail

Most grocery retail stores desire or leave space to purchase "local" products even though they have contracts with and are served by a larger wholesale distributor. There may be a retail store in the community where the plant is located for featuring beef products from the plant. A business relationship could be developed so where this retail store could be the exclusive supplier of the plant's products within a geographical region of the plant.

As mentioned, most retail grocers are part of a chain and are served by a wholesale distributor. Distributors could and should be approached about this plant's branded meats program once it is determined how much supply could be directed to their chains.

ii) Local and regional food service.

Local restaurants also have an interest in buying "local" and are served by either national (i.e., Sysco, US Foods, Performance Food Group) or regional foodservice distributors. Contacts can be made with the distributor or the restaurant itself.

Institutional food service (schools, hospitals) is an optional market destination, but these institutions often leave all decisions up to their distributor.

iii) Direct to consumer

There are two direct-to-customer markets: Home delivery and internet sales. It is difficult to begin selling a new program to either of these markets. Once a company

has an established name and reputation, these two market approaches could be considered an additional means of selling products.

3.2 Products to be Marketed

Under number (b) above, the following products will be manufactured and made available to be purchased by customers: These products will be labeled as a new branded meat program.

- Fresh beef, pork, and lamb subprimals.
- Fresh and frozen portion cut steaks.
- Ground beef, ground pork, ground chuck, and ground round chubs and patties.
- Seasoned and pumped roasts (approximately 4 lb.) (ready for the oven or crock pot).
- Cured and smoked bacon and hams.
- Smoked sausages (beef, pork and lamb)
- Frozen beef and some pork offal and variety meats (oxtail, tongue, liver, cheek meat, etc.).
- Lard and tallow
- Bone broth
- Whole lamb and goat carcasses
- Fresh beef hides
- Fresh beef and pork trimmings

3.3 Features/Benefits to Products

The three largest features to products sold from this future plant are:

- The plant is a non-profit company designed for the benefit of supplying producers, students learning about the meat industry, and focused on high quality workmanship and product quality.
- The plant has multifaceted functions processing beef, pork, lambs, and goats raised in the local area into a variety of different products for wholesale, retail, and food service.
- The plant will serve as an outlet for USDA-inspected meat processing services to local livestock producers. This, in turn, could allow producers to expand their operations, increasing the economic base in the local community.

Marketing is the portraying of an image and promoting and selling a perception of that image. To understand market potential, a company must become familiar with and understand the market it is pursuing. This company's products have several unique features, attributes, and benefits (FABS) placing them in a specialized market of their own and allowing their products to appeal to a wide variety of customers.

The American consumer has compassion for farmers, especially local farmers. The "locally produced" family-farmer connection is a valuable marketing tool. Most consumers support small and medium-sized beef producers, who add to their rural communities, not detract from them. Appropriately scaled operations lead to better environmental protection, a more diverse agricultural base, safe and fair working conditions, and stronger rural communities.

One segment of this business plan is the production, processing, and marketing of the combination of "Natural" and "Halal" and will be described in detail in sections 3.4 and 4.2.5.

Features/Benefits include:

- Meat products produced in a new small state-of-the-art, hygienic plant that is not geared to making excessive profits.
- Meat products produced in New Jersey and Pennsylvania by local people the customers know and trust.
- Money earned would be kept locally, having a multiplication effect on the local economy.
- Meat products could be received fresh or freshly frozen.
- Fast delivery due to close proximity of supplier.
- Communication between customer and supplier could be simple and easy.
- A small and manageable animal supply improves consistency and quality due to specific genetics and management.
- Beef and lamb product offering of "Natural" and "Halal". Natural is defined in this market programs as no antibiotics and growth-promotant hormones. Halal is described below in the next Section.

Market plan execution:

- Attractive labels should be developed with mock-ups tested at some retail establishments to gauge potential customer appeal.

- Brokers may or may not be needed for selling to customers. For large distribution companies, the credibility a broker can give to a product(s) can be valuable. For local restaurants, resorts and grocery stores, a more personal one-on-one approach from a company representative is beneficial.

- Point of sale material (POS) should be developed detailing all FABS of the MPIC products.

- In-store sampling, restaurant featuring, and product demonstrations should be used as sales/promotion tools.

3.4 Religious Markets

The two most notable markets from religious harvest certification are Kosher (Jewish) and Halal (Muslim). Medium-sized beef packers in the U.S., South America, and Europe will often employ these certifications to market at a premium to markets demanding these types of products. It likely will be too difficult in this small plant to warrant Kosher harvest because only the front quarter of the animal qualifies leaving too little volume to justify the extra cost of certification. However, with Halal harvest, the entire carcass qualifies.

The following are the criteria for several Halal certifying agencies:

a) Muslim slaughterman (trained by certifying body) performing the slaughter and oversight.
b) Tasmiyah (“Bismillah”, in the name of God) said at time of slaughter.
c) Complete horizontal cut across the neck, cutting from the side of the neck to the other side. Cutting through arteries, veins, esophagus, and trachea.
d) Spinal column and head left intact.
e) Utilization of a Halal certifying body designated sharp knife (without nicks) and cleaning of the knife between animals. Preferred method is one swift cutting motion.
f) Stunning (pneumatic or captive bolt) may be used immediately post-cut if necessary although not preferred.
g) If the animal is captive bolt stunned pre-cut, the animal is not deemed for Halal use and is to be tagged and segregated.
h) Halal slaughtered beef is to be marked with the certifying body’s inspection stamp or the certifying body’s approved Halal identification mark for tracking through hanging/fabrication process.
i) Halal slaughtered beef is to be segregated/distinguished from other religiously or non-religious slaughtered cattle and carcasses in coolers/freezers.

j) Final product to be designated Halal through identification either on master case shipping label or a separate Halal certifying body designated logo sticker on the product identifying product as Halal.
k) Domestic Halal Certificate issued by Halal certifying body to accompany shipments of beef for domestic consumption and/or further processing in the U.S.

Note: *The accompanying financial models to this business plan do include an option to include Halal certified products and the possible premiums stemming from them.*

3.5 Promotion and Marketing Budgets

Because this plant is completely new to the area, promotion and marketing should alert new, potential customers to its existence. Print advertising in local newsprint would be advisable as well as state livestock publications to alert producers of a new outlet with which to have animals custom butchered and processed. Local radio may be a good advertising resource as well.

With plant-owned meat available to the public for purchase, an attractive label should be produced for them. To alert the public of processed meat products and carcass or partial carcass bundles for sale, introductory print or radio advertising would also be advised. To develop and print labels and conduct some initial advertising announcing the opening of the plant, a very high annual budget ($77,000) was used for modeling purposes.

3.6 Storage of Meat for Customers

Traditionally, the local “locker plant” concept is described as a small plant offering long-term storage for customer’s meat by serving as a frozen meat locker. Long-term meat storage is expensive and would require the plant to have much more freezer capacity than if the customer were required to pick up their meat within a week of processing. The plant will be designed to store frozen and fresh refrigerated meat beyond a week, but an emphasis will be for plant operations and customers is to move the boxed products out as quickly as possible and a good target is less than 7 days.

3.7 Competition

There are six USDA-inspected beef plants within 100 miles of Oxford Township, NJ

Table 3.7 USDA-inspected Beef Plants within 100 miles of Oxford Township, NJ

Facility location	Distance from Oxford, NJ
Lehigh Valley Meats, Nazareth, PA	22
Kingdom Provisions, Pipersville, PA	36
Springfield Meat Co., Richardtown, PA	41
Pasquilchio Bros., Scranton, PA (NOTE: they do not harvest, only process)	66
Mecca Halal, New York City, NY (sell Halal beef, lambs, and goats in NYC	78
ENA Packers, New York City, NY (sell Halal beef, lambs, and goats in NYC)	78
Azis Halal, New York City, NY (sell Halal beef, lambs, and goats in NYC)	78

All of the plants listed above are small and have limited availability for custom processing for customers within the next 12 months. Some of this extended wait time for processing was due to the Covid – 19 pandemic to where customers were stocking up on meat where they know if is processed in smaller plants from people they trust. However, most of these plants normally have about four to five months of wait times but the pandemic caused the wait times to more than double. Even in a normal situation, the demand for custom processing services and locally produced and processed meat exceeds capacity.

Therefore, the need for custom processing capacity far exceeds the supply of plants able to provide this service.

3.8 Good Will

This company will also be able to market its “Good Will”. Warren County Community College has a Culinary Institute program, and this new plant will be used to assist in training the students about meat quality, buying standards, and meat cutting skills. The Vocational Agriculture programs in the region will be utilizing the facility for training of meat processing skills especially for those students interested in working within the meat processing industry.

Section 4. Proposed Supply Plan

4.1 Introduction

Supply of market-ready beef cattle, hogs, lambs, and goats for both custody and custom processing, to this future meat processing plant is not suspected to be a problem. It is also known by experiences of existing custom-exempt and USDA-inspected plants in New Jersey and Eastern Pennsylvania that capacity for custom processing is very limited. Therefore, based on data generated by the Rutgers University Livestock Processing Needs Assessment Survey published in 2021, with the largest complaint of livestock producers surveyed stated that there are limited places to custom process livestock. A new meat processing plant that is larger than existing plants in the region would be welcomed especially if they offered competitive processing fees.

4.2 Categories of Livestock to be Processed

It is expected that beef, pork, lamb, and goat will be marketed from several different categories of livestock as well as selling services (custom processing) to specific customers. All meat products from each of these categories are represented in an accompanying financial model.

4.2.1 Custom processing

Custom processing is the selling of processing services to other marketing companies or livestock producers. Provided these customers can bring enough animals to make the process worthwhile, this can be a financial benefit to the plant because there are no financing of inventory and receivables required and the account receivables are very quick. Nevertheless, it would create great inefficiencies if the plant would accommodate a producer bringing in one or two animals at a time. The minimum target volume required to justify the interruption of a plant's routine business for just a few animals is approximately 25% of the daily production. Fees charged customers for this service must be negotiated to where it is a benefit to both parties. Typically, a new plant does not begin custom processing until the skill level of the workers and the workmanship is acceptable. All custom processing details must be included in a contract between parties with terms and conditions both parties can live with.

4.2.2 Non-fed cows

Beef and dairy cows no longer reproductively sound, are culled by cow-calf producers and dairies and sold through auction barns. Typically, these cows are very plentiful

from weaning time in the fall to early winter after calves are weaned. However, there are usually some culled non-fed cows available year-round.

The meat from these cows is mostly lean trim (70 – 95% lean) along with some middle meats (i.e., tenderloin, striploin). The trim meat is usually sold to ground beef companies or is used internally to manufacture ground beef.

Non-fed cows are some of the lowest cost raw materials for the plant and will be used almost exclusively for a few months while the plant is being started and workers trained. This is a very inefficient time for the plant, and it is financially prudent to use low-cost raw materials. However, for planning purposes even after a start-up period, these cows could be used at least a partial to one production day every other week as a compliment to the grain-fed under 30-month cattle to provide lean ground beef to blend with higher fat trimmings from grain-fed cattle.

4.2.3 Grain-fed cattle and grass-finished cattle under 30 months of age

Cattle are fed grain for efficient rates of weight gain, to provide consistency of product quality, to improve the tenderness, quality grades, and eating quality of beef, and to decrease the time to develop beef for a market. Corn is expensive in New Jersey but is available. It takes a certain number of days on high grain diets for a caraccas to grade USDA Choice and Prime.

Grass finished cattle are typically not finished on grain but either graze vegetative grass or are fed harvested forages to achieve a finished weight. Growth rate is slower compared to grain-fed and USDA quality grades are typically less, but the grass-finished labeled beef products sell at higher prices per pound than grain finished.

4.2.4 Natural cattle

The natural beef marketing effort began in the late 1980's by Mel Coleman. Many new players and some existing packing companies have entered into this effort since then to chase higher margins.

Defining the term "natural" in accordance with the U.S. Department of Agriculture (USDA) regulations consists of "no artificial ingredients, and only minimally processed". A disciplined procedure must be written and followed to obtain a "natural" label approved by the USDA and to ensure the product contains as the label states. There must also be documents to verify certain production procedures were followed and these documents must be current and available in case an audit is ordered by the USDA. Nevertheless, the leading companies selling all-natural beef claim all-natural as no growth implants and no antibiotics are fed or administered. In most programs,

sick cattle are removed from the all-natural market. These more descriptive and restrictive regulations are what will be guaranteed with “Natural” labels in this program.

Purchasing “natural” cattle from producers willing to either sign an affidavit that their cattle have not been implanted or fed growth promotants or have been injected or fed antibiotics or have a third-party certification of such animal management, will be a requirement of cattle destined for the “Natural” and “Halal” brands. Obviously, cattle qualified as “natural” will cost more money than conventional cattle without such a certification. There are no standard premiums paid for cattle that qualify for “natural” labels. However, cattle producers must be paid to compensate them for reduction in animal performance without anabolic implants and antibiotics. Food & Livestock Planning, Inc. typically uses a premium of 2.5% (approximately $43 per animal) for modeling purposes. It is not known of the available numbers of finished cattle that would qualify for natural cattle in the region.

4.2.4 Hogs

New Jersey doesn’t produce many hogs according to Section 4.3; Pennsylvania produces many more. Therefore, hogs represent the smallest number of livestock in this project. Nevertheless, pork rounds out sales offerings for customers desiring local products.

4.2.5 Lambs and goats

The NW region of New Jersey produces a fair number of lambs and goats especially since there are large market opportunities in the region. Many of the customers to be targeted are ethnic customers in the New Jersey and New York metropolitan areas.

4.3 Supply of Livestock Regionally

New Jersey is one of the smallest livestock producing states in the U.S. The data in the following table represent Warren County and surrounding counties in New Jersey.

Table 4.3 Livestock numbers in New Jersey (USDA – NASS 2017)

	Cattle and Calves	Beef Cows	Hogs & pigs	Sheep & Lambs
Warren County, NJ	4,012	1,450	502	1,691
Sussex County, NJ	3,952	1,255	919	1,263
Morris County, NJ	602	439	165	1,578
Hunterdon County, NJ	4,007	1,655	761	3,177
Statewide New Jersey	27,599	9,370	9,000	17,791

As of January 01, 2017 (the latest recorded livestock census) the number of cattle and calves and beef cows in the 4 counties in NW New Jersey represent 50% of the cattle in the state. The number of lambs and goats represents 43% of those produced in the state. The hog numbers remain quite small both in these four counties and in the state. Pennsylvania produces many more livestock than New Jersey and some of the livestock will from Eastern PA would be expected to use this new processing facility.

Nevertheless, these four counties are important to livestock production in the state and are quite representative of areas represented in the 2021 Rutgers study where livestock producers complained about little capacity to process their livestock. Most of the survey participants claimed that they would increase their livestock production if more USDA-certified meat processing plants were available.

Section 5 Harvest and Processing Requirements

5.1 Introduction

The plant has been sited on 12 acres at 218 Mt. Pisagh Av., Oxford, NJ. This is land owned by Warren County near the landfill and has access to all utilities. Warren County will officially host the new facility by offering a long-term land lease to NW New Jersey Food Processing & Innovation Center (herein referred to FPIC). A large incinerator is currently located on the site but will be removed by the county for the new meat processing plant.

5.2 Waste Products

The disposal of waste products is the greatest liability to a meat plant. A significant portion of the carcass must be disposed of, including waste fat, most bones, inedible offal, and blood. There are three logical strategies to dispose of waste products: 1) compost them along with additional organic matter from outside the plant for the production of organic fertilizer; 2) have them picked up from the plant by a rendering company; or 3) incinerate all waste through a gas-fired incinerator. Waste bones, meat scraps, blood, and the rumen contents (paunch) from the livestock processed require disposal by one of the three methods described above.

5.2.1 Composting

The blood and paunch material will be separated from other bones and meat scrap waste streams and will (likely) be composted somewhere near the site, which has yet to be worked out. The compost site may need to be designed and permitted by an environmental engineer to ensure the leachate is retained. An additional source of organic matter (i.e., wheat straw, yard waste, wood shavings) will be needed to serve as the substrate for this operation. The pile needs to turned every few days to mix contents and bring oxygen into the pile. Also, the bones will need to be ground to reduce the particle size, otherwise they will not break down.

The associated composting operation will provide value to the operation through the production and sale of organic fertilizer – both directly, through a revenue stream, and indirectly, through increased value of rendering material. However, as this aspect of the project has not been fully defined, the accompanying financial model takes a conservative approach and does not include any revenue from this by-product.

5.2.2 Rendering Company pick-up

Darling International is the largest rendering company in the U.S. There is a Darling rendering plant located in Newark, NJ and several in Pennsylvania.

5.3 Hides

Cattle hides are typically an asset to the plant and have value depending on the type of cattle harvested, volume, and treatment of hides. Boston Hides may have the closest hide processing facility. AJ Hollander and Tasman Hides operate processing facilities in Kentucky and Tennessee. Lamb and goat hides have little value and could be ground and placed in a compost pile. Because of the large distance to a hide processing facility, the hide values will be lower than reported by USDA. Once the plant is under construction, an off-take agreement will be pursued with a hide company.

There are several ways to treat hides at the plant, but they must be kept cold. The plant could be designed to hang hides in a chilled room (additional cost). After hanging for approximately 2 days, the hides will be layered in plastic totes and stored for pickup by the hide company. Otherwise, the hides will be loaded into a tote with ice or stored in a refrigerated trailer on the plant site.

5.4 Treatment of Specified Risk Materials

Because nervous tissue could contain Bovine Spongeform Encephalomyelitis (BSE), it cannot be sold for human consumption. This includes the heads, spinal column, tonsils, and small intestines of beef cattle (cattle under 30 months), and heads, vertebral bone, and dorsal root ganglia (cows over 30 months). This Specified Risk Material needs to be disposed of in a landfill.

5.5 Effluent and Water Use

Beef will require approximately 300 – 500 gallons of water per animal carcass per day. Therefore, this is also the approximate volume of wastewater produced. The water should be potable, good quality (low nitrates and sulfates), and have high volume per gallon. The source of water is the municipal water supply in the community where the plant is located.

All process wastewater from the slaughter floor should pass through a screen to catch and separate solids. Screened effluent pumps and pipe systems will convey screened process wastewater to the municipal sewer system or lagoon on site.

A five-day Biological Oxygen Demand (BOD) value is used to measure the level of treatment needed to discharge wastewater safely. The BOD for all food-processing wastewater is relatively high compared to other industries. A high BOD level indicates

that the wastewater contains elevated amounts of dissolved and suspended solids, minerals and organic nutrients containing nitrogen and phosphorus. The plant will also utilize Dissolved Air Flotation (DAF) equipment to further remove fats and oils and suspended solids before sending the waste stream to the city of Oxford for final treatment and discharge.

5.6 Introduction to Inspection

Meat plant inspection requirements for animal and foul species can be confusing and complicated. Currently, statutory, and regulatory provisions define the species of animals that are inspected by USDA under mandatory inspection and those that are under voluntary inspection. In certain instances, explicit exemptions from inspection exist in addition to exemptions from definitions of products that USDA inspects. The Federal Meat Inspection Act (FMIA) mandates that USDA inspect cattle, sheep, swine, goats, horses, mules, and other equines, and food products thereof, slaughtered and prepared in Federal establishments and foreign establishments exporting such products to the US that are intended for distribution in commerce.

The FMIA provides for exemptions from inspection of the slaughter of animals and preparation of the carcasses when such products are exclusively used by an individual or households and are not sold. This provision is referred to as the “custom operation exemption”. Some states such as Texas have inspection programs and are permitted to also inspect the slaughter of animals and the preparation of the meat and poultry products from both amenable and non-amenable species. Currently, state inspected meat from amenable species cannot cross state lines for resale purposes. However, this prohibition has been removed in some states that have been approved for interstate shipment. New Jersey does not have a state meat inspection program.

The goal of any meat processing facility, along with producing a consistent, pleasing product, is to produce a safe and wholesome product. While food safety regulations may seem onerous and cumbersome, this is also the goal of both state and USDA inspection services. All meat processing facilities, even custom-exempt slaughter facilities, are subject to at least periodic inspection by some government organization. This new beef processing plant will seek USDA Grant of Inspection.

Since 1996, Hazard Analysis and Critical Control Points (HACCP) and Sanitation Standard Operating Procedures (SSOP) programs have been required by the federal government to prevent food borne illness and contamination in food products. Meat processing plants must have these plans in place to reduce the risk of their consumers’ exposure to pathogens and contaminants. These programs should be written by someone that is HACCP certified.

5.7 USDA Grading

Most of the beef from cattle under 30 months of age in the U.S. are marketed as a USDA-graded product falling into categories (in order of descending quality) of Prime, Choice or Select grades and most of the lamb marketed in the U.S. fall into Prime and Choice grades. The USDA Agriculture Marketing Service offers a fee-based, third-party service for quality grading beef as well as other verification services such as Certified Angus Beef and is the only entity that can certify a carcass as USDA graded or certified. The USDA Grading Service is a separate government agency from the Food Safety Inspection Service (FSIS) who inspects and regulates plants for food safety. It is assumed this plant could utilize USDA graders at least one day per week for grain-fed cattle under 30 months of age.

Grading involves a subjective judgment of the degree of marbling (intramuscular fat) and degree of maturity measured at the ribeye muscle between the 12 and 13th rib. This judgment is quite rapid for an experienced grader and most often less than 30 seconds per carcass. Therefore, it will only take a grader approximately 15 minutes to grade 25 beef carcasses. Each company hiring a USDA grader must pay for the grader's time of service including travel time to and from the plant.

Some smaller plants do "in-house" grading (by an agent or employee of the company trained to score marbling) to categorize beef carcasses to differentiate their marketing value and market destination.

This plant may be too small to justify USDA quality grade certification. Nevertheless, the plant's meat customers may require it. Therefore, there will be an attempt to work with the USDA Marketing Service to accommodate some type of program to get the beef carcasses graded unless house grades are acceptable to customers.

5.8 Humane Handling and Stress on the Animals

There are several factors that cause stress in livestock such as handling, transport, weather conditions, and severe restrictive confinement. Severe stress increases the release of cortisone in the animal, which can cause a number of biochemical effects and can affect muscle pH, water holding capacity, meat color and texture. Therefore, it is important to reduce the stress as much as possible before harvesting these animals. Animals should not be overcrowded in trailers and pens when being confined or transported. Animal handling facilities, animal movement, and penning techniques prescribed by Dr. Temple Grandin should be considered at the packing plant.

The author has conducted extensive studies in beef packing plants in an attempt to correlate poor quality meat conditions such as dark cutting beef with different management parameters. Several management practices correlated highly with dark cutting meat. However, beef animals harvested within 8 to 10 hours of a particular stress condition seldom resulted in poor quality meat. Therefore, it is important to harvest the animals within a 10-hour period of gathering and shipping them.

5.9 Dry Aging

Some customers may require dry aging their beef as a sales benefit. Dry aging is the traditional process of placing either an entire carcass or subprimal (without covering or packaging) in a refrigerated room for 14 to 21 days at 80 – 85% relative humidity and with an air velocity of 0.5 – 2.5 m/sec. In some cases, shrouds may be used to cover the carcass. In this business plan, if a customer desires beef to be dry aged, the carcasses will be routinely boned within 48 hours and the specific boneless subprimal to be dry aged will be placed on either a rack or hung from the rails on a tree in the carcass holding cooler for the prescribed number of days. Entire carcasses will not be dry aged unless the plant is compensated by customers willing to pay extra for tying up rails.

Section 6 Meat Processing Plan

6.1 Plant Specifics

6.1.1 Size and Scope

The total size of this plant is estimated at 32,000 sq. ft. in size (including livestock pens).

For planning purposes, the animal numbers, and types to be processed include (estimated):

Animal Class	Year 1	Year 2	Year 3
Lean Cull Cows	270	475	600
Cattle (<30 mo. of age)	635	1,500	1,800
Custom Beef	395	1,450	1,800
Market hogs	345	495	600
Custom Pork	270	495	600
Lambs & goats	760	2,210	3,600
Custom lambs & goats	760	2,210	3,600
Total Beef	1,300	3,425	4,200
Total Hogs	615	990	1,200
Total Lambs/goats	1,520	4,420	7,200

The plan is to harvest and process the numbers of livestock listed above once the plant is completely ramped-up to full production capacity. Because new packing plants take some time to hire employees, establish markets, and work out all the “bugs” inherent in a new facility, the model projects a steady, two-year ramp-up plan. By the start of the 3rd year, the plant is predicted to be operating at full capacity.

Table 6.1 Projected Plant, Property and Equipment Costs

Alternate Total Plant Cost Breakdown	
Site prep, dirt work, connections, concrete, plumbing	4,814,100
Building	1,449,000
DAF and DAF building	250,000
Fire suppression	120,000
Refrigeration & HVAC and air makeup	1,500,000
Total Plant & Property	8,133,100
Rail system	133,625
Equipment - UltraSource	1,598,000
Forklifts	100,000
Bone grinder & skid steer loader	75,000
Total Fixtures & Equipment	1,906,625
Total Plant, Property & Equipment	**10,039,725**

6.2 Total Capital Requirements

Table 6.2 Estimated total capital requirements

Plant, Property and Equipment					
Plant and Property		$	8,133,100		
Fixtures and Equipment		$	1,906,625		
Total P, P & E		$	10,039,725		
# of months in Pre-Op Period			12		
Debt & Equity					
Long-term loan	60%	$	4,880,000		
Assumed Interest Rate			7.00%		
# of years			30		
Monthly Lease Payment			54,110		
Long-term loan Equip)	60%	$	1,144,000		
Assumed Interest Rate			7.00%		
# of years			7		
Monthly Lease Payment			28,776		
Equity	40%	$	4,015,725		
G&A Expenses and Working Capital Financing:					
Working Capital		$	1,400,000		
Pre-op G&A:					
Admin Costs		$	150,000		
Pre-op Lease Payments		$	-		
Total Capital/Donations Required		$	1,550,000		
Inventory Purchases				$	25,462
Additional working capital from model				$	1,173,176
Total equity/donations to be raised		$	5,415,725		
Line of Credit					
Cash Buffer		$	25,000		
Maximum borrowings available		$	670,000		
Maximum borrowings used		$	80,000		
Collateral:					
Inventory			50%		
Accounts Receivable			80%		
Interest Rate			7.00%		
Equity		$	1,400,000	OK, Equity is sufficient.	

a. Pre-operational capital includes design, consulting, utility prepayments, geotechnical tests.
b. Disclaimer: The costs represented in Table 6.2 are based on preliminary drawings and equipment cost estimates by Diligent Innovations and UltraSource. Final costs have not been determined by a construction company.
c. Note: Assumes 40% of the P, P&E are self-financed and 100% of the working capital needs. Short term debt could be used to finance some working capital needs and some lending institutions may provide more than 50% loan: value ratios.

6.3 Expected Operating Expense

Table 6.3 Expected monthly operating expense

Item	Fixed Expenses	per week	per hd.
Utilities			
Propane		3,375	2.25
Electricity		18,750	12.50
Water		2,850	1.90
BOD & TSS		4,800	3.20
Total Utilities		29,775	19.85
Other Plant Exp.			
Overtime insp.		300	0.20
USDA grading[1]		*0*	*0.00*
Offal packaging		3,000	2.00
Audits/compliance		1,500	1.00
Packaging		45,000	30.00
Laboratory		3,000	2.00
Outside Security	4,200	4,200	2.80
Pest control	300	300	0.20

[1] Since the plant is small, fee based USDA Grading will not be justified.. If the Custom-kill customers desire USDA Grading, it will be added as a straight pass-through cost; it will not be a corporate expense

Laundry		2,250	1.50
Repairs, Maint.& Supplies		22,500	15.00
Plant vehicles maint.	150	150	0.10
General insurance	1,500	1,500	1.00
Total Other Plant Exp.		83,700	56
G&A			
Professional fees	500	500	0.33
Office supplies	200	200	0.13
Postage	75	75	0.05
Telephone	700	700	0.47
Travel & entertain.	100	100	0.07
Housing /Relocation	288	288	0.19
Advertising	300	300	0.20
Bank charges	100	100	0.07
Misc.	300	300	0.20
Total G&A Expense	2,563	2,563	1.71
Property Taxes[2]	0	0	0.00
Total Weekly Overhead		**116,038**	**77**

[2] As of this writing, Property Taxes are unknown.

6.4 Expected Manning and Labor Expense

Total Labor Profile			
Beef Equivalent *(Hogs = Beef x3)* →	hd/day	**25**	
*(Lambs = Beef * 4)*	hrs / day		8
	Work d / mo		21
Direct Labor	$/h rate	# workers	$/d
Yards	18.00	1	144
Skin line	22.00	2	352
Gut table	22.00	1	176
Trim Line	22.00	1	176
Offal/tripe/heads	22.00	1	176
Total Slaughter		**6**	**1,024**
Carcass coolers	22.00	1	176
Break chain	22.00	1	176
Chuck line	22.00	2	352
Rib line	22.00	1	176
Loin line	22.00	1	176
Round line	22.00	1	176
Packaging	22.00	3	528
Grinding	22.00	1	176
Curing/smoking	22.00	2	352
Shipping	22.00	0	0
Total Fab & Furt. Proc.		**13**	**2,288**
Plant cleaners	21.00	3	504
Maintenance	24.00	1	192
QA	25.00	0	0
Warehouse	22.00	1	176
Wastewater	22.00	0	0
Gen'l Office	25.00	2	400
Total Other		**7**	**872**
Direct Plant Labor- Base		**26**	**$4,184**
Payroll taxes	9.00%		$377
Workman's comp	6.00%		$251
Worker's health insurance	8.50%		$356
Total Direct Plant Labor - Fresh			**$5,167**
Further processed labor - base	20.00	5	800
Payroll taxes	9.00%		$72
Workman's Comp	6.00%		$48

Worker's health insurance	8.50%		$68
Total Direct Plant Labor - Furth. Proc.			**$988**
Total combined fresh and Furt. Proc.		**31**	**$6,155**

Indirect labor includes the General Manager, Production Manager (Plant Manager), Financial Controller, Sales Manager, Quality Control Manager, and Personnel/Office Manager with an annual payroll of approximately $570,000.

Section 7 Corporate Strategy and Management Plan

7.1 Organizational Structure

NW New Jersey Meat Processing and Innovation Center is legally organized as a 501-C-3 non-profit business. The Board chairman is Richard Cotton with Glenn Fohr and William Rymon as board members. This business will own the plant and equipment and will lease the plant site from Warren County. Money will be raised from private and public donors for the plant, equipment and FPIC working capital. The possible donor list includes:

- The New Jersey Economic Development Authority.
- Bonds set up for the purpose of funding the project.
- Doris Duke Foundation
- William Penn Foundation
- USDA and state grants

Working capital for FPIC may also include typical debt sources which will be paid back with operational cash flow and profits.

7.2 Governance and Management

The business will be governed by the Board of Directors listed above and will hire and oversee the General Manager to perform the day-to-day management duties of the plant.

7.3 Key Management

The key management positions include:

a) General Manager or Plant Manager
b) Business Manager or Financial Controller
c) Sales Manager
d) Quality Control Manager (HACCP manager)
e) Personnel Manager

Section 8 Financial Plan

8.1 Development of Business Enterprise Model and Outcomes

Business enterprise models were developed, which can simulate business outcomes across differing outputs. As in the case with any model, the financial predictions are only as good as the assumptions used.

8.1.1 Revenue expectations, raw material costs, cost of production assumptions.

- Revenue
  - Revenue was determined by cut-out models presented in accompanying financial models and custom processing fees.
  - The prices for cattle prices are based on the 2022 USDA wholesale averages. Retail prices are based on actual anecdotal prices.
  - Custom processing fees are listed with each specie cut-out sheets and are set at a price less than the average prices listed in the 2021 Rutgers Study.

- Cattle (<30 mo. and > 30 months) purchase prices are based on USDA national prices averaged across the year 2022.
- Halal premiums were not assigned in these financial models but the models are equipped to assign a Halal premium. A 5% Halal premium over non-Halal meat appears justified. Halal certification expense based at $6,000 per year (J. Aossey, 2021).
- Equipment was depreciated 7 years and the building 30 years.
- The model assumes that working capital will be sourced from lending institutions.
- Income taxes were not estimated or accrued but would likely be deducted from distributions to its members.
- Year 0 is a construction year.
- A 5%, 2.5%, and 1% sales shrink was applied to revenue of years 1, 2, and 3, respectively. Sales shrink represents the difference between what has been priced and what sales are actually realized.

8.2 Financial Statements

The following table represents an annual three-year income statement. This model includes a ramp up in Year 1 followed by more steady-state production in years 2 and 3.

Table 8.2.1. Annual income statement

	Yr 0 Pre-Operations	Yr 1	Yr 2	Yr 3
Head Processed Per Year,		**3,435**	**8,835**	**12,600**
Revenues				
Meat Sales - Cows, Lean	-	405,070	712,623	900,155
Meat Sales - Beef, Grain-fed		1,633,518	3,858,705	4,630,445
Meat Sales - Cows, Fed				
Hides, < 30 mo.		6,350	15,000	18,000
Hides, > 30 mo.		1,350	2,375	3,000
Custom Beef - Processing		308,258	1,131,580	1,404,720
Custom Beef - Offal		31,159	114,381	141,990
Custom Beef - Hides		3,950	14,500	18,000
Meat Sales - Hogs, Owned		205,191	294,405	356,855
Custom Hogs - Processing		73,575	134,888	163,500
Lambs, Owned		305,839	889,349	1,448,713
Custom Lambs - Processing		114,000	331,500	540,000
Total Revenue	-	2,933,848	7,499,305	9,529,125
Cost of Revenue				-
Cattle Cost	-	1,252,846	2,845,390	3,435,492
Hogs Cost		58,782	84,339	102,229
Lambs Cost		176,707	513,847	837,035
Processing costs				
Direct labor	-	891,894	1,396,008	1,551,120

Rendering Tip		9,000	12,000	24,000
Utilities	-	66,240	126,000	144,000
Warren County Payment	-	12,000	24,000	36,000
Other costs	-	230,880	432,075	493,800
Marketing costs	-	44,876	77,852	73,593
Total cost of revenue	-	2,743,225	5,511,510	6,697,269
Gross Profit	-	190,623	1,987,795	2,831,856
General and Administration	-	537,300	630,450	736,800
EBITDA	**-**	**(346,677)**	**1,357,345**	**2,095,056**
Depreciation expense	-	(543,478)	(543,478)	(543,478)
Interest income	-	295	5	463
Interest	-	(415,156)	(404,369)	(387,821)
	-	(958,339)	(947,843)	(930,837)
Net income (loss)	-	(1,305,016)	409,502	1,164,219

Table 8.2.2 Annual balance sheet

	Yr 0	Yr 1	Yr 2	Yr 3
Head processed per year				
Total	**Pre-Operations**	3,435	8,835	12,600
Cattle	Pre-Operations	1,300	3,425	4,200
Hogs	Pre-Operations	615	990	1,200
Lambs/goats	Pre-Operations	1,520	4,420	7,200
Statements of Financial Position				
Assets				
Current Assets				
Cash	1,374,538	86,071	270,472	1,757,797
Accounts receivable-trade	-	397,162	788,304	802,115
Inventories	25,462	42,578	73,064	76,749
	1,400,000	525,811	1,131,840	2,636,661
Property, plant and equipment	10,039,725	10,039,725	10,039,725	10,039,725
Less: Accumulated depreciation	-	(543,478)	(1,086,957)	(1,630,435)
Net property, plant and equipment	10,039,725	9,496,247	8,952,768	8,409,290
Total assets	11,439,725	10,022,058	10,084,609	11,045,951
Liabilities and Net Assets				
Current Liabilities				
Accounts payable	-	68,986	141,840	147,936
Line of credit	-	-	-	-
Current portion of lease liability	49,572	53,155	56,998	61,118

	49,572	122,141	198,838	209,054
Long-term lease liability, less current portion	5,974,428	5,789,207	5,590,539	5,377,446
Net Assets				
Without donor restriction	5,415,725	4,110,709	4,295,232	5,459,451
Total liabilities and net assets	11,439,725	10,022,058	10,084,609	11,045,951
Ratio Analysis:				
Profit margin on sales		-44%	5%	12%
Net operating margin		-12%	18%	22%
Return on total assets		-12%	4%	11%
Return on equity		-28%	10%	24%

Table 8.2.3 Predicted annual cash flows

Statements of Cash Flows				
Net income	-	(1,305,016)	184,523	1,164,219
Depreciation	-	543,478	543,478	543,478
Changes in operating assets and liabilities:				-
Accounts receivable	-	(397,162)	(391,143)	(13,811)
Inventory	(25,462)	(17,116)	(30,486)	(3,685)
Accounts payable	-	68,986	72,854	6,096
Net cash provided by (used in) operating activities	(25,462)	(1,106,829)	379,227	1,696,297
Investing activities				
Purchase of PP&E	(10,039,725)	-	-	
Financing activities				
Lease proceeds	6,024,000	-	-	
Lease payments	-	(181,638)	(194,826)	(208,972)
Borrowings on line of credit	-	-	78,417	-
Repayments on line of credit	-	-	(78,417)	-
Donations	5,415,725	-	-	-
Net cash used in financing activities	11,439,725	(181,638)	(194,826)	(208,972)
Net increase (decrease) in cash	1,374,538	(1,288,467)	184,401	1,487,325
Cash at beginning of period	-	1,374,538	86,071	270,472
Cash at end of period	1,374,538	86,071	270,472	1,757,797

Table 8.2.4 Margins ($/hd.) of the various animal processing types

	Net Income (Loss) / Animal Processed, $		
Cattle, Total *(Weighted Average)*	(690)	65	188
Cows, Lean	(760)	(7)	116
Beef, Grain-fed	(657)	96	220
Cows, Fed	0	0	0
Beef, Custom	(695)	58	181
Hogs, Total *(Weighted Average)*	(164)	78	119
Hogs, Owned	(97)	154	195
Hogs, Custom	(249)	2	43
Lambs, Total *(Weighted Average)*	(101)	25	45
Lambs/goats, Owned	(91)	35	55
Lambs/goats, Custom	(111)	15	35

8.3 Financial Summary

The overall capital cost of the project is estimated to be $10 million plus an additional $1.4 million in working capital.

The company is projected to have a negative EBITDA (-347,000) with a negative Net Income (-$1.3 M) in its first year of operation (Table 8.2.1). In the second year, EBITDA increases to $1.4 M and Net Income becomes positive at $410,000. The plant is projected to begin cash flowing in month 22 of operation (Table 8.2.3). When the plant is fully ramped up, the third year performance is projected to yield an EBITDA of $2.1 M with Net Income at $1.2 M. In Year 3, the Return on Sales (ROS) is projected to be 12 % and a Return on Equity (ROE) is 24 % (Tables 8.2.1 and 8.2.2); both ratios are outstanding for a food business.

Beginning the second year of operation, all species of animals resulted in positive net income as custody animals (animal purchased and meat sold by company) and custom processed for a fee. In the third year, the net income per animal processed increased significantly (Table 8.2.4).

The plant will do well financially if it can attract sufficient direct and indirect labor and keep the numbers of livestock processed near the plant's designed capacity.

Section 9 Core Competencies and Risk Factors

9.1 Core Competencies

The following core competencies are necessary for this meat processing company to be successful:

- Successful hiring, training and supervision of key processing and harvest supervision and other company employees.
- High quality workmanship with meat processing.
- Disciplined control of overhead costs.
- Good record-keeping, cost-of-production analysis, and sales analysis.
- High level service to customers.
- High level attention to food safety and quality.
- Business flexibility to make changes to take advantage of opportunities or correct problems.

9.2 Risk Factors

Possible risk factors that could be a barrier to entry or could undermine possible earnings include the following:

- Incidents of positive *E. coli O157:H7* or Salmonella tests resulting in recalled products and loss of customer confidence.
- Inability to raise sufficient capital to construct the plant and to finance operating expenses.
- Poor relationship with USDA FSIS inspectors resulting in suspension of USDA inspection.
- Loss of customers due to unhappy custom processing producers or retail customers spreading negative comments.

Section 10 Literature Cited and Credits

Literature Cited

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Credits

Thanks to Richard Cotton for contributing a great deal of information for this project. Gratitude is also extended to Tracy Christian, CPA for her professional review of the financial models.

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