

**DEL NORTE MEAT PROCESSING AND RETAIL FACILITY
FEASIBILITY ASSESSMENT**



Del Norte County Cattle—*out standing in their field!*

Prepared for:
Del Norte Resource Conservation District

Funded by:
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DEL NORTE MEAT PROCESSING AND RETAIL FACILITY FEASIBILITY ASSESSMENT

EXECUTIVE SUMMARY

A feasibility study provides an objective third-party analysis of the viability of the business idea and focuses on answering the essential question, “*Should we proceed with the proposed project idea?*” The activities of this study are directed toward answering this all-important question.

In this Feasibility Study you will find a response to the 7 areas posed for evaluation in the Request for Proposal issued by the Del Norte Resource Conservation District on April 26, 2010. We address those topics and provide a thorough, well-researched analysis and synthesis that substantially goes beyond the original Scope of Work. As such, it includes a comprehensive set of guidelines and background materials as a reference to help guide the implementation efforts.

1. *Determine if a meat slaughtering, processing, packaging and market retail facility is feasible in Del Norte County, California.*

Animal slaughter, meat processing and packaging could be successful in Del Norte County. It is a marginally viable, high risk business opportunity that will require extensive community commitment, funding and additional detailed planning (i.e., development of a detailed business plan and commitments from area producers, consumers, distributors and investors). Three significant challenges are faced: county animal inventories, financing and product distribution.

This is a business system that goes beyond slaughter and processing. Transactions flow from the field to the consumer, and all aspects must be in balance to succeed. There is also a gauntlet, some say a maze, of regulatory matters to be addressed: federal, state and local.

The retail sales component, while interesting and worth further evaluation over time, has a very low potential for initial success, especially in the first few years of meat plant operation. Likely it would serve as a distraction and a losing proposition. Yet this could be an add-on business as experience is gained operating the slaughter and meat products production business components. There is a lot to learn and absorb here.

Many of the elements of a business plan are included with this study’s results but substantially more needs to be done to get to the level of detail required to step into the chosen alternative.

Quite literally there are hundreds upon hundreds of variables to consider. This study provides 4 alternatives for consideration (see following matrix). Each has its own merits, ranging from higher risk to lower risk.

Financial pro formas were generated for only one set of variables for each alternative. Small changes in inputs can result in quite a variation in results. An integrated Excel workbook tool is included to provide opportunity to run additional variables to model differing scenarios.

Alternatives 1-3: These are a federally certified approach (USDA Food Safety and Inspection Service—FSIS) and have a much higher risk of success. But with hard work, collaboration and community support it could be viable. This set of alternatives would provide a large array of sales/distribution alternatives. This is an instance where *hard is good*.

Alternatives 4: Custom slaughter and processing is highly feasible and a relatively low risk, but it is not federally certified. Sales of product are restricted to producer to consumer.

Alternatives 3 and 4 require a facility to hang and process the meat.

Economic impact comes in part from construction, although it's likely that most of the equipment will be sourced outside the county. Several jobs will directly emerge to work in the processing. Dollars currently leaving the county for processing will remain in the county.

Estimates in the following table are derived from a variety of sources reporting on actual processing facilities. Pro formas driving these financial results are in the Appendix.

	<i>Higher</i>	<i>RISK</i>		<i>Lower</i>
	<i>Alternative 1: Large Plant*** 5,250 sq. ft</i>	<i>Alternative 2: Small Plant*** 2,600 sq. ft.</i>	<i>Alternative 3: MSU, 34' long, ~300 sq. ft.</i>	<i>Alternative 4: Custom Slaughter, Cut & Wrap</i>
Pre-chill Cooler size*	10 Beef	7 Beef	20 beef	Requires additional facility
Holding Cooler Size*	20 Beef	13 Beef	Requires additional facility	Requires additional facility
Slaughter days per year	300	300	150****	150****
Slaughter capacity	20 beef/day = 6,000/year	7 beef/day = 2,100/year	10 beef/day = 1,500/year	2 beef/day = 300/year
Additional Facility for MSU or Custom (coolers, freezers, cut and wrap)	Included	Included	\$150,000 (1,500 sq. ft.)	\$150,000 (1,500 sq. ft.)
Number of Employees	6–10	3–4	3–4	2
Trailer (animal hauling)	\$60,000	\$60,000	N/A	N/A
Truck (used for trailer or MSU)	\$18,000	\$18,000	\$18,000	N/A
Pick-up (3/4 ton, used) with hoist and cover	N/A	N/A	N/A	\$15,000
Processing Facility Investments	\$525,000–2,100,000**	\$260,000–1,040,000**	MSU @ \$170,000**	N/A
Total Processing Facilities Cost	\$603,000–2,178,000	\$338,000–1,118,000	\$488,000	\$130,000
Land acreage*****	2 acres	2 acres	1 acre	1 acre
Land cost (assumes \$40,000/acre)	\$80,000	\$80,000	\$40,000	\$40,000
Total Overall Estimated Investment	\$683,000–2,258,000	\$418,000–1,198,000	\$343,000	\$170,000
Payback Period (using assumptions in pro formas)	~2 ½ years	~2/1/4 years	2 ½ years	~3 years

Notes:

- * Cooler space for one beef will provide space for 1.5 to 2 hogs, sheep or goats.
- ** Fixed facility price per sq. ft. = ~\$100-400, depending on materials used, without land acquisition costs. Based on estimated costs used in studies by USDA, Iowa State University and the Mendocino County/Ukiah feasibility study.
- *** For both designs, the left-hand side of the plant could be extended to make more room that could be utilized for anything that would be needed, except slaughter. Both designs include a retail sales space.
- **** 2 slaughter days per week in field, 2 processing days, requires return from field to unload and re-stock MSU.
- ***** Adequate water supply and septic must be included. Includes space for retail and equipment parking, turn-around for truck/trailer/MSU, space for animal offloading and holding, etc.

Water Use and Output: 150-200 gallons per beef equivalent, average. One beef equivalent = 2 hogs, 2sheep or 2goats

1 acre = 43,560 sq. ft.

2. *Provide marketing recommendations for a successful venture, including researching the feasibility of grass fed beef produced locally marketed with a “natural beef label”. These options could include joining an existing national organization with a natural beef label, joining an existing regional organization with a natural beef label or creating a new natural beef label. Specific feasibility needs to be determined for the various levels of production including:*
 - a) *Management requirements of beef to meet “natural label” standards, including pasture feed mix, vaccines, antibiotic use and restrictions, age, weight, sex, cattle breeds, timing for sale, minimum number of cattle, etc.*

The USDA definition of natural beef describes meat products that have been minimally processed and contains no additives, artificial flavors, colors or preservatives. This definition does not mention production techniques for natural meat, which can be confusing or even misleading to consumers. Unofficially, natural meat has been defined by ranchers and marketers as livestock raised without the use of antibiotics, growth hormones, and implants (i.e., “never-ever”).

The USDA label for grass-fed meat says the following: grass, green, or range pasture or forage shall be 80% or more of the primary energy source throughout the animal’s life cycle. This means that on a daily basis producers can feed animals up to 20% from other sources, or wait till the finishing stage and feed animals entirely on other sources, as long as no more than 20% of the animal’s feed during its entire lifetime comes from these alternate sources. In 2006, the USDA-AMS solicited comments on a revised standard which defines grass (forage) fed as: Grass (annual and perennial), forbs (legumes, brassicas), browse,

forage, or stockpiled forages, and post-harvest crop residue without separated grain shall be at least 99% of the energy source for the lifetime of the ruminant specie, with the exception of milk consumer prior to weaning.

Organic meat is subject to an even more restricted regimen, including use of certified organic cleaning materials at the processing location. This is even more of niche market than natural or grass fed meat products.

Animal age is not as often referred to as is weight: beef 1200-1400 lbs. Age is a determining factor for offal disposal. Cattle over 30 months must have brains and spinal cords disposed of separately, most often in a landfill.

Steers are the most common beef meat animal. Little mention is made of breed, although there are champions for each and every breed.

Year-round availability of animals is desired highly. This provides for a steady stream of animals to be processed, keeps employees engaged and provides for a much higher reliability for obtaining an FSIS inspector. Irregular production schedules can be quite problematic for scheduling an FSIS inspector and retaining employees.

Small scale facilities generally require on order of 1,000 to 1,600 beef (or beef equivalents) per year to achieve sustainability. Federal beef inventories for Del Norte County indicate approximately 1,000 cattle are targeted for beef production in a year.

b) Transport requirements

The survey results indicated a low interest in the meat processing entity providing transportation.

<i>Response</i>	<i>Percent</i>
Yes	35.7
No	64.3

Many of the producers have some form of transport available to them. At the Fortuna Auction yard there were examples of folks bringing their animals to the yard in their own equipment, by using someone else's or in paying someone to haul the animals. Some producers ship their animals long distances for processing.

As such, alternatives 1 and 2 do not include a transport function as part of the business modeling. Alternative 3 (MSU) does on the premises slaughter and then transports the carcasses to another location for final preparation.

For the Custom operation (alternative 4), this is solved by slaughter at the producer's location and then transporting the carcasses by the custom slaughterer to another location for hanging and then preparation.

c) *Processing requirements*

The 4 alternatives position differing levels of product capacity, ranging from 20 beef (or beef equivalents) per day to 2 per every other day.

d) *Marketing requirements*

A number of marketing issues, challenges and opportunities need to be addressed. Resources are available to help out.

Consumer Education—Additional and continued consumer education will be vitally important in securing a premium for products in this growing niche market. Clarification of terms—natural versus grass-fed versus organic—and a better understanding of the unique and exceptional healthy benefits of a premium grass-fed beef product are the two areas in which consumers most need further edification.

Consolidation of Producers and Processors—Major chains—Wal-Mart and Safeway for instance—are offering more “natural” meat products alongside the more traditional avenue—Natural Food Stores. Continued refinement of animal and meat quality could help sustain prices so the Del Norte product can continue to differentiate itself from less consistent and flavorful “natural” products.

Inherent Product Attributes Raise Concerns with Some Buyers—“Natural” meats have distinct characteristics that may be an issue for meat market managers and buyers—more so than for consumers. Again education will be very important to dispel these concerns.

Product Packaging—Sales of “natural” meats can suffer due to poor packaging or environmentally insensitive packaging. Given that premiums will be charged for this product, attractive package that makes the product look fresh and safe will be very important. Further, packaging should be kept to a minimum and be made from environmentally fit materials to align with the other inherent values motivating the consumer to buy this product.

Branding—Branding is all about perception. Branding is all about creating singular distinction, strategic awareness and differentiation in the mind of the target market—not just awareness. When you have been successful, you will start building equity for your brand. A brand is nearly worthless unless it enjoys some equity in the marketplace. Without brand equity, you simply have a commodity product.

Some potentially viable approaches include:

- Del Norte County Brand Certification/Labeling Programs
- Niche Marketing/Branding
- Develop a Brand Certification/Labeling Program
- Natural and Grass-Fed Beef Branding Programs

Promotion—An effective promotion strategy will reach target customers through several types of media. These may include the following:

- Print Media: Residential mailers and brochures
- Electronic Media: Websites and Internet advertising
- Published Media: Newspapers, magazines, and coupons
- Broadcast Media: Television and radio

e) *Administrative requirements*

Federally inspected meat production presents near daunting regulatory requirements. Even a custom slaughter, cut and wrap operation requires great attention to detail in recordkeeping. Keeping track of all of these regulatory requirements, permits, inspections and related matters requires great attention to detail and will take up time to do so. Failure here is not an option and can result in loss of certifications, and consequentially the business.

Additionally, there are the myriad other details that have to be managed: scheduling, training, sales (probably more to distributors but potentially to more local entities).

The financial pro formas build in time to attend to these details. In the first year of operation this is partly why only a half-time operation is positioned. There is a need to learn as you go so as to remain compliant with regulatory matters and to operate the business.

f) *Capital investment requirements*

(See previous alternatives matrix)

3. *Locate available sites, complete preliminary design and develop cost estimates for the construction of a processing and retail facility. This task will include a discussion of alternative facility designs, such as mobile slaughtering vs. fixed site, as well as a thorough explanation of all health and safety requirements.*

This study does not select a particular site but presents criteria to aid in the selection (see “General Plant Design Considerations for Fixed Facilities or MSU’s” for a detailed check list). A number of critical decisions need to occur to further guide the site selection (e.g., which of the alternatives is to be pursued?). A specific location based on all of the criteria would be included in a detailed business plan. Each of the

alternatives has its own set of requirements. What we can do at this time is bracket land costs and provide other guiding advice.

Searching the Multiple Listing Service (MLS) for Del Norte County for properties up to \$1,000,000 zoned agricultural or commercial/industrial revealed surprisingly few offerings. At least an acre is recommended with 2 acres preferred to give more than adequate space for trucks and parking. Perhaps there is someone out there already holding suitable land willing to consider development on their holdings.

With all that needs to be done to determine which of the alternatives to pursue, it could be at least a year before an appropriate site can be identified. None of the MLS entries looked to be suitable to house a co-located retail site.

4. *Evaluate organizational possibilities for the facility, including, but not limited to, traditional cooperative, new generation cooperative, cooperative legal considerations, C Corporation, S Corporation, and a limited liability company.*

A new generation cooperative appears to have the best chance of success. Cooperatives are a good way to spread risk and to raise capital from cooperative owners. The “New Generation Cooperative” (NGC) is similar in structure to traditional cooperatives, but the NGC focuses on marketing niche strategies rather than the traditional cooperative roles, such as production and storage. Producers would continue to own, raise and transport animals.

Slaughter and processing could be a separate traditional cooperative. Or, after additional consideration it could also be owned under the NGC concept.

5. *Evaluate and explain Business Plan Financials, including but not limited to, start-up costs, operating costs, revenue projections, first year financial statement, and five-year financial forecast. Determine how many jobs will be supported by a processing and retail facility enterprise.*

Please refer to the previous alternatives matrix as well as the discussion in the body and pro formas in the appendices. One quickly comes to an understanding of the overall complexity and risk levels associated with any one of the offered alternatives. Even a small change in any one of the financial inputs or regulatory steps can result in variances in the outcomes.

6. *Provide project alternatives, including but not limited to, sale of prepared meats, incorporating other local agricultural products, incorporating the weekly farmer’s market, and including products from Oregon.*

Plausible Markets for “Natural” Meats

Local—“Local” is a term that varies in definition. The USDA uses 400 miles as the defining radius. This sounds more “regional” in nature and would then include areas such as the Humboldt County, San Francisco Bay area Sacramento,

Yreka, Rogue Valley, Roseburg and perhaps even up to Eugene, OR. The Del Norte economic profile suggests strongly that the product distribution must go well beyond the county to be successful.

Del Norte County provides too small a market to allow for much expansion of local “natural” meat sales. Also, because income levels in the county are below the state average, a premium “natural” meat product will find fewer shoppers per capita willing or able to pay the additional price. With producers already selling into much of what market does exist (i.e., direct sales from producer to consumer or farmer’s market), there is little room for growth within the Del Norte County market.

Regional—Northern California including the greater Bay Area is proving to be the most promising market territory, and by the USDA definition is “local”. The demand, the consumer values and the ability to support a premium product produced in this area. Access to the market is also an advantage. All indications are that this territory should be the focus for Del Norte “natural” meat products.

National—Access to this broader market may only be viable via Internet and mail order sales. Target marketing campaigns will enable finding Internet buyers to be willing to pay a premium for a quality organic meat product and the added convenience of shopping online.

International—The opportunity exists for potential sales to Asia, but would likely require additional “dry-aging” and/or other product enhancements to distinguish the product within a foreign market and to warrant pricing that would cover the additional costs of marketing and shipping overseas.

Sales Opportunities and Outlets

A number of sales opportunities and outlets are viable. In the early start-up years one of the least viable is a local retail outlet, having nothing to do with the quality of the product but rather do to the economic realities of the county. The recommendation here is for adding this business component as operating experience is gained.

Other potential sales outlets include:

- Direct Sales to Consumers
- Farmers’ Markets
- Community Supported Agriculture
- Farm to School
- Food co-operatives
- Retail: Grocery Stores and Natural Food Stores
- Supermarkets
- Restaurants
- Institutional Food Service
- Prisons
- Internet and Mail-Order Sales

- Specialty Stores
- Retail Sales Outlet
- Virtual Farmer’s Market—Website

7. *Research and recommend sources for project implementation funding.*

Since most meat processors are too small to attract venture capital, private financing and banks may be the best option (grants and grant/loan packages also may be an option). No pot of gold is waiting. The likelihood is high that we probably have to work with a local bank to finance any new plant. A best case scenario would be to have local interests fund the investment.

Given the project capital and start-up costs, it is highly likely that multiple sources of capital will be needed to fund the facility and marketing activities. Some potential sources are:

- Private Funding Sources
- Banks
- Venture Capital
- Rancher Investment
- Preferred Stock
- Loans and Grants

Recommendations

As you read through the contents of this study, you will quickly see the complexity of the challenges to be addressed. It’s not impossible but will require detailed attention to myriad details to achieve success. What is faced is the building of a business system that reaches from field to plate with all of the steps that must be successfully integrated along the way. Failure in any one of the steps will result in disappointment.

The custom slaughter with cut and wrap (alternative 4) would be the quickest to get up and running, would meet an immediate need and provide a basis for expansion into a full FSIS certified operation. This alternative’s payback and profitability could be improved over the modeling done in this study by pursuing less expensive options (e.g., reducing the size of the facility or use of freezer boxes purchased at an appliance store.).

Here is an outline of proposed steps for moving ahead. Time from decision to go forward to being ready to start building varies by the alternative chosen, but a year should be enough time to get all this done.

I. Establish project ownership.

Form a small team of interested parties with leadership from a partnership of the Resource Conservation District and the Tri-Agency Economic Development Association. This project has economic development potential for Del Norte.

Set up governance procedures for the project (project management, decision-making, change management, designate responsibilities, etc.).

II. Select the alternative to be pursued.

The team will review all the materials prepared to date, including using the financial modeling tool, to make a decision as to which of the alternatives will make the best business sense. The Consultant is more than willing to help develop and nurture this approach.

At the outset limit operations to slaughter and cut& wrap. Add other products over time (i.e., sausage, jerky, etc.). Defer the retail sales store outlet until the fundamentals of the meat processing operation are well-established.

Produce a refined project timeline.

Notify appropriate authorities of intent to proceed (federal, state and local).

III. Identify specific funding sources

Acquire assistance to create a comprehensive business plan; one that includes commitments from producers, distributors and other suppliers/vendors. Total number of identified meat animals in the county available in a year period means that there is sufficient supply to build a business, but just barely. There is some potential to draw animals from north Humboldt and southern Curry counties. The alternative selected needs to be reviewed carefully with an eye to meat animal populations.

Acquire assistance to create construction plans for the desired alternative. The plans in this document are a good place to start. Get federal and state authorities to review plans very early on.

Acquire assistance to prepare the HACCP and SSOP. The plan must be prepared by a graduate of an FSIS recognized program.

IV. Solidify a marketing strategy

Draw upon the numerous distribution opportunities for getting the product out to consumers.

Focus on developing a solid distribution network. Sales will drive everything. Without sales and the means to distribute product, the meat processing operation will fail.

Consider addition of a retail sales outlet after a period of operating the processing plant and getting distribution channels in place.

V. Develop a relationship with federal, state and local authorities.

Absolutely critical for success is an on-going good relationship with regulators.

VI. Acquire the meat processing facility

Build from scratch and/or buy the necessary equipment.

Gain approval from all levels of inspections.

VII. Operate the meat processing plant

Carefully monitor every detail to ensure rapid growth in learning how to operate the meat slaughter and processing business.

In summary, Del Norte can do this. Much diligent, hard work is ahead.

DEL NORTE MEAT PROCESSING AND RETAIL FACILITY FEASIBILITY ASSESSMENT

FEASIBILITY STUDY PURPOSE AND INTRODUCTION TO THE CHALLENGE

Request for Proposal Scope of Work

In this Feasibility Study you will find a response to the 7 areas posed for evaluation in the Request for Proposal issued by the Del Norte Resource Conservation District on April 26, 2010. We address those topics and provide a thorough, well-researched analysis and synthesis that substantially goes beyond the original Scope of Work. As such, it includes a comprehensive set of guidelines and background materials as a reference to help guide the implementation efforts.

The topic is quite complex. The Consultant recognizes the scarcity of funds for this exploring the matter at hand, especially when other feasibility studies of this magnitude have ranged well into the mid-\$200K range. So this feasibility study deliberately builds off of the work of others, which we attempt to fully attribute throughout this document, as this process has been repeated many times in the USA. It also includes original discovery and work particular to Del Norte.

The initial 7 areas of investigation include:

1. *Determine if a meat slaughtering, processing, packaging and market retail facility is feasible in Del Norte County, California.*
2. *Provide marketing recommendations for a successful venture, including researching the feasibility of grass fed beef produced locally marketed with a “natural beef label”. These options could include joining an existing national organization with a natural beef label, joining an existing regional organization with a natural beef label or creating a new natural beef label. Specific feasibility needs to be determined for the various levels of production including:*
 - a) *Management requirements of beef to meet “natural label” standards, including pasture feed mix, vaccines, antibiotic use and restrictions, age, weight, sex, cattle breeds, timing for sale, minimum number of cattle, etc.*
 - b) *Transport requirements*
 - c) *Processing requirements*
 - d) *Marketing requirements*
 - e) *Administrative requirements*
 - f) *Capital investment requirements*
3. *Locate available sites, complete preliminary design and develop cost estimates for the construction of a processing and retail facility. This task will include a discussion of alternative facility designs, such as mobile slaughtering vs. fixed site, as well as a thorough explanation of all health and safety requirements.*

4. *Evaluate organizational possibilities for the facility, including, but not limited to, traditional cooperative, new generation cooperative, cooperative legal considerations, C Corporation, S Corporation, and a limited liability company.*
5. *Evaluate and explain Business Plan Financials, including but not limited to, start-up costs, operating costs, revenue projections, first year financial statement, and five-year financial forecast. Determine how many jobs will be supported by a processing and retail facility enterprise.*
6. *Provide project alternatives, including but not limited to, sale of prepared meats, incorporating other local agricultural products, incorporating the weekly farmer's market, and including products from Oregon.*
7. *Research and recommend sources for project implementation funding.*

Feasibility Study Purpose

Feasibility studies can be useful for many situations, but they are typically conducted for new businesses, major expansions and entry into new enterprises. Feasibility studies can either be conducted before or while writing a business plan. A business plan answers the question, “*How will we develop the proposed business?*” A feasibility study provides an objective third-party analysis of the viability of the business idea and focuses on answering the essential question, “*Should we proceed with the proposed project idea?*” The activities of this study are directed toward answering this all-important question.

As such, the purpose of this study is to evaluate the feasibility of establishing an entity to slaughter, process and market locally grown meat products in Del Norte county. This study examines five areas of feasibility—economics, markets, technical matters, financial viability and management. Additionally, a goal of this study is to gage the interest level of producers in Del Norte County in forming a business entity to slaughter, process and market their livestock. This scope of work addresses ALL meat processing opportunities (i.e., cattle, lamb, goat, chicken, turkey, rabbit, emu, etc.) but with an emphasis on cattle (the phrase “beef equivalents” is used to assess other meat potentials).

Locally raised meat products are shipped out of Del Norte County for slaughter and processing. This meat may or may not come back to the area for resale. There is a growing trend to grow and sell county products locally. This trend could provide area producers the opportunity to sell their products to regional markets, restaurants and other area resellers, while creating jobs, adding value to their product and reducing distribution costs. It also is an opportunity to supply the meat needs of the locavore¹ movement.

¹ “Local food (also regional food or food patriotism) or the local food movement is a “collaborative effort to build more locally based, self-reliant food economies - one in which sustainable food production, processing, distribution, and consumption is integrated to enhance the economic, environmental and social health of a particular place” and is considered to be a part of the broader sustainability movement. It is part of the concept of local purchasing and local economies, a preference to buy locally produced goods and services. Those who prefer to eat locally grown/produced food sometimes call themselves locavores or localvores.” http://en.wikipedia.org/wiki/Local_food

The study includes an evaluation of economic and market opportunities; what types of jobs will be created, how many will be needed and the indirect jobs resulting from reselling locally grown meats. Critical to the success of a small scale meat processing facility in Del Norte County is an understanding of the supply, demand, distribution channels and legal logistics of marketing livestock and poultry. Ultimately, this should lead to a more direct market chain—fewer intermediaries—from farmer to consumer in Del Norte County and, hence, more local dollars circulating in local communities.

Methodology

Use of Existing materials

We are fortunate in that 1) this has been done before and 2) there are very recent, credible, in-depth studies (including studies done in northern California). A number of studies and high-quality resources already exist, a number of which are already in the Consultant's repository of studies and white papers. These existing well-prepared and researched resources can serve as a starting point for this feasibility study. As such, we made every effort not to “re-invent the wheel” where it made sense. Research resources not shown in the footnotes can be found at <http://www.jirwinconsulting.com/delnortessmallscalemeatprocessing.htm>. It is a long list!

Demand for Slaughter and Processing Services Survey

We conducted a Demand for Slaughter and Processing Services Survey (non-random) in October and November, 2010. Six different ways to respond were provided, including:

- 1) A Word document to print scan and/or send by email or regular mail
- 2) A Word form to fill in, save and email or print and send by regular mail
- 3) A PDF to print, fill out, scan and/or send by email or regular mail
- 4) A fillable PDF form to type in entries, save, print, scan and/or send in by email or regular mail
- 5) An online Survey Monkey survey form
- 6) Paper surveys sent to over 80 addresses obtained from the Del Norte Resource Conservation District, referrals and the Livestock Subsidy Database.

The producer survey assessed the following:

- Location
- Livestock production
- Time in the livestock industry
- Potential and interest to raise livestock for slaughter and processing
- Harvest capacity(all species)
 - How many animals do you harvest per year?
 - How many animals do you harvest in each 3-month period?
 - How many animals could you harvest in the future with better access to a reliable USDA- inspected facility?
- Current slaughter location(s)
- Miles traveled (one way)
- Estimated cost per animal for slaughter (all species)
- If a new slaughter facility were to be established, what qualities would it need for you to

- choose to bring your animals there?
- Current meat processing location
 - Miles traveled (one way)
 - Estimated cost per animal for processing (all species)
 - If a new processing facility were to be established, what qualities would it need for you bring your animals there?
 - Where do you currently sell your finished meat?
 - What characteristics do you use to market your product?
 - Interest in selling whole animals or cut/wrapped
 - If the slaughter/processing facility were to manage the transportation of live animals from farm to facility, would you find this helpful?
 - Interest in investing in a slaughter facility
 - If a cooperative or other form of business entity of local producers was established to slaughter/process and/or market livestock products, what functions would you want this entity to do for your farm/ranch?
 - Other comments?
 - Contact information

Survey Publicity

A well-advertised public meeting was held to announce the survey and to address any questions that may have come up. Two two-column notices were published twice in October, 2010 in The Del Norte Triplicate and the Curry Coastal Pilot.

We also had an above the fold front page article published in the Triplicate. In each of these, full consultant contact information was provided.

Face-to-face meetings

A well-publicized² meeting open to the public and for the purposes of kicking off the survey was held in October, 2010 at the Del Norte Resources Conservation District's head quarters in Smith River. Attendance consisted mainly of DN RCD BOD and a few other interested parties.

Small scale meat processing seminar

Attended a day-long small scale meat processing seminar in Carson City, NV in September, 2010. It was sponsored by the University of Nevada and USDA. The focus was on mobile slaughter units (MSU) and USDA Food Safety and Inspection Services (FSIS) regulations. Restaurateurs and other purchasers of meat were presenters as well.

Field investigation

A number of drives through the counties of Del Norte and Curry, from Klamath to Langlois, were used to visually inspect herds. These inspections confirmed, as best as possible, the inventory of meat animals in the two counties.

Farmer's Markets in Curry, Del Norte, Josephine and Jackson counties were also visited over the course of the summer until fall, when the ceased operations.

² Triplicate and Curry Coastal Pilot

How to Use the Study and Supporting Materials

For many the Executive Summary will be sufficient. For those who wish to really dig into the matter, we've supplied a wealth of information and data collected from many sources.

The entire study and all supporting resources (appendices, white papers, etc.) are included on a CD in the back of the printed document. You will also find the key research materials materials posted online at <http://www.jirwinconsulting.com/delnortesmallscalemeatprocessing.htm> .

Introduction to the Challenge

Across the country we see a dramatic decline in the number of small slaughter and meat processing facilities.³ This trend includes Del Norte County where there is no US Department of Agriculture (USDA) certified slaughterhouse and processing facility.

Across the country, demand is increasing for meat from cattle, sheep and other animals raised on the pastures of local and regional farms and ranches. But satisfying this burgeoning demand is no easy task. Decades of agribusiness and economic trends tilted toward centralizing animal agriculture in industrial factory settings have hollowed out the infrastructure needed to produce and market meat close to population centers. The long, slow demise of local small slaughter and processing operations is now preventing farmers and ranchers from fully satisfying rising consumer demand for meat from sustainably raised livestock.

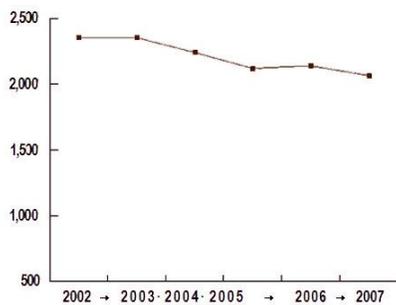


Figure 1—U.S. Slaughter Facilities⁴

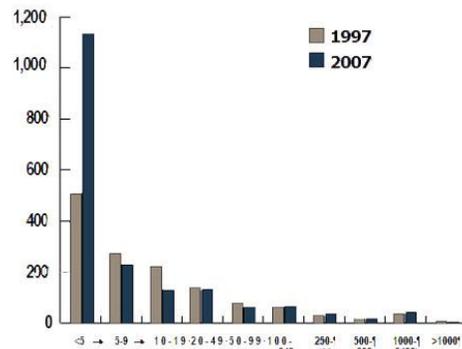


Figure 2—Red Meat Slaughterhouses by Employees⁵

This decline is part of a general trend in U.S. agriculture. With slaughter and processing operations, more are either going out of business or reverting to being custom exempt operations that are essentially restricted to processing animals from the small niche farms and not putting the meat into commercial markets. The result is that these high quality meat

³ According to a 2009 report by the consumer rights advocacy group Food & Water Watch, the number of state and federally inspected facilities nationwide shrank 20% from 2002 through 2007. Reasons for the decline vary. Consolidation is a major factor. As of 2005, nearly 85% of U.S. beef was being processed by the four top companies—Cargill, Tyson, Swift and National Beef Packing. “Slaughterhouse options shrink for small farmers”, USA Today, http://www.usatoday.com/money/industries/food/2010-05-27-slaughterhouses27_ST_N.htm, May 2010

⁴ USDA, *Livestock Slaughter*

⁵ U.S. Census Bureau

products are not available in most local grocery stores or restaurants. Likewise, the large, out-of-state industrial slaughterhouses are expanding. Federal policy appears to have exacerbated this expansion at the expense of local, small scale federally inspected processing.

The consolidation of U.S. agriculture, which has accelerated in recent decades, is a chain in which food passes through a number of steps on the path from farmers to consumers, including livestock slaughter and meat processing. The trend toward centralized, industrial-scale food production and processing is characterized to a great degree by firms working in clusters to control the food system from “the gene to the supermarket shelf.” This consolidation is driven by horizontal and vertical integration, as well as global expansion. Both types of integration have played key roles in reducing the number of small slaughter operations.

Because very few companies now buy livestock, many farmers and ranchers are forced to sell at whatever low prices the agribusiness giants offer. Today, control of the beef market has extended far beyond 40 percent. By 2005, Tyson, Cargill, Swift & Co. and National Beef Packing were slaughtering 83.5 percent of cattle.⁶ The control of the market by four firms allows them to exercise a “disproportionate influence on not just the price of a commodity, but also the quantity, quality and location of production.”⁷

The unprecedented level of market consolidation effectively eliminates free market competition from the way that independent farmers and ranchers sell their animals. One mechanism used by meatpackers to depress prices paid to ranchers is to buy cattle far in advance of the time they are ready for slaughter. Livestock prices are reduced when packers own the livestock they slaughter and do not need to use auctions or other open markets to purchase animals. These “captive supplies”—livestock owned outright by packers or controlled through contracts with farmers and ranchers—has meant lower prices, a smaller share of the retail dollar and shrinking livestock markets for farmers and ranchers.

Meat from federally-inspected meat plants can be sold across state lines. In contrast, products from state-inspected plants have been restricted to being sold only within the state. A rebirth of small slaughterhouses would breathe new life into small communities everywhere, give farmers and ranchers more options for processing their sustainably raised livestock and satisfy growing consumer demand for healthy meat products.

For just about any aspect of food and farming in the United States, a pattern has emerged: a movement toward very small, specialty farms that grow for a relatively small niche market and with a simultaneous potential increase for the economy of an area.

We already hear that a large number of northern California meat products travel out of state to be processed. As such Del Norte’s high quality products are co-mingled with those grown in other areas of the country. No attempt to segregate and label Del Norte product is in effect. What comes back to Del Norte consumers is from anywhere in the country—it has been said

⁶ “Concentration of Agricultural Markets”, Hendrickson, M. and W. Heffernan, www.nfu.org/issues/economic-policy/, April 2007

⁷ Ibid, “Concentration of Agricultural Markets”

that a single pound of commercially available hamburger may contain the meat from as many as 1,200 animals (*Omnivore's Dilemma*, Polan).

Evidence appears to support a hypothesis that Del Norte County jobs also are shipped out of state along with the high-quality animals.

The combination of a meat slaughtering, processing, packaging and market retail facilities may be feasible in Del Norte County. Mobile slaughter facilities take this model one step further and bring a kill floor in the form of a trailer to the farm for handling the slaughter on site. The success of a few of these projects nationally has resulted in state-level initiatives across the country to explore the feasibility of such facilities, determine the level of producer interest, and provide a means for licensing their operation.

Del Norte County is at a point where an understanding of how introducing a federally certified slaughterhouse (fixed or portable) could breathe new life into local economies, give farmers and ranchers more options for processing their sustainably raised livestock and satisfy growing consumer demand for locally grown healthy meat products.

This study seeks to understand the myriad factors of establishing a solvent and sustainable federally certified slaughterhouse (fixed or portable) in Del Norte County and the implications regionally—direct and indirect—of supply, demand, distribution channels and legal logistics of marketing livestock and poultry. Also considered is a non-federally certified custom slaughter and processing approach.

This is a very complex topic with many facets to comprehend before making an investment decision. As such, the reader will find this study covers a lot of territory, placing in one document a full range of resources to assist in decision-making.

Despite the odds stacked against them, some small slaughterhouses and processors are finding ways to survive.

STAKEHOLDERS

Definition

Person, group, or organization that has direct or indirect stake in an organization because it can affect or be affected by the organization's actions, objectives, and policies.⁸

Key stakeholders in a business organization include creditors, customers, directors, employees, government (and its agencies), owners (shareholders), suppliers, unions, and the community from which the business draws its resources. Although stake-holding is usually self-legitimizing (those who judge themselves to be stakeholders are de facto so), all stakeholders are not equal and different stakeholders are entitled to different considerations.

⁸ <http://www.businessdictionary.com/definition/stakeholder.html>

Del Norte County and Regional Stakeholders

For purposes of this feasibility study we include the following as stakeholders:

- **Producers**—Ranchers, farmers, 4-H and anyone growing animals for meat.
- **Distributors**—Wholesalers, brokers and anyone involved with the logistics and distribution of meat products.
- **Consumers**—Retail purchasers of meat products (direct from the producer or over a counter), farmer’s markets
- **Interested Parties**—Healthy food advocates, food and nutrition advocates and anyone that has an interest, direct or indirect, in the production, processing, distribution, preparation and consumption of meat.

CURRENT MEAT PROCESSING AND SALES STATUS

National Animal Inventories and Processing Capabilities

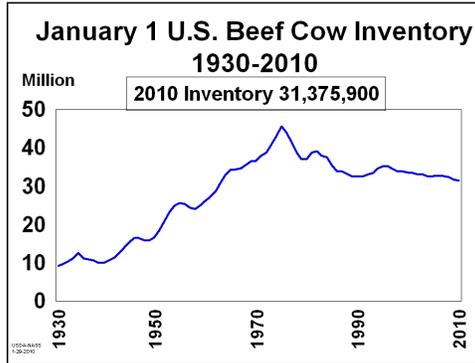


Figure 3—Beef Cows: Inventory on January 1 by Year⁹

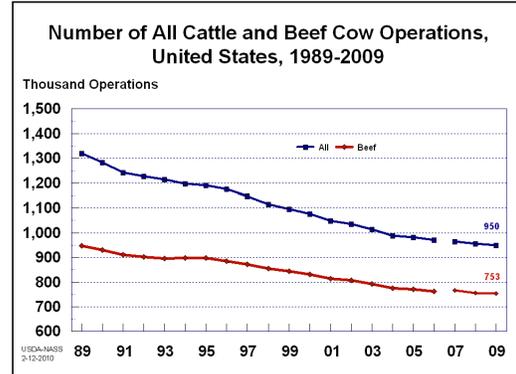


Figure 4—All Cattle & Beef Cows: Number of Operations by Year, 1989-2009¹⁰

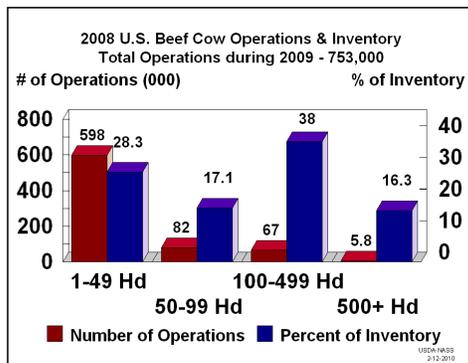


Figure 5—Beef Cows: Operations and Inventory by Size Group¹¹

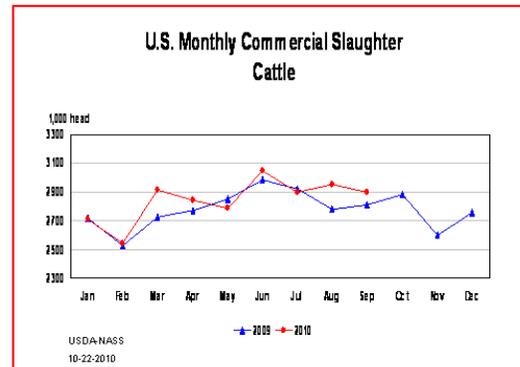


Figure 6—Cattle: Commercial Slaughter Number of Head by Month and Year, 2010¹²

⁹ http://www.nass.usda.gov/Charts_and_Maps/Cattle/bcow.asp

¹⁰ http://www.nass.usda.gov/Charts_and_Maps/Cattle/acbc_ops.asp

¹¹ http://www.nass.usda.gov/Charts_and_Maps/Cattle/bcow_ops.asp

¹² http://www.nass.usda.gov/Charts_and_Maps/Livestock_Slaughter/caheadx1.asp

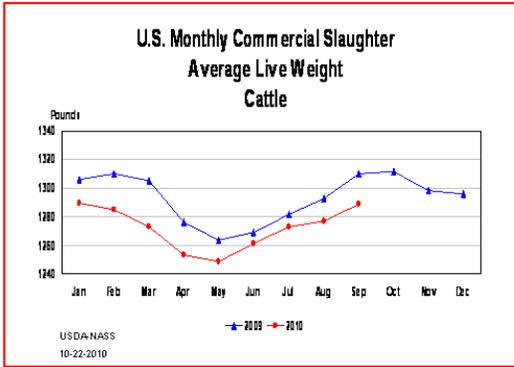


Figure 7—Cattle: Commercial Slaughter Average Liveweight by Month and Year¹³

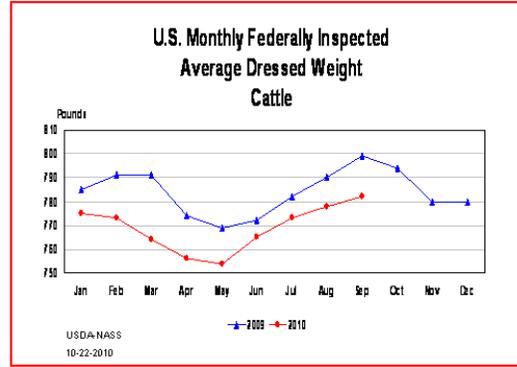


Figure 8—Cattle: Federally Inspected Average Dressed Weight by Month and Year, 2009-10¹⁴

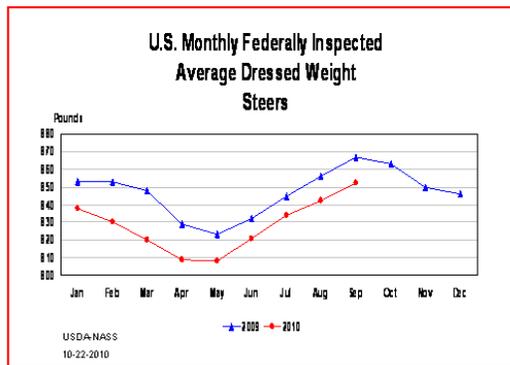


Figure 9—Steers: Federally Inspected Average Dressed Weight by Month and Year, 2009-10¹⁵

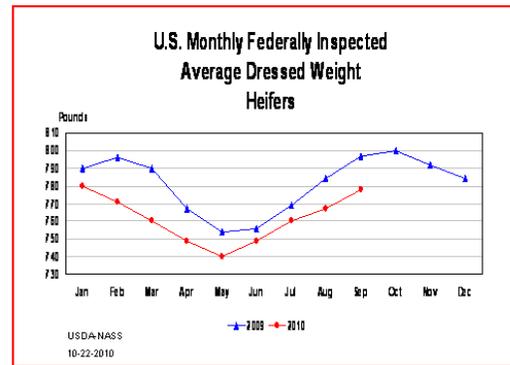


Figure 10—Heifers: Federally Inspected Average Dressed Weight by Month and Year¹⁶

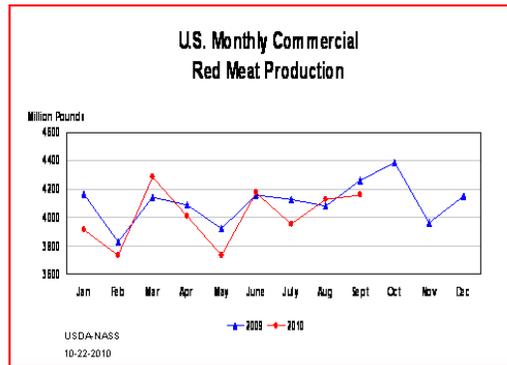


Figure 11—Livestock Slaughter: Red Meat Production by Month and Year, 2009-10¹⁷

¹³ http://www.nass.usda.gov/Charts_and_Maps/Livestock_Slaughter/calvwx5.asp

¹⁴ http://www.nass.usda.gov/Charts_and_Maps/Livestock_Slaughter/cadrwx7.asp

¹⁵ http://www.nass.usda.gov/Charts_and_Maps/Livestock_Slaughter/stdrwx9.asp

¹⁶ http://www.nass.usda.gov/Charts_and_Maps/Livestock_Slaughter/hdrwx10.asp

¹⁷ http://www.nass.usda.gov/Charts_and_Maps/Livestock_Slaughter/rdmtprod.asp

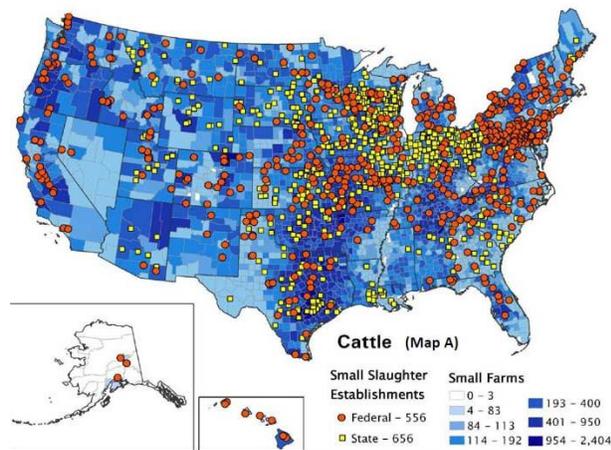
National Meat Processing Locations¹⁸

FSIS is making available six maps (next pages): two for cattle (all adult market classes of cattle and heavy calves); two for swine (all market classes); and two for young chickens. Map A for each species shows the densities of small producers for every county in the United States: the darker the shade of blue, the greater the number of producers in that county. The producers enumerated are small, with an approximate annual income of \$250,000 or less. Overlaid in Map A are the locations of small slaughter establishments for the species in question.¹⁹

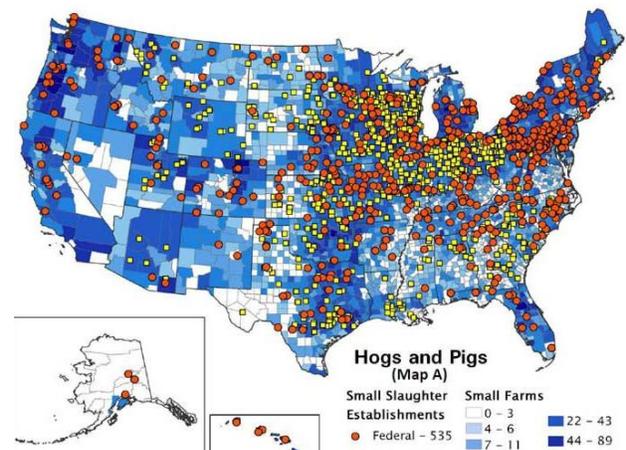
Map B for each species again shows the locations of small slaughter establishments, but shades only the counties where both (1) the number of small producers is equal to or greater than the approximate median for that species, per county, and (2) there is no slaughter establishment. Thus, the cream-colored areas on Map B for each species indicate counties that either have a number of producers lower than the national median or have a slaughter establishment for the species in question. In short, Map B shows counties with relatively large concentrations of small producers of a species, but no slaughter establishment.

In all of the maps, the following types of slaughter facilities are **not** shown:

- facilities that conduct only custom slaughter operations;
- facilities that slaughter only species not subject to mandatory inspection under the Federal Meat Inspection Act or the Poultry Products Inspection Act (PPIA); and
- facilities that slaughter poultry only under one of the exemptions in the PPIA.



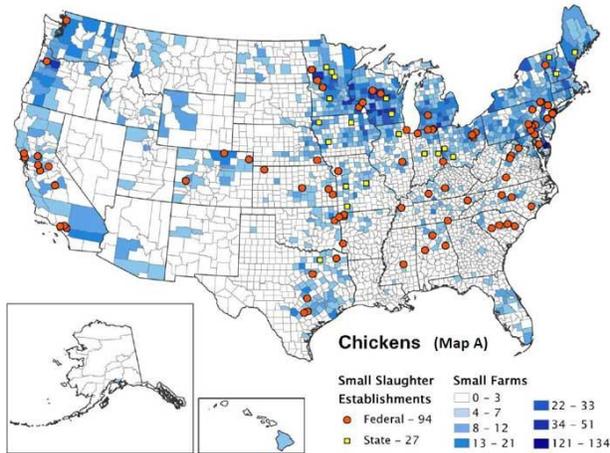
Map 1—U.S. Small Slaughter Establishments: Cattle



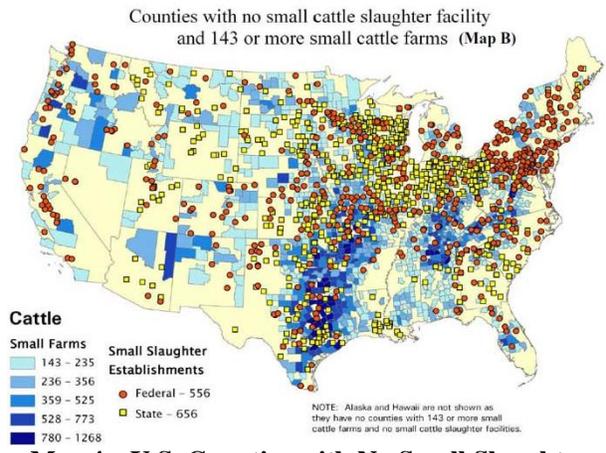
Map 2—U.S. Small Slaughter Establishments: Hogs and Pigs

¹⁸ Slaughter Establishment Availability – Updated Maps, http://www.fsis.usda.gov/PDF/Slaughter_Estab_Maps_080910.pdf, August 9, 2010

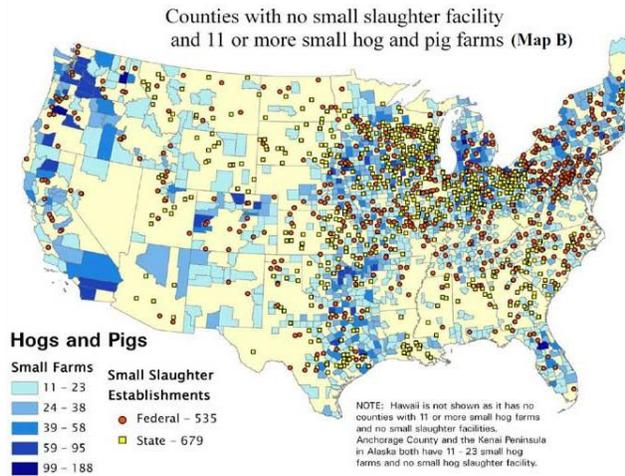
¹⁹ The establishments shown are all either “small” or “very small” as defined in the 1996 HACCP regulations. “Small” slaughter establishments have between 10 and 499 employees. “Very small” slaughter establishments have fewer than 10 employees or less than \$2.5 million in annual sales. For some establishments without specific size data, we have assumed they are small or very small. *ibid*, Slaughter Establishment Availability – Updated Maps



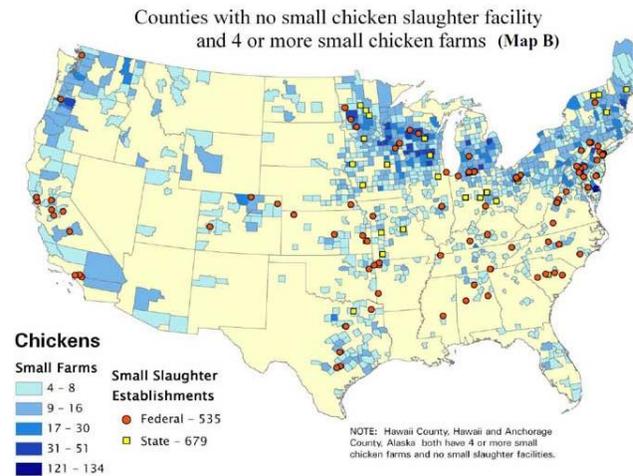
Map 3—U.S. Small Slaughter Establishments: Chickens



Map 4—U.S. Counties with No Small Slaughter Facility: Cattle



Map 5—U.S. Counties with No Small Slaughter Facility: Hogs and Pigs



Map 6—U.S. Counties with No Small Slaughter Facility: Chicken

Regional Animal Inventories

Del Norte County Crop Report

<i>Year</i>	<i>Cattle</i>	<i>Calves</i>	<i>Sheep, Lambs</i>
2008	11,450	3,510	290
2009	8,750	2,720	310

Figure 12—Del Norte County Crop Report²⁰

There appears to be a notable decline in Cattle and Calves production from 2008 to 2009. Sheep and Lambs increased in the same period.

²⁰ Del Norte County Crop Report, Kenneth R. Smith, Agricultural Commissioner, August 2010

The following tables showing animal inventories are sourced from the USDA National Agricultural Statistics Service.²¹ Note the discrepancy between the federal and county inventory numbers.

A drive through Del Norte County in the fall to visually count cattle suggest the real number of cattle is somewhere between the reported inventories. Further muddying the inventory numbers are responses from producers on a couple of occasions. When asked how many cattle they held, the number varied each time they were asked.

So we don't really know exactly how many cattle targeted for beef are in the county. However, for purposes of this study, we will use the federal numbers in calculations as they seem "good enough" for this level of assessment.

Federal Animal Inventories
Del Norte County, California

<i>Year</i>	<i>Cattle All</i>	<i>Beef Cows</i>	<i>Milk Cows</i>
2001	7,000 head	1,500 head	
2002	6,000 head	1,000 head	
2003	10,000 head		
2004	10,000 head		
2005	11,000 head	1,000 head	3,000 head
2006	12,000 head	1,000 head	
2007	14,000 head	1,000 head	
2008	14,000 head	1,000 head	3,900 head
2009	14,000 head		
2010	17,000 head	1,000 head	

Table 1—Del Norte County, California, Cattle and Calves
No Del Norte County data for chickens, goats, hogs & pigs or sheep. We know this not to be true based on student sales at the fair.

Humboldt County, California

<i>Year</i>	<i>Cattle All</i>	<i>Beef Cows</i>	<i>Milk Cows</i>
2001	71,000 head	21,000 head	16,800 head
2002	70,000 head	22,000 head	16,700 head
2003	63,000 head	22,000 head	17,000 head
2004	60,000 head	22,000 head	16,000 head
2005	62,000 head	20,000 head	16,100 head
2006	55,000 head	20,000 head	16,200 head
2007	54,000 head	20,000 head	14,200 head
2008	57,000 head	17,000 head	14,400 head
2009	54,000 head		14,900 head
2010	52,000 head	16,000 head	15,100 head

Table 2—Humboldt County, California, Cattle and Calves
No Humboldt County data for chickens, goats, hogs & pigs or sheep.

²¹ http://www.nass.usda.gov/QuickStats/PullData_US_CNTY.jsp

Siskiyou County, California

<i>Year</i>	<i>Cattle All</i>	<i>Beef Cows</i>	<i>Milk Cows</i>
2001	67,000 head	34,000 head	1,700 head
2002	63,000 head	31,000 head	1,900 head
2003	65,000 head	35,000 head	1,500 head
2004	62,000 head	34,000 head	1,500 head
2005	64,000 head	33,000 head	1,600 head
2006	60,000 head	33,000 head	1,500 head
2007	58,000 head	34,000 head	1,400 head
2008	56,000 head	30,000 head	900 head
2009	53,000 head	32,000 head	700 head
2010	53,000 head	30,000 head	600 head

Table 3—Siskiyou County, California, Cattle and Calves
No Siskiyou County data for chickens, goats, hogs & pigs or sheep.

Curry County, Oregon

<i>Year</i>	<i>Cattle All</i>	<i>Beef Cows</i>
2000	9,800 head	
2001	10,000 head	
2002	10,000 head	4,500 head
2003	6,000 head	3,100 head
2004	7,300 head	3,600 head
2005	7,600 head	4,600 head
2006	7,500 head	4,700 head
2007	6,000 head	4,000 head
2008	8,000 head	5,000 head
2009	7,300 head	4,900 head
2010	9,000 head	5,300 head

Table 4—Curry County, Oregon, Cattle and Calves
No data listed for chickens, goats or hogs & pigs.

<i>Year</i>	<i>All Sheep and Lambs</i>
2000	16,000 head
2001	20,000 head
2002	21,000 head
2003	17,500 head
2004	13,000 head
2005	14,500 head
2006	12,000 head
2007	12,000 head
2008	16,400 head
2009	16,000 head
2010	20,000 head

Table 5—Curry County, Oregon, Sheep

Coos County, Oregon

Year	Cattle All	Beef Cows	Milk Cows
2000	20,000 head	12,000 head	5,000 head
2001	19,000 head	10,000 head	2,800 head
2002	19,000 head	10,500 head	2,900 head
2003	19,000 head	8,000 head	2,600 head
2004	19,600 head	10,000 head	2,400 head
2005	20,200 head	9,000 head	2,900 head
2006	20,000 head	9,000 head	3,200 head
2007	18,000 head	8,500 head	3,500 head
2008	20,000 head	10,000 head	2,900 head
2009	20,000 head	9,000 head	3,000 head
2010	17,700 head	9,000 head	

Table 6—Coos County, Oregon, Cattle and Calves
No data listed for chickens, goats or for hogs & pigs.

Year	All Sheep and Lambs
2000	12,000 head
2001	17,000 head
2002	16,500 head
2003	13,000 head
2004	10,000 head
2005	10,000 head
2006	10,400 head
2007	7,000 head
2008	9,500 head
2009	9,700 head
2010	10,000 head

Table 7—Coos County, Oregon, Sheep

Douglas County, Oregon

Year	Cattle All	Beef Cows
2000	54,300 head	26,000 head
2001	54,000 head	20,000 head
2002	53,000 head	18,000 head
2003	51,500 head	20,600 head
2004	49,000 head	18,000 head
2005	50,000 head	20,600 head
2006	48,000 head	20,000 head
2007	41,000 head	17,400 head
2008	49,000 head	21,000 head
2009	47,000 head	20,600 head
2010	50,500 head	21,000 head

Table 8—Douglas County, Oregon, Cattle and Calves

No data for chickens or goats.

Year	Hogs All
2001	1,000 head
2002	900 head
2003	1,200 head
2004	1,200 head
2005	1,100 head
2006	500 head

Table 9—Douglas County, Oregon, Hogs and Pigs

Year	All Sheep and Lambs
2000	28,500 head
2001	29,000 head
2002	30,000 head
2003	34,500 head
2004	34,400 head
2005	34,200 head
2006	30,000 head
2007	30,000 head
2008	26,600 head
2009	27,500 head
2010	27,000 head

Table 10—Douglas County, Oregon, Sheep

Student Animals Sold and Processed Through the 2010 Fair²²

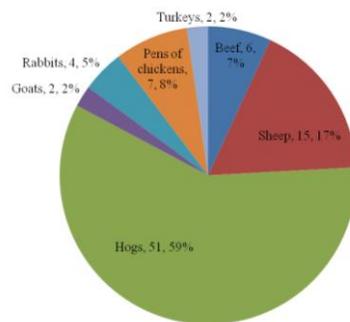


Figure 13—Student Animals Sold/Processed at 2010 Fair

²² Janet Jones, Del Norte County Fairgrounds, November 2010

They are hoping for more cattle next year but that remains to be seen. One influencing factor may be a new requirement for insurance for each animal that will come in at around \$40 each.²³ It remains to be seen what impact this may have (it pushes up the entry costs could result in a price per pound that exceeds market rates). In any event the animals are processed by Redwood Meats.

Stationary Meat Processing Capabilities in or Near Del Norte County

Currently, there is no FSIS certified meat processing capability in Del Norte County. Producers use one of the following stationary facilities:

B & D Meats *
 5357 North Umpqua Hwy.
 Roseburg, OR 97470
 (541) 673-6323

Bartels Packing *
 88091 Central Rd
 Eugene, OR 97402
 (541) 935-3839

Cartwright's **
 825 Union Avenue
 Grants Pass, Oregon
 (541) 479-0321

Mohawk Valley Meats *
 91167 Marcola RD
 Springfield, OR 97478
 (541) 746-4411

Redwood Meats *
 2440 Myrtle Avenue
 Eureka, Eureka, CA 95501-3499
 (707) 442-3797

Taylor's Sausage **
 P.O. Box 188
 525 Watkins Street
 Cave Junction, OR 97523
 (541) 592-4189

* = FSIS Certified²⁴
 ** = Meat products manufacturing



Figure 14—Redwood Meats



Figure 15—Redwood Meats (Google map)

Note that the Redwood Meats facility is surrounded by some land but predominantly in a mixed residential/commercial area.

²³ Helen Ferguson, November 2010

²⁴ http://www.extension.org/mediawiki/files/9/99/Oregon_USDA_slaughter_plants.pdf

Custom Mobile Slaughter in or Near Del Norte

The likelihood is very low that any of these would travel to Del Norte. However, these are roughly speaking “in the neighborhood.” None of these are federally certified.

4 STAR MEAT COMPANY INC
90362 Prairie Road
Eugene, OR 97402
(541) 689-1350

ALPINE MEAT CO INC
1313 Sw Spruce Street
Grants Pass, OR 97528
(541) 476-6838



Figure 16—Alpine Custom Butchering

BERT'S CUSTOM BUTCHERING
Eagle Point, OR 97524
(541) 531-6592

BUSSMANN MOBILE SLAUGHTER
Bandon, OR 97411
(541) 5672011



Figure 17—Bussman’s Mobile Slaughter

BUTCHER SHOP
1532 South Shasta Avenue
Eagle Point, OR 97524
(541) 830-3369



Figure 18—The Butcher Shop

CHUCKY'S IN HOLLEY-WOODS
25057 Springer Road
Sweet Home, OR 97386

(541) 367-8867

CUSTOM MEAT CO
2355 West 7th Place
Eugene, OR 97402
(541) 345-4213

DON'S MOBILE SLAUGHTERING
Roseburg, OR 97470
(541) 672-1004

MEAT CUTTING ROOM
Coquille, OR 97423

OAKLAND LOCKERS
133 E 4th Ave
Oakland, OR 97462
(541) 459-2722

SHOE'S MOBIL SLAUGHTER &
PROCESSING LLC
Eugene, OR 97405

Regional Rendering Facilities

Each year in the US, 286 rendering plants quietly dispose of more than 12.5 million tons of dead animals, fat and meat wastes.²⁵

Rendering establishments and collection centers are exempt from inspection by the United States Department of Agriculture (USDA) but require inspection in California.²⁶

Per an Oregon Publish Broadcasting news article, Oregon no longer has any rendering plants and about 100 cows per week are going to landfills.²⁷ However, according to a search of the Oregon Animal Health and Identification Licenses data base, there are three licensed facilities in Oregon.²⁸

²⁵ "A Look Inside a Rendering Plant," Gar Smith,

<http://www.felineinstincts.com/successStories/closerlookatarenderingplant.html>

²⁶ http://www.cdfa.ca.gov/ahfss/pdfs/legislation/Rendering_Notice.pdf

²⁷ "Rendering Crisis Hits Oregon Livestock Industry," Kristian Foden-Vencil, Oregonian, <http://news.opb.org/article/3323-rendering-crisis-hits-oregon-livestock-industry>, October 21, 2008, Portland, OR

²⁸ http://oda.state.or.us/dbs/licenses/hitlist.lasso?&-op=bw&mail_state=or&-op=bw&lic_type=48&-op=gte&lic_expire_date=11/15/2010&-op=eq&Lic_status_1=A&-op=bw&-division=ahid&-sortfield=mail_name&-sortorder=ascending&-maxrecords=5&-skiprecords=0

Denley Inc
21190 SW Oregon Street
Sherwood, OR 97140-7932
(503)625-6616
Denleyinc.com
Portland-Vancouver, OR-WA
Metro Area

Omega Farms
Noti, OR 97461
(541) 935-1588
Horse burial

Rest Assured Pet
Crematorium, LLC
Springfield, OR 97477
(541) 746-0244
*Private and communal
cremation for pets up to 300
lbs.*

Northern California also has a very limited number of rendering plants.

North State Rendering of Chico, California
15 Shippee Road
Oroville, CA 95965-9297
(530) 343-6076

Sacramento Rendering Company
11350 Kiefer Boulevard
Mather, CA. 95830
1-800-339-6493

North State has a Del Norte presence in Crescent City and provides offal pick up in the area @ \$75/1,000 lbs., hides at \$12-20 each. For animals over 30 months brains and spinal cords must not be included and will need to go to a landfill.²⁹

Current Processors, Distribution Channels and Transportation

Producers

Currently conventional, grass-fed and organic beef are all under production; organic representing the least number of cattle, the remainder as grass-fed, natural and conventional beef. There are approximately 1,000 cattle targeted for beef in Del Norte with what looks to be perhaps a dozen larger-scale producers with up to 70 agricultural entrepreneurs in the county, not all of which are involved in meat production. Many of the county's producers are raising animals for their friends, family or themselves.

Processors

Redwood Meats, located in Eureka, CA, is a USDA certified meat processor. They currently process approximately 20+ head of beef per week.

All other processing in the area is not federally certified. There is no custom slaughter operation in Del Norte. Custom slaughter on the owner's property is conducted by operators from out of the county.

Distributors/brokers

Currently, meats processed under federal certification are handled by entities substantially removed from the region. Del Norte meat is often combined with meat from other areas. As such, Del Norte meat is distributed through any number of outlets without reference to its origin.

Retailers

None of the county retailers sell Del Norte meats. Without federal certification, this would be illegal.

²⁹ North State Rendering of Chico, Rick Moore, 707.465.6634, March 4, 2011

Retail meat sales do occur directly between the producers and customers. The total volume of these sales is unknown. Anecdotal information suggests this could be a sustainable business in Del Norte.

Transportation

For processing at a Redwood Meats or for sales through the Fortuna Auction Yard, producers largely provide their own transport. For those producers that sell their meat a more distant locations, they provide their own transport or use the services of a commercial transport business.

MARKET ASSESSMENT

County Economic Profile³⁰

Del Norte County residents have personal overall income of \$750,128 with per capita personal income of \$25,980. Earnings by place of work are at \$456,859 or 61% of all income in the county. Retirement income accounts for a total of \$187,708 or 25% of all income in the county.

The number of proprietors is 2,802 or 10% of the population. The total number of farm proprietors is 70, 3% of proprietors and .2% of the population.

Type of workers:³¹

- Private wage or salary: 54%
- Government: 35%
- Self-employed, not incorporated: 10%
- Unpaid family work: 1%

Races in Del Norte County, California:

- White Non-Hispanic (70.1%)
- Hispanic (13.9%)
- American Indian (9.1%)
- Black (4.3%)
- Two or more races (4.1%)
- Other race (3.9%)
- Other Asian (1.5%)

(Total can be greater than 100% because Hispanics could be counted in other races)

Median resident age:	36.4 years
California median age:	33.3 years

Males:	15,186 (55.2%)
Females:	12,321 (44.8%)

³⁰ CA30 Regional economic profiles, Del Norte, CA, Regional Economic Information System, Bureau of Economic Analysis, <http://www.bea.gov/regional/reis/action.cfm>, April 2010

³¹ City Data, http://www.city-data.com/county/Del_Norte_County-CA.html

The 2006-2016 fastest growing occupation in Del Norte, Humboldt, Lake, and Mendocino Counties is Correctional Officers and Jailers.³² Here are the top 10 fastest growing occupations:

1. Correctional Officers and Jailers
2. Elementary School Teachers, Except Special Education
3. Probation Officers and Correctional Treatment Specialists
4. Retail Salespersons
5. Forest and Conservation Workers
6. Middle School Teachers, Except Special and Vocational Education
7. Bus Drivers, School
8. Farm, Ranch, and Other Agricultural Managers
9. Police and Sheriff's Patrol Officers
10. Home Health Aides

The top 50 fastest growing occupations listed do not include meat cutters or butchers.

The 2006-2016 occupations with the most job openings³³ make no reference to meat cutters or butchers. Here are the top 10:

1. Cashiers
2. Retail Salespersons
3. Waiters and Waitresses
4. Personal and Home Care Aides
5. Farmworkers and Laborers, Crop, Nursery, and Greenhouse
6. Combined Food Preparation and Serving Workers, Including Fast Food
7. Counter Attendants, Cafeteria, Food Concession, and Coffee Shop
8. Elementary School Teachers, Except Special Education
9. Office Clerks, General
10. Teacher Assistants

Unemployment remains high:

Del Norte Unemployment Rate	13.8%
CA	12.7%
U.S.	9.8%

Table 11—Unemployment Rate: January 2011

Niche Meat Market Demand Study

A very recent northern California (Mendocino County) niche meat market demand study provides us with pertinent data with direct applicability to the Del Norte feasibility study.³⁴

³² 2006-2016 Fastest Growing Occupations: Del Norte, Humboldt, Lake, and Mendocino Counties, <http://www.calmis.ca.gov/file/occproj/norcoastoccfatest.xls>

³³ 2006-2016 Occupations with the Most Job Openings: Del Norte, Humboldt, Lake, and Mendocino Counties, <http://www.calmis.ca.gov/file/occproj/norcoastoccmmost.xls>

- Demand for niche meats is growing rapidly in the U.S. In 2006, sales of natural and organic beef in grocery stores increased over the previous year by 28.4% in dollar value and 24.5% in pound value. Three-fourths of the respondents expected their niche meat volumes to increase over the next year and also over the next three years.
- Consumer demand for niche meats is often motivated by beliefs that natural and organic meats are fresher, have better nutritional value and taste, long-term health benefits than conventional meats and that the animals are healthier and better treated than conventional livestock.
- The most popular red meats are beef, pork and lamb. The most popular niche categories are naturally-raised (no hormones or antibiotics administered during the animal’s lifetime, often referred to as “never/ever”), grass-fed, and local.
- Price premiums for niche meats (over conventional) depend on the cut, niche attribute, brand and shifts in conventional pricing. Premiums of 10-30% were common, though certified organic meats were typically much higher.
- Across all three market sectors, fresh meats are preferred over frozen. Purchases of whole carcasses are usually limited to hogs and lambs; beef carcasses were typically considered too large to handle inhouse. Restaurants, Institutional Food Service Providers (IFSPs) and distributors are more willing to work with seasonally available meats than are retailers.
- More than half (59%) of the restaurant/IFSP respondents said that high-end cuts were the most popular, while the rest use more burger and lower end cuts for braised dishes. Nearly half of the retailers sell mostly middle meats. Most distributors found a market for everything and grind any extra end meat.
- Respondents were asked to rate the importance of various attributes, on a scale ranging from 1 to 5, with 5 meaning “very important.” Taste had the highest average rating (4.9), followed by “no hormones/antibiotics” (4.0), “consistent cut size/shape” (4.0), “health benefits” (3.9) and “humanely raised” (3.7).³⁵ Despite the fact that they are frequently mentioned, the least important attributes were grass-fed (2.7) and certified organic (2.6); grass-fed is not satisfactory to the typical U.S. consumer palate in terms of taste and texture, and organic is not different enough from other niche meats to justify its high price. “Local”, “family farmed” and “personal connection with producer” had similar average ratings (3.4 and 3.5).
- Less than half of respondents are interested in three younger grass-fed beef products—vitello, vitellone, and manzo—which are listed in order of declining popularity; restaurants were the most interested.
- The most common challenge with purchasing local meats was volume—having enough and having it regularly available. The next most common challenge was “quality,” including taste, texture, size of cuts, fat content and variability among individual cuts.

³⁴ “Meat Industry Capacity and Feasibility Study of the North Coast Region of Northern California,” Hardesty, S., J. Harper, Y. Kusunose, M. Doran, S. Larson, T. Becchetti, R. Ingram, L. Gwin, and E. Wright, University of California Cooperative Extension Mendocino County, University of California Davis Department of Agricultural and Resource Economics, Mendocino Economic Development and Financing Corporation, Award No. 07 79 05983, U. S. Department of Commerce Economic Development Administration, <http://cemendocino.ucdavis.edu/files/44389.pdf> , 2009

³⁵ Although commonly used, there is no common understanding of the terms “naturally raised,” “local,” and “certified humane.”

- The majority of respondents identify their niche meat suppliers in some way to their customers.
- Based on the average volumes of niche beef bought and sold by distributors in this study, we estimate that ten such distributors would account for more than 14 million pounds of niche beef per year.
- A broad range of niche meat offerings, including the “never/ever,” humanely raised and locally produced attributes, and with pork and lamb in the species mix, is desirable. There is also considerable demand among retailers for kosher and processed niche meats.

Current and Potential Markets

Meat Product Sales

Today there are only two legitimate ways to sell your cut and wrapped livestock:

1. Direct sales to consumers by producers—Owners of animals may have them slaughtered, cut, wrapped and then returned to them. The producer (i.e., animal owner or family member) then sells the product directly to a consumer. No federal certification is necessary for this approach. It is illegal to sell the finished product through any retail or wholesale outlet.
2. Sales to processors that then turn around and sell to their distributors. Only federally certified product can be sold through these outlets.

Del Norte branded meat products

Today there is no identifiable Del Norte County branded meat product. This could be a good opportunity to ensure a unique product in the market.

Competition/Current Meat Purchasing Outlets

Competition for meat sales in Del Norte would principally be from existing suppliers, mostly supermarkets. An understanding of local economics and demographic will help identify strategies for retail sales.

The more significant meat sales outlets consist of:

- Direct sales from producers (ranchers) to customers)
- Farmers’ markets (seasonal)
- Retail outlets (e.g., Safeway, Rays)
- Internet sales
- Humboldt County natural food markets, Eureka and Arcata

There is also competition for processing and production services listed under “Stationary Meat Processing Capabilities in or Near Del Norte County” and “Custom Mobile Slaughter in or Near Del Norte”. Bussman’s (near Bandon) is underway with development of a plan to become a FSIS certified processor. The Butcher Shop in Eagle Point, OR is purchasing an MSU with the intent to travel to the coast. With this MSU they could accommodate FSIS certified production or custom.

Consumer preferences and factors influencing the purchase of meat

The most recent national data suggest that while local food consumers are demographically diverse, they are very similar in their motivations for buying local. The majority of respondents

to a national study cited freshness (82 percent), support for the local economy (75 percent), and knowing the source of the product (58 percent) as reasons for buying local food at direct markets or in conventional grocery stores.³⁶

Two national studies found that consumers with varying educational and income levels were equally likely to purchase local food, while other studies have found local food patrons to be more educated and earning above-average income. Consumers who enjoy cooking, growing a food garden, frequenting health food stores and purchasing organic food were more likely to buy local food. On the other hand, environmental and health-related attitudes and behaviors, while well received among local food consumers, were not important factors affecting actual food purchases. Those who frequented direct markets purchased local foods for their quality and freshness. Not surprisingly, those who placed a greater emphasis on supporting local businesses and producers, or who preferred to purchase fresh rather than processed produce, were more likely to shop at direct markets.³⁷

The Economic Research Service (ERS) of the USDA provides research data from its studies.³⁸

**U.S. per capita disappearance of fresh, chilled, frozen,
and processed beef, pork, and chicken, selected years**

Year	Beef	Pork	Chicken
	<i>Pounds, retail weight equivalent</i>		
1960	66.4	56.3	28.0
1965	74.7	51.5	33.4
1970	84.4	55.4	40.1
1975	88.5	42.9	38.7
1980	76.4	56.8	47.4
1985	79.0	51.5	52.5
1990	67.5	49.4	60.6
1995	66.1	51.5	68.9
1996	66.4	48.1	69.7
1997	67.0	47.6	71.4
1998	65.5	51.3	71.9
1999	67.3	52.5	76.4
2000	67.5	50.8	77.4
2001	66.0	50.0	77.0
2002	67.5	51.3	81.0
2003	64.9	51.7	82.0
2004	66.1	51.3	84.3

Note: If retail weight equivalent is converted to boneless weight, beef consumption would be 63.5 pounds per capita in 2004, pork consumption 48.2 pounds, and chicken consumption about 59 pounds. For all meats, retail products are being sold with less bone and closer trim.

Table 12—U.S. Per Capita Disappearance of Beef, Pork and Chicken

³⁶ Ibid, “Local Food Systems: Concepts, Impacts, and Issues”

³⁷ Ibid, “Local Food Systems: Concepts, Impacts, and Issues”

³⁸ “Factors Affecting U.S. Beef Consumption”, Outlook Report No. (LDPM13502, <http://www.ers.usda.gov/Publications/LDP/Oct05/LDPM13502/>, October 2005

U.S. per capita disappearance of beef, pork, and chicken, selected years, retail weight equivalent

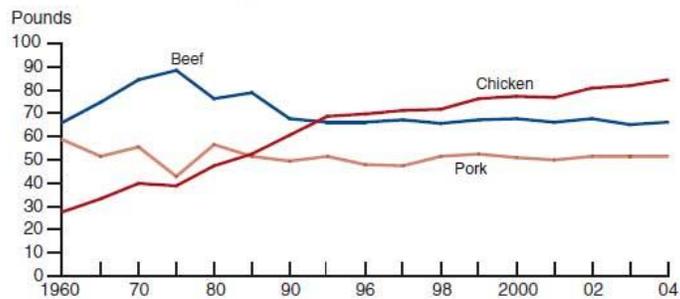


Figure 19—U.S. Per Capita Disappearance of Beef, Pork and Chicken

- Although the trend has been for consumers to eat more of their meals away from home, this study shows that most of the beef eaten by consumers was purchased at retail stores and consumed at home. Ground beef is the noticeable exception.
- Blacks had the highest beef consumption per capita (77 pounds) of all races, followed by Hispanics (68 pounds), Whites (65 pounds), and Other races (including Asians) (62 pounds). As the Hispanic population continues to grow at a faster rate than the rates of other ethnic groups, total beef consumption by Hispanics is expected to exceed that of non-Hispanic Blacks.
- A relatively higher share of ground beef per capita was eaten away from home by Blacks than by other racial/ethnic groups.
- Consumers in the Midwest ate at least 7 pounds more beef per capita than did beef consumers in other regions, while consumers in rural areas ate at least 9 pounds more beef per capita than did consumers in urban or suburban areas.
- Low-income consumers ate more beef, mainly ground beef and processed beef, than did middle- or high-income consumers. As eating out rises with income, high-income consumers have eaten relatively more beef away from home than have middle- or low-income consumers.
- On average, annual consumption of beef by males was 38 pounds more than for females. Per capita beef consumption was highest for males ages 20-39 and females ages 12-19. However, after age 39 for males and 19 for females, per capita beef consumption began to decline.
- Trends in beef consumption will continue to change relative to prices of other meats, health concerns, and changes in the composition of products offered, among the many factors that affect consumption and production.
- Per capita beef consumption is expected to fall over the next two decades as the population ages. More than one study shows that per capita beef consumption is falling.³⁹

Analysis shows that projected income growth overshadows projected shifts in demographic characteristics, such as age, race, and region, as an influence on food expenditures. Consumers

³⁹ “An Analysis on Agricultural Market Behavior”, A Dissertation by Chul Choi, Submitted to the Office of Graduate Studies of Texas A&M University in partial fulfillment of the requirements for the degree of Doctor of Philosophy, Approved by: Chair of Committee, David A. Bessler, Committee Members, David J. Leatham, Gabriel Power, Samiran Sinha, Head of Department, John P. Nichols, August 2010

will spend extra discretionary income on quality and convenience, rather than quantity. Income growth is also likely to result in some shifts in per capita quantities consumed. Higher incomes, all other variables held constant, are likely to boost the consumption of fruits and vegetables (except potatoes), cheese and yogurt, and fish, while lowering the consumption of pork, beef, other meat, and eggs.⁴⁰

The Agricultural Marketing Resource Center sites low profitability in the conventional beef industry coupled with changes in consumer tastes and preferences as fueling producers' interest in the niche natural and organic meat markets. Further they state increased demand for natural and organic foods, product innovation, competition, recent changes in USDA to more robust, quality certification programs, and the beef hormone dispute as positive drivers of change for the natural and organic beef industries. Add to this the more recent, growing concern that our foods be produced closer to home, as advocated by writers such as Michael Pollan in *The Omnivore's Dilemma*, and the prevailing market trends shape-up quite favorably for Del Norte grass-fed natural and organic beef.

The meat market manager/buyer can be resistant to taking on a new meat product for fear it will further complicate his life, requiring too much customer education. Providing good point-of-sale (POS) materials that provide self-service information for the consumer is a wonderful means of addressing this concern and managers said might help persuade them to take on a viable new product.

Meat managers would prefer a more local product because out-of-country products are variable, can too often have a short shelf-life, and their customers' disfavor for imported meats is growing—the miles-to market issue once again.

On average, prices for grass-fed, natural ground beef ranged from 28 percent to 46 percent above prices for conventional beef. In Whole Food stores it was as much as 54 percent higher.

To warrant a premium price per pound, “natural” beef must be of top quality and like flavor consistently, and also must have a good shelf life.

Consumers still do not entirely understand the health benefits of “natural” and grass-fed beef. Education for both the buyer and consumer regarding these benefits, through in-store demonstrations and POS materials, again, would be very useful to developing a customer base for a new product.

The majority—60 percent—had purchased grass-fed, natural beef before; and those who had not, did not in large part only because either it was not available or they were not aware of the product. Price, taste or quality was not the reason.

The vast majority of respondents rated grass-fed, natural beef as superior to or at least equal to conventional beef in all attributes associated with taste, including color, tenderness, flavor and juiciness. The most important characteristic for these consumers was flavor with 86.7 percent

⁴⁰ “America's Changing Appetite: Food Consumption and Spending to 2020”, FoodReview, Vol. 25, Issue 1 <http://www.ers.usda.gov/publications/FoodReview/May2002/frvol25i1a.pdf>

preferring grass-fed, natural beef’s flavor and another 5.6 percent finding it as good as conventional beef—a combined favorable rating of 92.3 percent!

When asked about how important or not the health benefits of grass-fed beef is to them, these consumers resoundingly rated the increased health benefits of natural, grass-fed beef to be “very important” to them.

When asked how important or not the environmentally sound and humane production methods inherent to a grass-fed, natural beef product were to these consumers, they once again, across the board of issues, rated these issues to be “very important” to them.

When asked how important that such a beef product be a “local” product, 83 percent rated this as “important” to “very important”.

When asked if “local” included products within “Northern California” in their mind, 82 percent stated “Yes.” This bodes well for Del Norte producers as it indicates that a product from our area would be perceived as “local” by a Bay Area shopper.⁴¹

Impacts of Food Miles (Life Cycle Assessments)

Life cycle assessment (LCA) is a tool that can be used to evaluate the environmental load of a product, process, or activity throughout its life cycle. Agricultural production is the hotspot in the life cycle of food products and LCA can assist to identify more sustainable options.⁴²

Life cycle assessment is a powerful framework for economic, social, and environmental cost pricing of consumer goods and services.⁴³

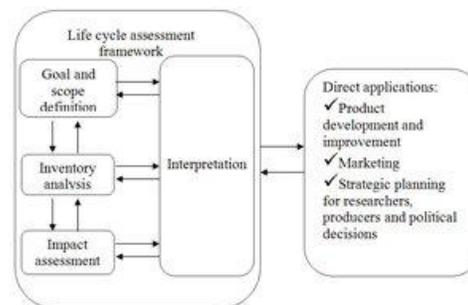


Figure 20—Life Cycle Assessment Framework⁴⁴

Virtually all natural resources consumed and pollution generated from the life cycle of goods and services can ultimately be traced to individuals and households through final demand. Despite

⁴¹ This segment relies on “Feasibility of a Natural Meat Industry In Humboldt County”, http://co.humboldt.ca.us/planning/econdev/documents/natmeatreport_07.pdf, February 28, 2007

⁴² “A review of life cycle assessment (LCA) on some food products”, http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T8J-4STGRRK-1&_user=10&_coverDate=01%2F31%2F2009&_rdoc=1&_fmt=high&_orig=search&_origin=search&_sort=d&_docanchor=&view=c&_searchStrId=1645923802&_rerunOrigin=google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=a46595c5f619dff821e10aea90485ca5&searchtype=am, June 2008

⁴³ “Consumer-oriented Life Cycle Assessment of Food, Goods and Services”, Jones, Kammen and McGrath, University of California—Berkeley, <http://escholarship.org/uc/item/55b3r1qjm>, March 2008

⁴⁴ “Life Cycle Assessment of Farming Systems”, http://www.eoearth.org/article/Life_cycle_assessment_of_farming_systems

this reality, it is surprising that few environmental policies and market mechanisms are directed towards consumer behavior, particularly since individuals are often willing to pay for environmental impacts related to their consumption.

Part of the problem has been that environmental information on the life cycle of consumer goods, food, and services is not readily available to consumers. Despite increasing demand for such information, only a small fraction of consumer products have been evaluated on a life cycle basis. The sheer number of products and services in the global economy presents time and resource challenges to providing useful environmental information to consumers and producers.

A more comprehensive system of environment accounting across the full spectrum of consumer products would help to foster a more sustainable economy by:

- 1) helping consumers to understand the environmental impacts related to their choices,
- 2) enabling the creation of a pricing system that sends more appropriate signals to consumers,
- 3) providing an incentive to companies to differentiate their products by measuring and reducing environmental impacts from their supply chains, and
- 4) generating financial resources to mitigate environmental damage (e.g., via carbon credits) or to pay for environmental clean-up and health-related costs.

By linking information and price incentives across systems of supply and demand a more efficient and sustainable resource system may begin to emerge that explicitly recognizes the connections between production, consumer behavior and environmental change.

A sample of greenhouse gas (GHG) emissions from the life cycle of a range of foods and consumer goods sold in the U.S. is shown in the following graph and pie chart.

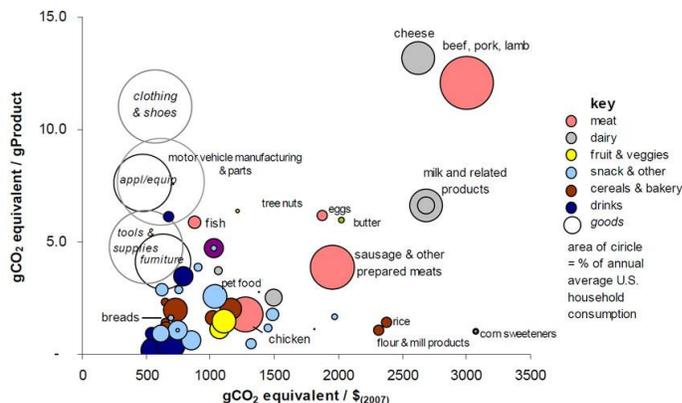


Figure 21—Life Cycle CO₂ Emissions for Products & Food in U.S.⁴⁵

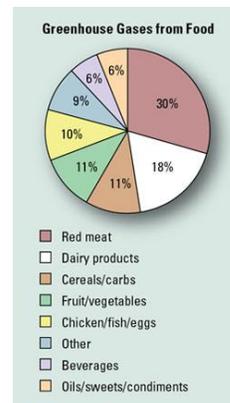


Figure 22—Green House Gases from Food⁴⁶

⁴⁵ Ibid, “Consumer-oriented Life Cycle Assessment of Food, Goods and Services”

⁴⁶ “For climate change—Meat matters more than miles”, <http://rs.resalliance.org/2008/05/14/for-climate-change-meat-matters-more-than-miles/>, May 2008

For perspective, food accounts for 13% of every U.S. household's of total U.S. emissions; this includes industrial and other emissions outside the home. By comparison, driving a car that gets 25 miles per gallon of gasoline for 12,000 miles per year (the U.S. average) produces about 4.4 tons of CO₂. Switching to a totally local diet is equivalent to driving about 1000 miles less per year.

One way to reduce the environmental and economic impacts of meat production is to raise, process and acquire meat products locally.

A relatively small dietary shift can accomplish about the same greenhouse gas reduction as eating locally. Replacing red meat and dairy with chicken, fish or eggs for one day per week reduces emissions equal to 760 miles per year of driving. And switching to vegetables one day per week cuts the equivalent of driving 1160 miles per year.

Several other recent studies have analyzed particular foods and poked holes in the food mile concept. For example, it can be more energy efficient for a British household to buy tomatoes or lettuce from Spain than from heated greenhouses in the U.K.⁴⁷

The concept, or more precisely, computation of food miles, is often debated. It depends on the group issuing the data. Locavores often quote 1,500 miles as the distance food travels. However, this was a gross averaging of miles using an average distance from Chicago to consumers. Detractors point out that this is a gross miscalculation.

Whatever the food miles may be, they are reduced significantly when product is raised, processed and acquired locally.

Grass-fed/organic/free-range vs. Confined Feed Animal Operations (CAFO)

CAFOs, or Concentrated Animal Feeding Operations, are in essence a 'concentrated' way of keeping and feeding animals, thereby producing cheap meat. Thousands of animals are crammed into nearly impossible spaces leading to brutal conditions and detrimental effects. Concentrated animal feeding operations (CAFOs) are what can happen when efficiency and cost are the only considerations in food production. Cramming multitudes of animals into close quarters, they create vast amounts of waste, an oppressive stench, plumes of air pollution, inhumane conditions, and additional health hazards.

CAFOs are the modern and industrialized way to feed livestock. They have spread throughout the world, affecting lives and cultures everywhere. CAFOs have become the industrial norm in meat production; yet have increasingly negative ramifications on human and animal health, and the environment.⁴⁸

CAFOs are economically advantageous and revolutionary in thought, but carry with them detrimental health effects. Scientists have connected the effects of CAFOs to problems such as respiratory health issues, air toxicity levels, water quality, influenza pandemics and antibiotic

⁴⁷ Ibid, "For climate change—Meat matters more than miles"

⁴⁸ "Meat Over Morals", Tara Kelly, http://www.familymatters.tv/level_4/perspectives/meatovermorals.html, 2009

resistance. The presence of a CAFO has been proven to "increase the healthcare costs of nearby residents".

In a CAFO sanitary levels are low. Due to such confined spaces and exceedingly high numbers of animals, fecal waste is uncontrollable and disease is widespread. As a preventative to diseases the animals are pumped with antibiotics, creating direct health problems for them. People in turn consume meat that is guaranteed to be full of preservatives and antibiotics, and sometimes proves to be meat of sick animals. Antibiotic resistance is yet another growing problem as a result of CAFOs; antibiotic-resistant bacteria is becoming more prevalent among farm animals. Not only are people consuming meat that is full of antibiotics and pesticides, but the food the animals are fed are also full of chemical fertilizers and pesticides. This food, that is typically American grown corn and grain, leads directly to its own set of problems. When consuming commercially produced meat, each step of chemicals is consumed: chemical are used to genetically modify the grain from seeds, more chemicals are put into the earth to grow the genetically modified grain, and still more chemicals are pumped into the animals so that they are able digest the GMO grain. These steps lead to detrimental health problems for the animals. One becomes part of this full chemical cycle when choosing to eat CAFO produced meat.

CAFOs house swine, poultry, cattle and other animals in inhumane ways, leading to the destruction of human health, and the environment, all in turn affecting the world. Humans are in essence consuming this disaster one bite at a time. "Conventional meat takes energy, grain and drugs to produce". Sustainable meat ("Grass Fed" meat) takes longer and costs more money, but leaves the earth with continuing recourses and does not pollute the environment and human bodies with unnecessary toxins and chemicals. These "Factory Farms" lead to one appealing fact: cheap meat. CAFOs prove to be ostensibly economically beneficial; this, along with the government subsidies that are given out to farmers who produce cheap meat, creates motivation. Yet, in 2009 cheap is a term that needs to be reevaluated. How much is America willing to pay for cheap?⁴⁹

"Grass-fed" has now become a food buzz word. Advocates contrast grass-fed beef to beef produced by Concentrated Animal Feeding Operations (CAFOs) and claim that grass-fed beef is greener, more humane, and more healthful. But just how green, how humane, and how healthful is it? We need to evaluate grass-fed beef from a variety of angles and by comparing it to several different kinds of meat production, beginning with the much maligned CAFO (feedlot) mode of production.

CAFO beef are fed mostly corn and soy during the last 6 months of their lives; grass-fed consume only grass and hay. Production of corn and soy for beef cattle (instead of for humans) is a very inefficient use of resources. Grass-fed is in some ways less resource-costly. CAFO cattle are confined in feedlots and given antibiotics and hormones; grass-fed are free-range and are given antibiotics and hormones.

CAFO feedlots collect vast amounts of manure in a small area, causing air pollution when the wind blows and water pollution when it rains. Grass-fed cattle are natural manure spreaders, and if not overgrazed, distribute fertilizer throughout the pasture.

⁴⁹ Ibid, "Meat Over Morals"

CAFO beef has high levels of cholesterol and saturated fat but low levels of omega fats and vitamin E. Grass-fed has less cholesterol, less saturated fat, more omega fats, and more vitamins. Grass-fed also contains conjugated linoleic acid (CLA), which may be an anti-carcinogen.

Grass-fed methods of beef production are better for the environment, better for the cattle, and better for the consumer's health. Better than CAFO beef production, that is. grass-fed beef is, in itself, a wise food choice.

Is Grass-fed Beef Humane? The full concept of humane treatment of livestock covers a wide variety of issues such as confinement, stress levels, diet, drugs and handling. Handling questions include prodding, castration, and identification (branding and tagging). Transfer (as in trucking cattle to the slaughter-house) and method of slaughter are perennial issues. Surely, we would hope the beef we buy comes from cattle that are treated well throughout the production process, not just in regard to confinement and feed issues.

Grass-fed beef production is clearly more humane than CAFO production, especially because the animals are not confined in a feedlot. Cattle are ruminants; confinement in a crowded dirt plot with 100's or 1,000's of other animals stifles their natural behaviors.

Is Grass-fed Beef a Healthful Food Choice? Advocates of grass-fed beef point out that it has many nutrients: iron, calcium, protein, and a range of vitamins. It also contains omega fats and conjugated linoleic acid (CLA). Grass-fed is somewhat lower in cholesterol and saturated fat than CAFO beef.

By comparison to CAFO, grass-fed sounds like a health food, but one would think a health food would be organic; as we saw, grass-fed is not necessarily organic. Grass-fed does contain cholesterol and saturated animal fat, which most people try to avoid. Perhaps these flaws offset the advantages offered by the iron, vitamins, omegas, etc.

In fact, the advantages, the "good contents" of grass-fed can be found in other products, even in non-meat products. There is abundant iron in beans and lentils; for iron and many other nutrients, try quinoa. Nuts, dark leafy greens and whole grains are rich in vitamin E (a vitamin supplied by grass-fed beef).

Essential fatty acids are available in flax, avocados and many oils such as olive, safflower, and sunflower. Of course, we do not need to consume all of these foods at one sitting or even in one day; our bodies use the nutrients as needed, storing some of them for future use.

Research on CLA (conjugated linoleic acid) is still sparse, but in any case there are well-known cancer-fighting vegetables readily available, notably the Brassicaceae family of plants which includes broccoli, cabbage, and cauliflower. Modern researchers affirm that a well-balanced vegetarian diet provides adequate nutrition, including all of the "health food" nutrients of grass-fed we enumerated above.⁵⁰

⁵⁰ "Grass-fed Beef: Is It Green, Humane, and Healthful?" Gene C. Sager Professor of Environmental Ethics, Palomar College, http://www.awarenessmag.com/marapr09/ma09_grass_fed_beef.htm, 2009

There are many successful natural and natural grass-fed beef producers in the US. The following is a partial listing.

Natural Beef		
<i>Producer's Name</i>	<i>Type of Beef Sold</i>	<i>Web Site</i>
Coleman	They produce natural beef, bison, chicken, pork, lamb and sausage. The cattle are never fed or administered antibiotics and are always 100% vegetarian fed. They do not use animal by-products or animal fats and their animals are raised with no added hormones.	www.colemannatural.com
Laura's Lean Beef	Their cattle are raised on family farms solely on natural grains and grasses without animal by-products and antibiotics or growth hormones.	www.laurasleanbeef.com
Harris Ranch	Their natural beef is minimally processed and contains no artificial ingredients.	www.harrisranchbeef.com
Niman Ranch	Produces natural beef, pork and lamb without growth-promoting antibiotics or hormones and they never feed their cattle meat.	www.nimanranch.com
Oregon Country Natural Beef	Raises their cattle the "old fashioned" way, no hormones, antibiotics or any animal by-products.	www.oregoncountrybeef.com
Thousand Hills Cattle Company	Cattle are raised locally on small family farms in Minnesota and Northeast Iowa then processed at a state-of-the-art USDDA inspected facility in Cannon Falls, MN.	www.thousandhillscattleco.com
Western Grasslands Beef	Cattle are raised by family ranchers on pasture through their entire lives. Animals are not fed animal by-products or artificial fees. Cattle grow without synthetic chemicals, or artificial growth enhancing hormones or sub-therapeutic antibiotics.	www.westerngrasslands.com

Table 13—Natural and Natural Grass-fed Beef Producers⁵¹

⁵¹ Source: Acevedo, Lawrence and Smith, 2006.

Plausible Markets for “Natural” Meats⁵²

Local

Del Norte County provides too small a market to allow for much expansion of local “natural” meat sales. Also, because income levels in the County are below the state average, a premium “natural” meat product will find fewer shoppers per capita willing or able to pay the additional price. With producers already selling into much of what market does exist (i.e., direct sales from producers to consumers and farmer’s markets), there is little room for growth within the Del Norte County market.

Though “local” has a geographic connotation, there is no consensus on a definition in terms of the distance between production and consumption—*there is no generally accepted definition of “local” food.*⁵³ Definitions related to geographic distance between production and sales vary by regions, companies, consumers, and local food markets. According to the definition adopted by the U.S. Congress in the 2008 Food, Conservation, and Energy Act (2008 Farm Act), the total distance that a product can be transported and still be considered a “locally or regionally produced agricultural food product” *is less than 400 miles from its origin, or within the State in which it is produced.* Food from 400 miles away just doesn’t feel *local*.

Local food markets—a small but growing share of total U.S. agricultural sales:⁵⁴

- Direct-to-consumer marketing amounted to \$1.2 billion in current dollar sales in 2007, according to the 2007 Census of Agriculture, compared with \$551 million in 1997.
- Direct-to-consumer sales accounted for 0.4 percent of total agricultural sales in 2007, up from 0.3 percent in 1997. If nonedible products are excluded from total agricultural sales, direct-to-consumer sales accounted for 0.8 percent of agricultural sales in 2007.
- The number of farmers’ markets rose to 5,274 in 2009, up from 2,756 in 1998 and 1,755 in 1994, according to USDA’s Agricultural Marketing Service.
- In 2005, there were 1,144 community-supported agriculture organizations (CSAs) in operation, up from 400 in 2001 and 2 in 1986, according to a study by the nonprofit, nongovernmental organization National Center for Appropriate Technology. In early 2010, estimates exceeded 1,400, but the number could be much larger.
- The number of farm to school programs, which use local farms as food suppliers for school meals programs, increased to 2,095 in 2009, up from 400 in 2004 and 2 in the 1996-97 school year, according to the National Farm to School Network. Data from the 2005 School Nutrition and Dietary Assessment Survey, sponsored by USDA’s Food and Nutrition Service, showed that 14 percent of school districts participated in Farm to School programs, and 16 percent reported having guidelines for purchasing locally grown produce.

⁵² Ibid, “Feasibility of a Natural Meat Industry In Humboldt County”

⁵³ “Local Food Systems: Concepts, Impacts, and Issues”, Martinez, Steve, et al. ERR 97, U.S. Department of Agriculture, Economic Research Service, <http://www.ers.usda.gov/Publications/ERR97/ERR97.pdf>, May 2010

⁵⁴ Ibid, “Local Food Systems: Concepts, Impacts, and Issues”

- Production of locally marketed food is more likely to occur on small farms located in or near metropolitan counties. Barriers to local food-market entry and expansion include: capacity constraints for small farms and lack of distribution systems for moving local food into mainstream markets; limited research, education, and training for marketing local food; and uncertainties related to regulations that may affect local food production, such as food safety requirements.
- Consumers who value high-quality foods produced with low environmental impact are willing to pay more for locally produced food.
- Federal, State, and local government programs increasingly support local food systems.
- As of early 2010, there were few studies on the impact of local food markets on economic development, health, or environmental quality.
 - Empirical research has found that expanding local food systems in a community can increase employment and income in that community.
 - Empirical evidence is insufficient to determine whether local food availability improves diet quality or food security.
 - Life-cycle assessments—complete analyses of energy use at all stages of the food system including consumption and disposal—suggest that localization can but does not necessarily reduce energy use or greenhouse gas emissions.

Regional

Northern California including the greater Bay Area is proving to be the most promising market territory. The demand, the consumer values and the ability to support a premium product produced in this area. Access to the market is also an advantage. All indications are that this territory should be the focus for Del Norte “natural” meat products.

National

Access to this broader market may only be viable via Internet and mail order sales. Target marketing campaigns will enable finding Internet buyers to be willing to pay a premium for a quality organic meat product and the added convenience of shopping online.

International

The opportunity exists for potential sales to Asia, but would likely require additional “dry-aging” and/or other product enhancements to distinguish the product within a foreign market and to warrant pricing that would cover the additional costs of marketing and shipping overseas.

Direct Sales to Consumers⁵⁵

Nationwide recent growth in direct-to-consumer marketing farms and sales has come from larger operations, and fruit, vegetable and beef farms. For example, operations with \$50,000 or more in annual sales increased direct-to-consumer sales by 64 percent, or \$274 million, from 2002 to 2007, which exceeded all other size categories. The number of beef farms involved in direct-to-

⁵⁵ Ibid, “Local Food Systems: Concepts, Impacts, and Issues”

consumer marketing grew by 33 percent (or 8,851 farms) from 2002 to 2007, followed by farms marketing vegetables and melons, which grew by 24 percent (or 3,474 farms).

Direct sales by commodity, 2002 and 2007					
	Vegetable and melon	Fruit and tree nut	Beef	Other animal products	Other crops and plants
Number of farms					
2002	14,487	14,381	27,133	41,016	21,190
2007	17,961	17,161	35,984	43,274	22,437
Percent change	24	19	33	6	6
Value (million dollars)					
2002	198.2	196.5	77.0	179.7	160.9
2007	335.3	343.9	141.4	236.0	154.7
Percent change	69	75	84	31	-4

Table 14—Direct Sales by Commodity



Map 7—Value of Direct Sales to Consumers by County, 2007

This is the easiest entry point for the smaller producer or collective. This market channel has been or currently is in use by a number (unknown) of our local producers. A direct sale by producers (i.e., animal owners) to consumers does not require FSIS certification.

Farmers' Markets⁵⁶

The number of farmers' markets grew to 5,274 markets in 2009, a 92-percent increase from 1998. They are concentrated in densely populated areas of the Northeast, Midwest, and West Coast. According to the USDA Agricultural Marketing Service's 2006 National Farmers' Market Survey, the most popular product category sold at farmers' markets was fresh fruits and vegetables, which was sold by nearly 92 percent of farmers' market managers in 2005, followed by herbs and flowers, and honey, nuts, and preserves.

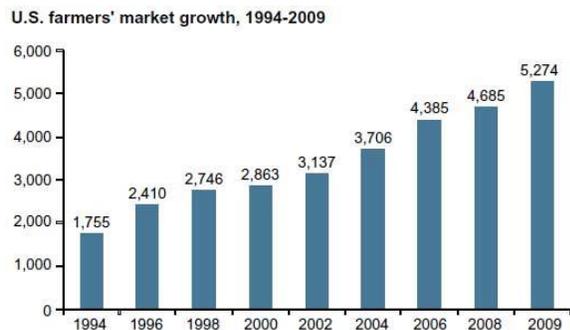


Figure 23—U.S. Farmers' Markets Growth 1994-2009



Map 8—Farmer's Market Locations by County, 2009

Farmer's markets are an excellent method of introducing new food products to communities. Of the consumer survey respondents, about 1% said that they purchase their meats at farmers markets. This indicates that farmers' markets could be a potential distribution channel, but are likely to be of secondary importance. One organization, Certified Farmer's Markets, offers listings of markets in different states (<http://www.farmersmarkets.net/>). The USDA also has a farmer's market location web site at <http://www.ams.usda.gov/farmersmarkets/map.htm>. The

⁵⁶ Ibid, "Local Food Systems: Concepts, Impacts, and Issues"

public's growing concern with healthy eating and knowing where and how food is produced has fueled the growth of farmer's markets across the country.

This is a time-consuming option, but can be a great way to introduce a new product and its producer(s) to a new market. Meeting customers in person can be invaluable to building the trust and credibility many consumers are seeking from a “natural” premium product.

Once a customer base is built, it may be possible to take orders ahead of time and deliver orders at the market, which can limit the amount of time spent at there. Sending regular customers an order sheet or routing them to a product website for self-service ordering can further facilitate taking orders in advance of market day.

The shortcomings with farmers’ markets are that not all markets allow meat sales, and if they do they may require strict attention to health and cleanliness regulations. Cooking and having meats available for sampling may be one of the restrictions, thus limiting the ability to introduce consumers to a product. Checking the rules and regulations of each market will be important.

Community Supported Agriculture⁵⁷

In 1986, there were 2 CSA operations in the United States. By 2005, there were 1,144 CSAs compared to 761 in 2001, an increase of 50 percent. In 2010, the Robyn Van En Center, provider off a national resource center about CSAs based at Wilson College in Chambersburg, PA, estimates that there are over 1,400 CSAs in operation, but a 2009 survey found 700 CSAs in 9 States, which suggests the number could be much greater. An online registry estimates that the number of CSAs exceed 2,500 (Local Harvest, 2010) and are concentrated in the Northeast, areas surrounding the Great Lakes, and coastal regions of the West.



Map 9—Community Supported Agriculture Locations, 2009

Farm to School⁵⁸

Farm to school programs represent an important component of the institutional market for locally grown produce. These are collaborative programs that connect schools to local farmers. For most of these programs, school food authorities buy fresh produce directly from local farmers for some or all of their produce needs. So far meat is not as much on the radar as are fruits and vegetables.

⁵⁷ Ibid, “Local Food Systems: Concepts, Impacts, and Issues”

⁵⁸ Ibid, “Local Food Systems: Concepts, Impacts, and Issues”

Farm to school programs have grown rapidly over the last decade. The National Farm to School Network, a collaboration of groups supporting farm to school programs, estimated that there were 2,051 farm to school programs in the United States in 2009; twice as many as in 2005-06. As of August 2009, they estimated that 41 States had some kind of farm to school program, and 8,943 schools in 2,065 districts participated.

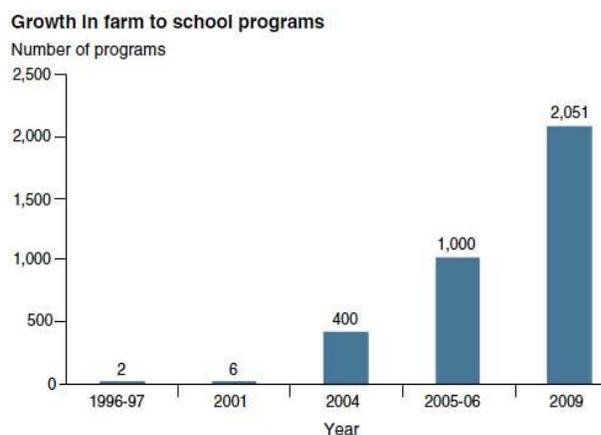


Figure 24—Growth in Farm to School Programs

Schools tend to use distributors and buy in considerable bulk to reduce costs. There possibly is an opportunity here to move to more local foods. This is becoming a very popular approach and is encouraged by the USDA and other forward-leaning policy entities. Some ideas for developing a local farm-to-school program include:⁵⁹

- Research and develop models for marketing and delivery mechanisms for family farmers to sell to school districts in northern California that meet the needs of both the school district and the farmer.
- Develop a viable business plan to assist school districts in the transition to farm-to-school meal programs.
- Provide farm-to-school technical assistance to farmers, school food service staff, educators, community organizers, and others around California.
- Develop farm to school related state, local, and district food policies in collaboration with other groups in California.
- Further develop model pilot programs in school districts, with a system that supports the marketing, procurement and serving of locally grown fruits, vegetables, meats, nuts, and legumes in school meals.

Food co-operatives

A food co-operative or food co-op is a grocery store organized as a co-operative. Food co-operatives are usually consumers' co-operatives and are owned by their members. Food co-operatives follow the 7 Co-operative Principles⁶⁰ and typically offer natural foods. Since decisions about how to run the co-operative are not made by outside shareholders, co-operatives often exhibit a higher degree of social responsibility than their corporate brethren.⁶¹

⁵⁹ <http://www.farmtoschool.org/state-home.php?id=4>

⁶⁰ International Cooperative Alliance (ICA) 7 Cooperative Principles 1) Open, voluntary membership, 2) Democratic governance, 3) Limited return on equity, 4) Surplus belongs to members, 5) Education of members and public in cooperative principles, 6) Cooperation between cooperatives, 7) Concern for community, http://en.wikipedia.org/wiki/Rochdale_Principles

⁶¹ Food cooperative, http://en.wikipedia.org/wiki/Food_cooperative

Co-operatives are an established community wealth-building strategy that can be found in many economic sectors, including banking (credit unions), agriculture, electricity generation and transmission, telecommunications, housing, and child care. In every case, co-operatives operate on the basis of the core democratic principle of “one person, one vote.” The top 100 U.S. co-ops alone have more than \$150 billion in sales each year. Areas of recent growth include natural food groceries, purchasing co-operatives, and worker co-operatives.

What is a co-op? A co-operative can be any business that is governed on the principle of one member, one vote. In other words, unlike a stock corporation, everyone makes an equal investment in purchasing shares and therefore has an equal say. Although antecedents exist, including a mutual fire insurance company established by Benjamin Franklin in 1752 that continues to operate in Philadelphia to this day, the first modern co-operative was a retail co-op founded by 28 people in Rochdale, England in 1844. Originally selling butter, sugar, flour, oatmeal, and tallow candles, business expanded rapidly in scope and scale as the co-op succeeded in elevating food standards—rejecting then-common tactics such as watering down milk. By 1880, Rochdale had over 10,000 members and more than 500,000 people had joined food co-ops in Britain; by 1900, British food co-op membership totaled 1.7 million.

In 2005, the National Co-operative Business Association surveyed nine leading co-op sectors and found that the co-ops surveyed had a total of 154.7 million members. Conservatively, discounted for people who are members of more than one co-op, this means that over 120 million Americans are members of at least one co-op or credit union. And even these numbers fail to encompass the scope of cooperatives, large and small, that are found throughout America in a number of different sectors including agriculture, electricity, telecommunications, health care, housing, retail and child care, to name but a few. Additional statistics regarding the cooperative sector are in the next table.

<i>Co-operative Sector: Additional Statistics*</i>	
Total number of U.S. co-operatives, NCBA 9-sector study	21,840
Total co-op sector revenues, NCBA 9-sector study	\$273 billion
Electricity co-op members	39 million
Telecommunications (telephone) co-op members	1.9 million
Credit union members	87 million
Credit union assets	\$700 billion
Percent of total agriculture production marketed by co-operatives	30%
Estimated number of purchasing co-operatives, 1996	50
Current estimated number of purchasing co-operatives	300
Worker co-op revenues	\$450 million
Retail food co-operative sales	\$840 million
Retail food co-op members	500,000
Number of members of REI co-op	2.8 million
Number of housing co-op members	3 million
<i>* Figures from 2005, unless otherwise noted</i>	

Table 15—Co-operative Sector Statistics

There are generally two types of food co-operatives—co-operative grocery stores and buying clubs.⁶²

Co-operative Grocery Stores

Food co-operatives, often simply called co-ops, are voluntary organizations owned and controlled by members to provide low cost, healthy food primarily to members of the co-op, though some also sell to the public.

Food co-ops are operated for members by members at a non-profit or cost basis. Individuals who belong to the co-op have a say in decision making over issues surrounding the organization. Most food from co-ops is organic, though some is "natural"—produced with a minimum of processing with little or no additives or preservatives.

Food Buying Clubs

Food buying clubs are simply a group of people who come together to buy food in bulk, thus getting discounts for members of the club. They are usually an informal organization of friends, members of church groups, neighborhood groups, etc, who share the chores of collecting money from the member families, placing the order with the distributor, helping unload the truck when it arrives at the drop-off site, and dividing up the individual orders. Food is generally purchased through a natural foods regional distributor or a food co-op warehouse. Regional distributors provide food for both buying clubs and co-op stores.

Retail: Grocery Stores and Natural Food Stores

Retailer food store buyers demand a consistent quality product, a year-round source and prices that are competitive with other sources. Producers deciding to target retail food stores need also to consider the quantity of meat required and the cost of the marketing services that will need to be provided, such as prepackaging and delivery.

Small independent retailers or chains are the best entry into this market. These kinds of stores seek quality items that will set them apart from the big chains. Next likely retailer would be natural foods stores and chains. Locally grown and slaughtered meat will have a longer shelf life in the retailer's case, which is a great selling point for producers offering fresh meat.

Retailers may accept whole carcasses or demand precut, prepackaged meat, depending on whether or not they have a full-service meat department equipped to break whole carcasses or not. Be prepared to sell product in either form, so as to not limit what retailers can purchase it.

Since retail food stores do not usually sign contracts with suppliers, a sudden cancellation of orders can leave producers without a market.

Another problem is that the price you need to make a profit may be, when coupled with retail markups, too high for most consumers. Every penny of processing cost adds about 2.7 cents to the retail price. Adequate volume can help producers to realize economy of scale, but may not be something they have entire control over.

⁶² <http://www.sustainabletable.org/shop/co-ops/>

Supermarkets

A sale to supermarkets is resulting in fewer dollars to producers. Direct selling of certified product by the producer to the supermarkets is a rare event any more.

The increased power of America's largest retailer, Walmart, has been one of the major driving forces pushing increased consolidation in the packing industry and decreased farmer and packer revenues since 1980.⁶³

Much attention has been paid to the rapid consolidation in the meatpacking industry over the last three decades. Indeed the numbers are staggering, for red meat the four-firm concentration ratio (CR-4)—which measures the percentage of the market share of the top four firms—tripled from 19% in 1977, to 59% in 2002.⁶⁴

For companies slaughtering hogs, the CR-4 nearly doubled from 34% in 1980, to 65% by 2007. For cattle slaughter, the CR-4 more than doubled from 36% in 1980, to 80% by 2007.⁶⁵

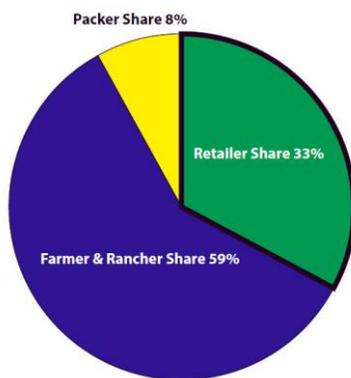


Figure 25—Distribution of the Consumer Beef Dollar in 1990⁶⁶

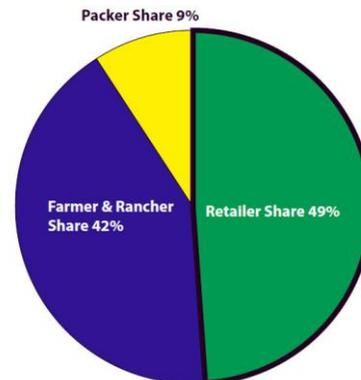


Figure 26—Distribution of the Consumer Beef Dollar in 2009⁶⁷

⁶³ “Ending Wal-Mart’s Rural Stranglehold”, <http://www.ufcw.org/document.cfm?documentID=1202>, 2010

⁶⁴ 2008 Annual Report; Packers and Stockyards Program; USDA Grain Inspection Packers and Stockyards Administration; http://archive.gipsa.usda.gov/pubs/2009_psp_annual_report.pdf, March 2009

⁶⁵ *Concentration of Agricultural Markets*; Mary Hendrickson and William Heffernan; Department of Rural Sociology; University of Missouri; prepared with financial assistance from National Farmers Union; <http://www.google.com/url?sa=t&source=web&cd=1&sqi=2&ved=0CBcQFjAA&url=http%3A%2F%2Fwww.foodcircles.missouri.edu%2F07contable.pdf&ei=rXlcTbXwG460sAPn9eT3BQ&usg=AFQjCNG5ParUWtXD a7K3u34Jz-E8K4Sdcg>, April 2007

⁶⁶ USDA Economic Research Service

⁶⁷ USDA Economic Research Service

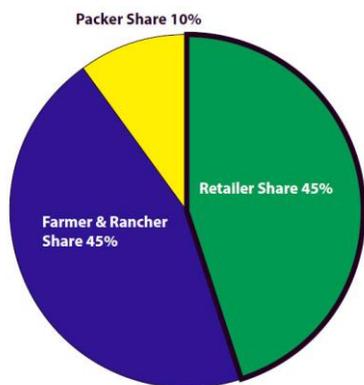


Figure 27—Distribution of the Consumer Pork Dollar in 1990⁶⁸

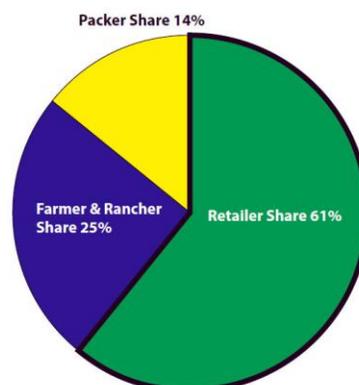


Figure 28—Distribution of the Consumer Pork Dollar in 2009⁶⁹

There is no denying this dramatic growth in livestock market consolidation since market deregulation began in earnest in the 1980s. There’s also no denying that this trend is troubling, and deserves increased scrutiny.

A superficial examination of this issue might conclude that meatpackers seeking the economies of scale—and associated increased efficiencies—is the only impetus for the consolidation trend. Indeed, in some instances, packers have sought and realized these gains. However, it has not only been the farmer that has borne the costs of this growth drive by the packing industry.

In fact, the concentration ratio for the top five food retailers (CR-5) doubled from 24% in 1997, to 48% by 2006. Walmart has clearly been a major driver of that concentration. The company is by far and away the largest global retailer. It also is the largest retail grocer in the United States with revenues of \$150 billion annually, dwarfing its nearest competitors.

Because of its sheer size, Walmart also has tremendous impact on the markets for all agricultural products. Walmart’s influence and its methodology for success are clear: use its strength and size in the market to drive down its costs by driving down the amount of money it pays its suppliers. Such larger retailers will drive the leverage scale, reduce inefficiencies, push down costs and improve top line results at the consumer and producer’s expense.

Pressure on food suppliers from their retail customers can drive mergers between competing suppliers as a means to form stronger companies to withstand these pricing pressures. This industry consolidation has the effect of reducing customer choice, by reducing the number of competing makers of products that a customer can choose from. The growing buyer power of retailers, particularly Walmart, is one of the major factors driving this trend of consolidation, a fact that food industry leaders acknowledge.

The unprecedented rise of Walmart’s retail grocery market share, along with its monopsony^{70,71} power, has changed the rules of the game and shifted the balance of power to the point where this one company is taking an unfair share of the pie at the expense of other stakeholders.

⁶⁸ *USDA Economic Research Service*

⁶⁹ *USDA Economic Research Service*

All of which suggests that for a small scale operation pursuit of niche markets is a more profitable approach to sales. This could mean finding small independent markets located in areas where sales of high quality branded products would be more favorably perceived.

Restaurants

This is an opportunity that requires a more in-depth evaluation (e.g., as part of a detailed business plan).

A recent study found that nearly two-thirds of surveyed gourmet foodservice establishments in Nevada had never purchased local products. We believe that this generally holds true for California and Oregon food establishments. The chefs of these establishments did indicate, however, that they would be willing to either begin making local purchases or increase the purchases they currently make if producers are able to meet certain requirements. Although the gourmet restaurant market may not provide a single solution, marketing to chefs and restaurants may help to increase and/or expand sales.

Chefs have a need for all types of beef, lamb, and pork, including natural and organic. Some of the specific cut types included leg of lamb, tenderloin, pork roasts, pork bacon, veal loin, rib eye, beef tenders, and NY strips, while Kobe beef, veal and buffalo are included.

The following is a listing of important and less important factors in the chef's purchasing decisions.

- *Taste, Quality & Freshness:* All of the chefs in the study said that taste and quality are extremely important factors to consider when purchasing products for use in their restaurants. Regardless of the nutritional or business goals of the chef, his/her main goal is to provide high-quality, good-tasting dishes.
- *Price:* Price refers to the amount the chef will pay to obtain the product. The majority of chefs said price is not an important factor they consider when purchasing a product; if the chef wants a product badly enough, price will not be an issue.
- *Unique Items & Signature Dishes:* The majority of chefs said that the presence of a unique or special quality is extremely important to them. Producers who feel they have a unique or special product should make sure that potential customers are aware of these qualities.
- *Consistency—Supply & Quality:* The opinion of this attribute was well-defined: the vast majority of respondents ranked a guaranteed consistent supply as extremely important. This result is not entirely surprising, as chefs may not

⁷⁰ A market form in which only one buyer faces many sellers. It is an example of imperfect competition, similar to a monopoly, in which only one seller faces many buyers. As the only purchaser of a good or service, the "monopsonist" may dictate terms to its suppliers in the same manner that a monopolist controls the market for its buyers. <http://en.wikipedia.org/wiki/Monopsony>

⁷¹ Of, relating to, or being a market in which there is a single buyer of a particular good or service. Businesses selling in a market characterized by monopsony are likely to suffer below-average profitability because of the lack of alternative outlets for their products. <http://financial-dictionary.thefreedictionary.com/Monopsony+power>

wish to complement a previously contracted supply or find a new supplier mid-season. The opinion of guaranteed consistent quality was identical, with nearly all of the chefs saying that consistent quality was extremely important.

- *Delivery—Year-Round, Timing & Method:* Year-round availability differs from consistency in that year-round availability implies that a producer will be able to offer products all year, while consistent supply implies the producer will supply products on a regular schedule. The chefs had mixed feelings about year-round availability, but the majority felt that this was a less important attribute. The majority of chefs felt that delivery timing is a very important supplier attribute. This shows how important the timing of delivery is to chefs and how important it is for suppliers to consider delivery timing when approaching chefs and/or restaurants. Delivery method is also extremely important.

Like internet sales, this local channel will be best used as a supplemental channel for Del Norte producers, since the volume will be small. Looking past our immediate area more opportunity does exist, but since restaurants do not use a large quantity of meat, access to a large number of restaurants is necessary to drive any real volume. Producers who effectively sell to restaurants usually develop a route and deliver directly to each establishment once or twice a week.

The shortcomings of restaurant sales are restaurants almost always are buying only primal and sub-primal cuts, leaving the producer with the less favorable cuts to market elsewhere. Also care and time may be required to prepare the meat according to the specifications of various chefs adding more overhead to the product which can reduce a producer's profit margins.

Institutional Food Service

Institutions such as hospitals and nursing homes, schools and university foodservice, and even prisons, offer more options and volume than restaurants can. Many institutions have long-term contracts with food suppliers. These contracts can offer consistent pricing, fewer people to deal with, regular standing orders, and good volume.

Important to know though is that most food service purchases are frozen, precut and often pre-cooked. Fresh ground beef or frozen, precut meats are the best bet with these buyers.

Downside to these venues is that they usually have more bureaucracy and thus are more difficult to initially access. Also you must be ready to offer consistent supplies of quality products. Many California institutions use single-source procurements to supply all institutional needs.

Prisons

Prisons typically buy through wholesale distributors. California prisons generally use a single procurement type purchase agreement. As such direct sales from co-operatives, while possible, are not generally utilized.

In addition in California, the Prison Industry Authority (PIA) is a self-supporting state agency created in 1982 to operate California prison industries much like private industry. The PIA works in conjunction with the California Department of Corrections and Rehabilitation (CDCR) to

provide work opportunities for approximately 5,500 adult inmates. This inmate work program includes agriculture, services, and manufacturing.⁷²

The PIA is in charge of the following agricultural industries:

- Growing almonds and packaging one ounce packages for CDCR sack lunches;
- Raising chickens for shell and frozen eggs only;
- Raising cows for milk production for the state's feeding programs.

PIA also has other non-agriculture food industries that involve value added services and manufacturing to maximize resources and nutrition goals while controlling costs. These include:

- A beef processing plant for state consumption. Beef is purchased and made into products like hamburger, franks, sausages, stew meat, and Salisbury steak;
- Coffee roasting, grinding and packaging for state consumption;
- Making sliced loaf bread for approximately 10 institutions;
- Packaging individual portions for items like peanut butter and jelly, bread slices, and cookies; and
- Making and packaging 100 percent fruit juice in 4 ounce cartons.

Internet and Mail-Order Sales

Internet and catalog outlets may represent a useful supplement to other outlets. One of the barriers to this kind of “remote marketing” is that packaging and shipping costs can as much as double the end price to the consumer. Secondly, many consumers are disinclined to purchase perishable foods via these methods.

Another use of the Internet can be a business-to-business approach by tailoring a website, or at least a portion of it, to meat market buyers and restaurants. As well as taking online orders, a website can act as a business card and bulletin board with product updates, informational materials and price-lists available for download.

Specialty Stores

In a relatively recent large-scale randomized survey, 9% of the consumer survey respondents purchased their meat at specialty meat and natural food stores. Establishing contracts or distributing to these types of retail outlets could provide substantial demand for the business to sell all of its meat products. The specialty/natural food market is expanding rapidly as is evidenced by the growth of Whole Foods and Trader Joe’s in the US. The following table lists potential natural food retailers to contact. Additionally, Costco Warehouses are listed, as they sell many natural products and 11% of the consumer survey respondents purchase their meat products at warehouse stores such as Costco.

⁷² “Good nutrition from the ground up”, Barbara Wakeen, MA, RD, LD, <http://www.corrections.com/articles/15628-good-nutrition-from-the-ground-up>, April, 2007

Natural Food Retailers		
Whole Foods	Estimated 155 stores located world wide. Largest retailer of Natural and Organic Foods.	www.wholefoods.com
Wild Oats	Nationwide stores selling natural and organic foods.	www.wildoats.com
Trader Joe's	A "different" grocery store. 250 stores in more than 20 States and still expanding!	www.traderjoes.com
Costco Warehouses	World wide warehouse locations. Sells food and household items	www.costco.com

Table 16—Natural Food Retailers

Retail Sales Outlet

Over the counter sales of meat and related products is on the rise and tied to level of income in the population. The meats sold in these outlets must be FSIS certified.

Some locations do sell a combination of products in addition to the meat products. Some examples include cheeses, sauces, breads, other dairy products, spices, herbs, oils and all manner of items related to food and food preparation. Regional locations for these approaches include:

- The Butcher Shop, Eagle Point, OR
- Taylor's, Cave Junction, OR
- Cartwright's, Grants Pass, OR
- Wild berries, Arcata, CA (Grocery store)
- Eureka Natural Foods, Eureka, CA (Grocery store)
- North Coast Co-op, Eureka, CA (Grocery store)

Typically, the locations with the best success are long-lived entities with considerable experience in offering and array of products. A number even offer prepared food for sale.

Virtual Farmer's Market—Website

The internet now provides a new opportunity for sales promotion as well as direct sales to consumers. A number of examples exist. Here are just a few:

Fredrick County Virtual Farmers' Market
www.discoverfrederickmd.com/farmersmarket/
 New Hampshire Virtual Farmers' Marketplace
www.nhfarms.com
 Rutherford County Farmers' Market
www.farmersfreshmarket.org/rutherford/

Local Dirt
www.localdirt.com
 Lake County Grown
www.localfoodmarketplace.com/lakecounty/
 Only At Farmers' Market
www.onlyatfarmersmarkets.com

Marketing fruits, vegetables and flowers directly to consumers through farmstands, farmers' markets and pick-your-own has been a profitable marketing strategy for a long time. Direct-marketing meat, while not new, is certainly less common, probably because of the unique challenges associated with it.

Chief among those challenges is surely the fact that most consumers today are not accustomed to buying meat anywhere other than a supermarket. Even butcher shops are few and far between nowadays. Though they make a special trip to a farmstand or farmers' market for fresh produce and baked goods, shoppers are still likely to stop at the grocery store for other staples like meat, milk, orange juice, cereal, paper goods and health and beauty aids.

Just like small fruit and veggie growers who don't produce the volume to supply large distributors, small grass-fed livestock farms must rely on alternative marketing models.⁷³

*When to Consider a Website*⁷⁴

When is Web site development something to consider using in your marketing strategies? Ask yourself some questions similar to those you must ask to develop your overall marketing strategy.

- What percentage of my customers and potential customers use computers, the internet and internet selling/buying mechanisms (E-commerce)?
- Do I/we wish to use the Web as an avenue of sales, information or both in reaching customers?
- Where are my customers located? What geographic areas do I want to add to my customer circles?
- What is the competition doing? Will a website alter perceptions about your company compared to perceptions about other companies doing similar things?

If you wish to conduct sales activity through your website, there are other things to consider as well. You will have to have an operational means by which to receive payment (credit card, purchase order, Paypal account, etc.), since no cash or checks can change hands. People use E-commerce to speed up the process of making purchases. Are you able to deliver? Is staff available to process orders in a timely way? Are you up to speed on requirements for shipping in response to Web-based purchases?

If your customer base is local, a website may be of less value to you but still necessary for customers to find your phone number, etc. If you are looking at increasing national or international sales, it is a strategy that is necessary.

In some cases, your product sales increases will depend on a learning curve among potential buyers. For example, perhaps your food product is one that is becoming known for health value or for its value in an eating trend of another type. A website may be a way to increase knowledge (again consider the geographic factors) among the public. Web browsing has become a favored, fun activity for many, especially the young (who are the longer-term customers). You can put information about benefits, ways of using a product, trend growth, etc., on your website that will

⁷³ "The Unique Challenges of Direct Marketing Meat", Diane Baedeker Petit, Farming: the Journal of NE Agriculture, <http://www.farmingmagazine.com/article-3807.aspx>, August 2009

⁷⁴ "Marketing on the Internet Mary", Holz-Clause, Co-Director, Ag Marketing Resource Center, Associate Vice President for ISU Extension and Outreach, Iowa State University <http://www.extension.iastate.edu/agdm/wholefarm/html/c5-34.html>, May 2010

in a broad way emphasize why buying your product is a good thing to do. Throughout much of agricultural production, increasing public awareness and knowledge is considered critical to future business.

Where a website is linked is as important as using lively graphics on it. If you decide to proceed with developing a site, consider how a customer will come across the site if the exact site address is not known. These “hyperlinks” are critical for expanding image and sales, but don’t mean as much to existing customers. You will have already let them know exactly where to go to find you on the Web.

Advantages and Disadvantages

As highlighted in various studies, advantages and disadvantages of internet use by companies are:

<i>Advantages</i>	<i>Disadvantages</i>
Allows small companies to compete with other companies both locally and nationally.	Need to manage upgrades.
Creates the possibility and opportunity for more diverse types of individuals to start a business.	Need to assure Web site security.
Offers a convenient way of doing business transactions, with no restrictions on hours of operation.	Avoid being a victim of fraudulent activities on-line.
Offers an inexpensive way for small firms to compete with larger companies by their products available worldwide.	Cost required to maintain a site.
Provides higher revenues for small companies using the Internet.	Difficulty finding qualified consultants.
	Difficulty finding and retaining qualified employees.
	No market for old computers.

Table 17—Advantages and Disadvantages of Internet Use by Companies

Marketing Considerations

Producers considering marketing over the Internet should consider some of the following:

- Businesses successful on the Internet are often those that are unique, commonly used and affordable.
- When marketing meat products on the Internet you must slaughter and process from a federally inspected plant, unless you only sell to clients in your state.
- Unique businesses succeed on-line only if people can find them.
- Promote your Web site by submitting it to several search engines repetitively and linking with other high traffic related Web sites.
- Link (with permission) to many applicable Web sites, but be cautious about having too many links that quickly redirect consumers away from your site.
- Don’t link to your competitors, but check out your competitors’ Web sites.

- Promote your Web site off-line by sending out cards and putting your Web address on every promotion piece.
- Find a reliable service.

Going On-Line

If you are ready to go on-line you will need:

- High-speed internet
- Consider a toll free number—a risk-free way for potential customers to inquire.
- A user-friendly e-mail program (such as Microsoft Outlook) to manage client contact.

Designing your Web Site

Hiring a professional website designer is often a good idea. Before doing this, check references and on-line work samples. Do-it-yourself design programs can be limiting and may create websites that look like many others. If you choose to hire a designer, here is what he/she will need to create an effective website.

- Photographs representing your products and/or services.
- Any printed material such as business cards, brochures and catalogs are helpful for formatting and content.
- A storyboard that gives an idea of how many pages are needed and what each page should be about, as well as what you like and dislike.

Meat Producer Survey Responses

Locations

<i>County</i>	<i>Zip Code</i>	<i>% of Responses</i>
Curry (35%)	97444	5
	97450	30
<i>Sub-total:</i>		<i>35</i>
Del Norte (65%)	95348	5
	95531	30
	95536	5
	95567	25
<i>Sub-total:</i>		<i>65</i>
<i>Total:</i>		<i>100</i>

Nearest Cross-road:

- Davis Creek and 101
- Crescent City, CA
- Westbrook Lane and 101
- 101 and Pistol River Loop
- Langlois Mt. Road and 101
- US 199
- Floras Creek & 101
- 101 & Wilson Lane
- 101
- 101 & Fred Haight Dr.
- Lake Earl Drive and Lakeview Drive
- 101 and Oceanview
- Arrow Mills
- Curchtree
- Hwy 211
- 199 & Elk Valley
- Lower Lake

Figure 29—Survey Response Zip Codes

Livestock production

<i>Response</i>	<i>Percent</i>
Yes	13%
No	7%

Table 18—Currently Raise Livestock and Arrange for Slaughter/Processing

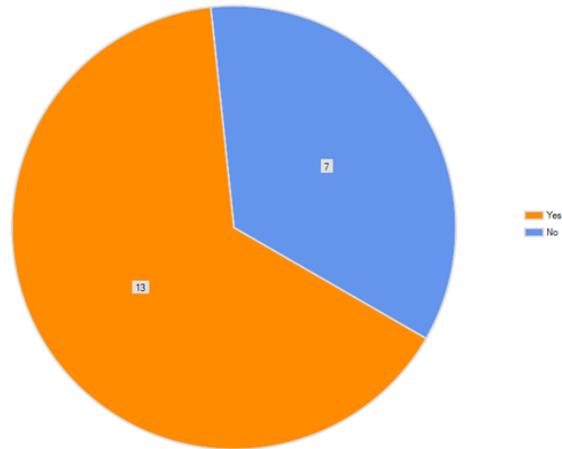


Figure 30—Currently Raise Livestock and Arrange for Slaughter/Processing

Time in the livestock industry

	<i>Percent</i> ⁷⁵
1-5 years	6%
6-10 years	0%
11-20 years	28%
21 years or more	67%

Figure 31—Time in the Livestock Industry

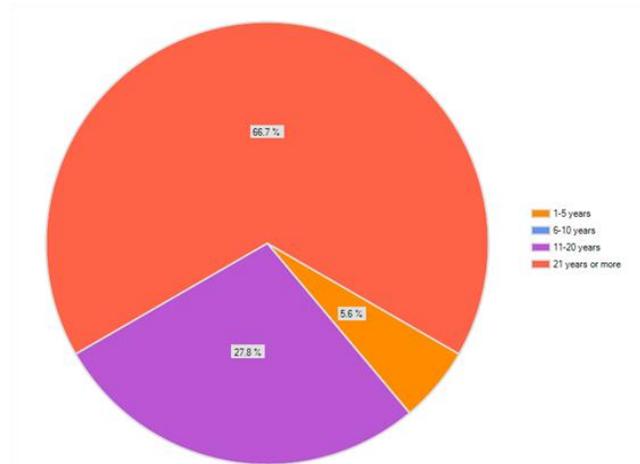


Figure 32—How Long Have You been in the Livestock Industry

⁷⁵ May not total to 100% due to rounding.

Potential and interest to raise livestock for slaughter and processing

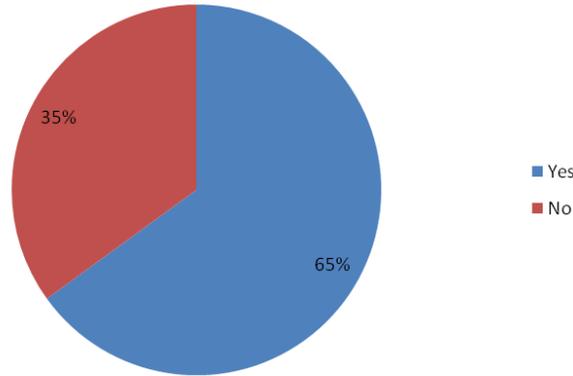


Figure 33—Potential and Interest to Raise Livestock for Slaughter and Processing

Harvest Capacity (all species)

	A. Current Annual Harvest (#)	B. Current Quarterly Harvest				C. Anticipated Annual Harvest with convenient facility (#)
		Jan-Mar	Apr-June	Jul-Sept	Oct-Dec	
Beef Cattle	850	50	165	306	225	1,262
Dairy Culls	880	220	215	215	230	880
Veal	0	0	0	0	0	0
Goat	70	0	23	23	24	270
Pigs	120	30	30	30	30	120
Turkey	0	0	0	0	0	0
Chicken	3,200	800	800	800	800	3,200
Lamb	77	6	33	19	20	275
Geese / Duck	0	0	0	0	0	0
Other - Rabbit	250	0	0	0	0	250

Table 19—Harvest Capacity (all species)

If a viable market exists for your products, what would encourage or inhibit you from expanding production beyond your current operating capacity? (apart from access to slaughter and processing services?) (70% responded to the question)

- I would change my plan and not sell feeders but finished animals. Possibly I would need more land.
- Not sure.
- More efficient access to local facility to bring down my cost as a producer.
- Sale price. Hay price. Pasture.
- Cost of processing.
- Better maintained pasture (we are in the process)

- You either make good money or you don't: make money = expand, don't make money = don't expand.
- Time management, pasture management.
- Nothing.
- Would not expand.
- Location, cost, scheduling
- Legally being able to sell more animals would encourage us.
- lack of acreage
- will increase production if favorable conditions exist

Current slaughter location(s)

- Bussman's (4)
- Redwood Meats (5)
- Alpine Meats
- Self-process (2)
- Humboldt Auction
- Stary Ranch

Miles traveled (one way)

- Average = 100 miles (one way)

Estimated cost per animal for slaughter (all species)

Note: Survey cost results will be substantiated by contacting the slaughter facilities reported in the survey, including a couple from out of the region. The actual costs reported by the slaughter facilities will be used in the business model spreadsheet.

<i>Species</i>	<i>Range of Costs</i>	<i>Median</i>	<i>Average</i>
Beef Cattle	\$75-1,200	\$150	\$388
Dairy Culls	75-150	90	105
Veal	N/R	N/R	N/R
Goat	100	100	100
Pigs	60	60	60
Turkey	N/R	N/R	N/R
Chicken	N/R	N/R	N/R
Lamb	50-150	105	102.5
Geese / Duck	N/R	N/R	N/R
Other	N/R	N/R	N/R

Figure 34—Estimated Cost Per Animal for Slaughter (all species)

N/R = no response

If a new slaughter facility were to be established, what qualities would it need for you to choose to bring your animals there?

- Federal meat inspector to allow for resale.
- Have in USDA organic certified.
- Organic certified. Game animals: deer, elk, etc.
- Price.
- Competitive processing cost. Ample cooler space to allow for aging (3-4 weeks). Ample freezer space to hold product till market available.
- Closer to our farm. Customers being happy with the way the animal is cut & wrapped. Prices.
- We need what we had -- I believe Bigler did well -- with a waiting list. Yes, closer to home and trucked off for slaughter. Had to have 2 in the past 2 years done at the ranch. Waiting for one to go now. Not everyone likes to see their animals strung up in your yard! Pozzie's ran a good business, too, before Bigler. They were a going concern when I arrived in 1949.
- Close location, cleanliness, reasonable pricing (Redwood Meats not reasonable), good management (scheduling, communication, service), good cutting options, good returns of packaged meat vs. carcass weight.
- Located closer to farm.
- Clean & neat, work with us for a marketable product at the retail level, freeze storage capacity.
- Purchase price for cattle
- Location, cost, scheduling
- Being inspected for legal sale.
- Low cost.

Current meat processing locations

- Busman's (3)
- Redwood Meats (4)
- Cartwright's Meats
- Self-processed (2)

Miles traveled (one way)

- Average = 73 miles (one way)

Estimated cost per animal for processing (all species)

Note: Survey cost results will be substantiated by contacting the processing facilities reported in the survey, including a couple from out of the region. The actual costs reported by the processing facilities will be used in the business model spreadsheet.

<i>Species</i>	<i>Cost</i>	<i>Median</i>	<i>Average</i>
Beef Cattle *	.45-.58	.50	.51
Dairy Culls *	.90-1.25	1.08	1.08
Veal	N/R	N/R	N/R
Goat	N/R	N/R	N/R
Pigs	N/R	N/R	N/R
Turkey	N/R	N/R	N/R
Chicken	N/R	N/R	N/R
Lamb **	50.00-70.00	65.00	65.00
Geese / Duck	N/R	N/R	N/R
Other	N/R	N/R	N/R

Table 20—Estimated Cost Per Animal for Processing (all species)

N/R = no response

* = reported on per pound basis

** = reported on a per animal basis

If a new processing facility were to be established, what qualities would it need for you bring your animals there?

- A federal meat inspector to allow for resale of product.
- The processing facility taht we use is very busy and we must schedule months in advance.
- USDA organic certified facility.
- Price.
- Economical processing. Ability to age beef 3 weeks+. Freezer space to hold product for extended time.
- Closer to our farm. Customers being happy with the way the animal is cut & wrapped. Prices.
- Cryovac facilities; note: processing costs \$.90/lb to \$1.25/lb for cryovac
- Closer to farm, timing of #'s that they can handle. 10/week? 20/week?
- Location, cost, scheduling
- Low cost.

Where do you currently sell your finished meat?

- We sell feeder calfs [sic] and lambs.
- N/A
- Sell to private party and they have it processed.
- Our primary sales are to large paoleizg [sp?] companies in WA and CA 300 beef 1000 lambs our local sales are direct to consumer.
- Individuals.
- Fortuna auction.
- Some to private individuals, most go to feed lot.
- Only sell lambs on the hoof to Rick McKenzie.
- retail, farmers market, on farm store

- Don't sell
- Don't sell
- We don't sell it. People buy it live & pay processing. Could sell meats at farmers markets, local store.
- Don't sell -- personal use only.

What characteristics do you use to market your product?

- Grass fed.
- N/A
- Free range beef.
- Natural grass fed.
- Grass fed, no hormones and other chemicals.
- Angus, grass fed, no chemical fertilizers.
- Grass fed with ground corn & alfalfa hay 6 weeks before kill.
- Grass fed, pasture-based, no hormones, no steroids, no antibiotics.
- grass fed, organic
- Grass fed
- All natural (no antibiotics -- just vaccine and worming).
- Grass fed, free range.

Interest in selling whole animals or cut/wrapped

	<i>Percent Response</i>
Specific cuts	15.4
Whole animals	100.0

Table 21—Interest in Selling Whole Animals or Cut/Wrapped

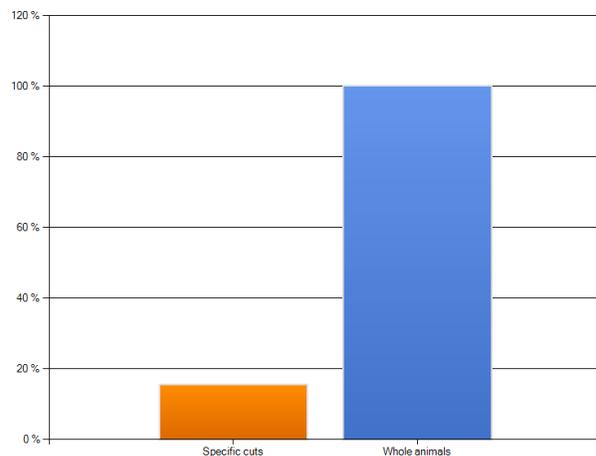


Figure 35—Interest in Selling Whole Animals or Cut/Wrapped

If the slaughter/processing facility were to manage the transportation of live animals from farm to facility, would you find this helpful?

<i>Response</i>	<i>Percent</i>
Yes	35.7
No	64.3

Table 22—Transportation of Live Animals from Farm to Facility—Helpful?

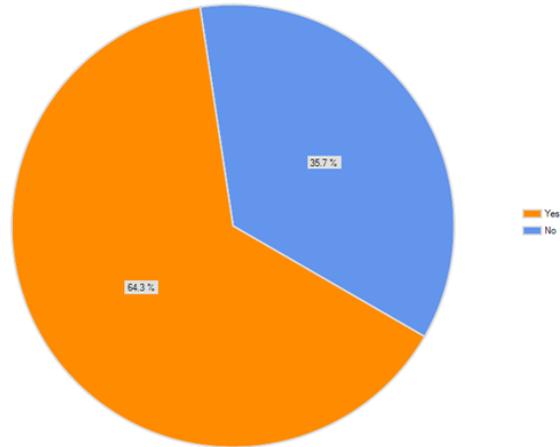


Figure 36—Transportation of Live Animals from Farm to Facility -- Helpful?

Interest in investing in a slaughter facility

Generally speaking, the current economic conditions are not favorable for encouraging investment by area ranchers/farmers. Yet survey responses (39%) indicate interest in investing in a facility in Del Norte County.

<i>Response</i>	<i>Percent</i>
Yes	38.5
No	61.5

Table 23—Interest in Investing in a Slaughter Facility

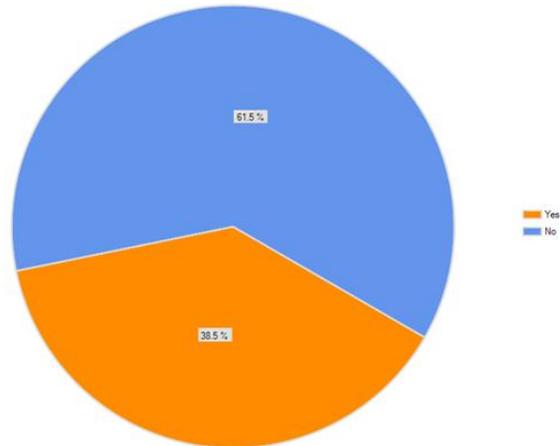


Figure 37—Interest in Investing in a Slaughter Facility

If a cooperative or other form of business entity of local producers was established to slaughter/process and/or market livestock products, what functions would you want this entity to do for your farm/ranch?

	<i>Response Percent</i>
Slaughtering	92.3%
Aging	92.3%
Packaging/wrapping	92.3%
Marketing	84.6%

Table 24—Business Entity: What Functions Would You Want this Entity to Do

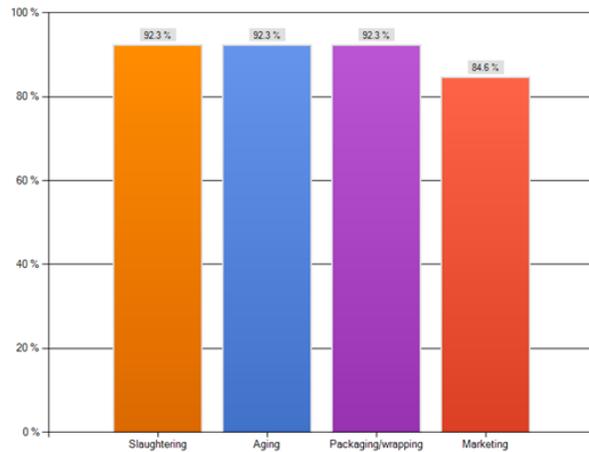


Figure 38—Business Entity: What Functions Would You Want this Entity to Do

Other comments?

- Is this a co-op?
- I think it would be used and helpful if built.
- We would love to market all our production as a specialty product rather than generic. 300 beef 100 lambs 100-200 goats if we could focus on production rather than marketing and distribution.
- Cut and wrapped to the meat's quality. Bandon does a great job on hamburger tubes.
- This all remains to be seen.
- Marketing cooperative.
- Best of luck on your project. We really need a federal inspected facility to be able to sell to consumers.
- I raise a couple of lambs/goats fro brush and grass control but would be interested in expanding if there was a market.
- We do have a large stock trailer. Would be willing to help.

Marketing Issues, Challenges and Opportunities

Consumer Education

Additional and continued consumer education will be vitally important in securing a premium for products in this growing niche market. Clarification of terms—natural versus grass-fed versus organic—and a better understanding of the unique and exceptional healthy benefits of a premium grass-fed beef product are the two areas in which consumers most need further edification. Point of Sales (POS) materials and store demonstrations will be key to an ongoing educational effort.

Consolidation of Producers and Processors

Major chains—Wal-Mart and Safeway for instance—are offering more “natural” meat products alongside the more traditional avenue—Natural Food Stores. This is driving up demand and causing major suppliers and processors to consolidate to meet the demands of these huge players entering the “natural” meats marketplace. In the short run, prices have been driven higher due to a shortage of product, but over the long run this may bring down market prices. Continued refinement of animal and meat quality could help sustain prices so the Del Norte product can continue to differentiate itself from less consistent and flavorful “natural” products.

Marketing based on our regionally superior grasslands is a recommended strategy. Building a superior provenance or appellation sensibility with the consumer can in turn still merit a premium price even in a soft market.

Careful and frequent attention to market pricing must be in place along with a solid production program. If prices drop, producers may wish to pull cattle out of the Del Norte program early in their development and divert them to a convention production stream—thereby saving on their over production costs and not losing money to production of a higher end product that may not, due to market fluctuation, at that time find a market outlet.

Inherent Product Attributes Raise Concerns with Some Buyers

“Natural” meats have distinct characteristics that may be an issue for meat market managers and buyers—more so than for consumers. Again education will be very important to dispel these concerns. Most common concerns are:

- Grass-fed beef has the reputation of being less tender than conventional, grain-fed beef. This is largely due to the lower saturated fat content, and/or is sometimes due to the increased time needed to fatten a cow for market. POS instructions explaining how to cook grass-fed beef slower at lower temperatures can ensure for a tender outcome.
- Because grass-fed, natural beef can have a distinct flavor from conventional beef, many meat market buyers have voiced concern that the consumer will not like the flavor. A 2002 Kansas State University study of 1,000 consumers concluded that consumers *prefer* the flavor of grass-fed, natural beef. Educating the meat managers and buyers to these results and funding and conducting in-store surveys within their own stores can offset this bias.
- Steaks and ground beef can easily secure a premium charge of 20 – 30 percent above conventional beef, but other cuts will have more difficulty charging a premium. Alternative outlets for these cuts may be the solution, such as a processed meat company who may be happy to purchase round, chuck, brisket or rump for processing into deli meats or sausage.
- Grass-fed beef tends to produce cuts with slightly yellow colored fat. This has been an issue with meat managers and buyers, but less so with consumers. Again education has played a role in gaining acceptance for this anomaly. For instance, studies show that yellow fat has higher nutrient content and is more flavorful. With this understanding it can become a positive attribute for the consumer.

Product Packaging

Sales of “natural” meats can suffer due to poor packaging or environmentally insensitive packaging. Given that premiums will be charged for this product, attractive package that makes the product look fresh and safe will be very important. Further, packaging should be kept to a minimum and be made from environmentally fit materials to align with the other inherent values motivating the consumer to buy this product.

Branding⁷⁶

The word "brand", when used as a noun, can refer to a company name, a product name, or a unique identifier such as a logo or trademark. Branding is a way to differentiate a product and provide higher value through guarantees and simplicity in purchasing.

In a time before fences were used in ranching to keep one's cattle separate from other people's cattle, ranch owners branded, or marked, their cattle so they could later identify their herd as their own.

The concept of branding also developed through the practices of craftsmen who wanted to place a mark or identifier on their work without detracting from the beauty of the piece. These craftsmen used their initials, a symbol, or another unique mark to identify their work and they usually put these marks in a low visibility place on the product.

Not too long afterwards, high quality cattle and art became identifiable in consumers' minds by particular symbols and marks. Consumers would actually seek out certain marks because they had associated those marks in their minds with tastier beef, higher quality pottery or furniture, sophisticated artwork, and overall better products. If the producer differentiated their product as superior in the mind of the consumer, then that producer's mark or brand came to represent superiority.

Today's modern concept of branding grew out of the consumer packaged goods industry and the process of branding has come to include much, much more than just creating a way to identify a product or company.

Branding today is used to create emotional attachment to products and companies. Branding efforts create a feeling of involvement, a sense of higher quality, and an aura of intangible qualities that surround the brand name, mark, or symbol.

Brand awareness is vitally important for all brands but high brand awareness without an understanding of what sets you apart from the competition does you virtually no good. Many marketers experience confusion on this point.

If a brand is successful in making a connection with people and communicating its distinct advantage, people will want to tell others about it and word-of-mouth advertising will develop naturally—not to mention writers in the press will want to write about the brand. Once that type

⁷⁶ This section relies on comments found in “Building A Strong Brand: Brands and Branding Basics”, Dave Dolak, <http://www.davedolak.com/articles/dolak4.htm>

of differentiation is established in the market's mind, advertising can help maintain and shape the brand.

What you need to do in branding is to communicate what the brand distinctively stands for using as few words or images as possible.

So remember, branding is all about creating singular distinction, strategic awareness, and differentiation in the mind of the target market—not just awareness. When you have been successful, you will start building equity for your brand.

Brand Equity is the sum total of all the different values people attach to the brand, or the holistic value of the brand to its owner as a corporate asset.

Brand equity can include: the monetary value or the amount of additional income expected from a branded product over and above what might be expected from an identical, but unbranded product; the intangible value associated with the product that cannot be accounted for by price or features; and the perceived quality attributed to the product independent of its physical features.

A brand is nearly worthless unless it enjoys some equity in the marketplace. Without brand equity, you simply have a commodity product.

If a brand is not effectively managed then a perception can be created in the mind of your market that you do not necessarily desire. Branding is all about perception.

Here are just a few benefits enjoyed when you create a strong brand:

- A strong brand influences the buying decision and shapes the ownership experience.
- Branding creates trust and an emotional attachment to your product or company. This attachment then causes your market to make decisions based, at least in part, upon emotion—not necessarily just for logical or intellectual reasons.
- A strong brand can command a premium price and maximize the number of units that can be sold at that premium.
- Branding helps make purchasing decisions easier. In this way, branding delivers a very important benefit. In a commodity market where features and benefits are virtually indistinguishable, a strong brand will help your customers trust you and create a set of expectations about your products without even knowing the specifics of product features.
- Branding will help you "fence off" your customers from the competition and protect your market share while building mind share. Once you have mind share, your customers will automatically think of you first when they think of your product category.
- A strong brand can make actual product features virtually insignificant. A solid branding strategy communicates a strong, consistent message about the value of your company. A strong brand helps you sell value and the intangibles that surround your products.

- A strong brand signals that you want to build customer loyalty, not just sell product. A strong branding campaign will also signal that you are serious about marketing and that you intend to be around for a while. A brand impresses your firm's identity upon potential customers, not necessarily to capture an immediate sale but rather to build a lasting impression of you and your products.
- Branding builds name recognition for your company or product.
- A brand will help you articulate your company's values and explain why you are competing in your market.

People do not purchase based upon features and benefits. People do not make rational decisions. They attach to a brand the same way they attach to each other: first emotionally and then logically. Similarly, purchase decisions are made the same way—first instinctively and impulsively and then those decisions are rationalized.

1. The most effective branding activities you can undertake are those that ensure client satisfaction and loyalty and promote positive word of mouth and success stories.
2. Brand from the Top. Branding works best when top management drives it.
3. Research and Measure Everything. Branding must begin, continue and end with research. Brand research involves developing a clear baseline, taking into account as many factors as possible, and then continuing the research and tracking on an ongoing basis.
4. Keep One Step Ahead.
5. Rally the Troops. The best branding comes from the top, but is infused throughout the company. Branding today is not just about advertising, external marketing, great service and thought leadership. Internal marketing makes it possible to keep the promises you make. Because every employee represents the brand, your brand is only as strong as its weakest advocate.
6. Work the Web. Without doubt the Web is the world's greatest direct marketing tool. But working the Web to build brand loyalty is critical as well for at least two reasons
 - Your website, increasingly, is your firm's calling card—the first entry point for clients, prospects and everyone else. Building a first class site to show off the breadth and depth of your experience and successes, and to offer useful interactivity and service delivery, is no longer just an option.
 - Second, the sheer breadth of Internet-based marketing vehicles, from e-mail and web sites, to chat rooms and portals, to trading exchanges and personal services, makes it vital to get more active online. Even if you are not using all these vehicles, your competitors probably are.

Del Norte County Brand Certification/Labeling Programs

Del Norte County could benefit from exploring the possible alignment with the “America’s Wild Rivers Coast”^{77,78} brand campaigns. While this has been more of tourism oriented approach, opportunity to expand the use to include meat products may be feasible.

Here are the 5 dimensions of brand definition that are essential steps in building a successful brand:⁷⁹

1. Develop a vision for your brand: The vision for a brand consists of a broad statement of what the brand aspires to be. The vision should take a long-term perspective, in recognition of the fact that building a powerful brand does not happen in weeks or months. A solid brand vision defines the business in terms the customer can understand and relate to. It must be original, motivational and inspiring.
2. Position your brand in order to differentiate yourself from competitors: Brands are multidimensional in that they usually carry with them a number of images and associations in the minds of the company and customers. However, all successful brands have a particular focus that differentiates it from those of competitors. A properly-positioned brand must transcend demographics and clearly identify likely prospects.
3. Create a personality for your brand: Ultimately, your brand must be something with which people can identify. It has to have its own personality, its own character. Your brand will likely evolve over time, but its essential character should endure.
4. Articulate the benefits your brand delivers to customers: In time your brand must come to represent a set of functional benefits in the minds of your prospects and customers. Thus, during brand definition your team must clearly articulate the set of benefits — the value — that it represents to customers. It is important to note that strong brands also carry with them a set of emotional associations. The emotional benefits of a brand are often supported by the functional benefits, and they form the basis of the brand's positioning.
5. Define the values your brand represents: Finally, your brand must represent a particular set of values. This is because your target customer base is composed of human beings, and humans are value-motivated. If you successfully articulate the values your brand represents, you have a better chance of getting customers to associate the values of your brand with their own values. Value definition can create long-term bonds between your brand and your target customers.

Use of the brand needs to be carefully controlled and monitored. As such a set of guidelines for use of the brand needs to be carefully crafted and agreed to.

⁷⁷ <http://www.wildriverscoast.com/>

⁷⁸ <http://www.wildriverscoast.com/WebTools.htm>

⁷⁹ <http://www.articlesbase.com/marketing-articles/the-5-dimensions-of-brand-definition-in-strategic-brand-planning-445052.html>

Niche Marketing/Branding

In a study regarding consumer acceptance of natural beef, the author noted two primary conditions for effective marketing of this niche product.

- 1) emphasize the lean or healthy aspects of the product on the label.
- 2) use a locally produced label, such as a local family, region, or state of the ranch location.

Labeling or branding products differentiates them or segregates them from other similar products. According to the USDA, value is added to a product when its market segment is expanded and the producer is allowed a greater share of revenue from the marketing, processing, or physical segregation of the product.

Del Norte County livestock producers may increase their share of product revenues through a business entity that is focused on processing and marketing branded natural grass-fed local meat products. Many consumers are willing to pay more for a product with a brand name they can identify because they associate that name with quality or trust. One study found that products with brand identification were priced as much as 40% over the price of similar non-branded products. The creation of a locally produced meat brand offers producers the ability to charge higher prices while maintaining higher quality over non-branded, non-certified products.

One method of branding includes origin labeling. Origin labels may be as broad as the country or state of origin, or as specific as the county or city of origin. According to a study, designation of origin labeling guarantees that the quality of the labeled product is due exclusively to the attributes of producing the product in a particular geographic region. Another study was motivated by the trend that "consumer's attitudes toward quality and desire for cultural identification have generated a growing demand for agricultural products that carry a strong identification with a particular geographic region."

Origin labeling, however, is considered a *credence attribute*, a product characteristic that is neither observed nor experienced by the consumer, and hence, must be communicated by a trusted source through proper product labeling. Certification and the corresponding labeling is one way of validating origin labeling. Certification provides an alternative that allows individual producers to qualify for inclusion under an established umbrella program (third-party) and label that identifies a product from others on the market. The certification process depends on establishing a set of standards, which define how the product is different. Producers who meet those standards qualify for certification. Producer brands (first-party), in contrast, usually are privately owned and managed, meaning the owners of a brand determine the set of standard and types of products that qualify to carry the specific brand label.

Develop a Brand Certification/Labeling Program

Consideration for certification program in support of regionally grown product could be advantageous to developing and re-enforcing a branded product from the region. At the outset this would be a voluntary program with agreed-to guidelines for use of the brand. One thought would be to adopt the existing Wild Rivers branding in play for other marketing aspects of the

region. Complicating factors may be encountered in the inter-state inspection requirements (see State of California Requirements in this document).

For a producer of agriculture or food products to be considered for a Wild Rivers grown certification, he or she must either reside or own property or a business in the region. For a raw agricultural product, such as meat, to be certified as Wild Rivers grown, it must be grown (raised) in the Wild Rivers region. Processed agricultural products must have at least 60% of their composition grown in the region. The use of the Wild Rivers grown logo is restricted to members in good standing. Certification would be a cost-free process and with membership reconsidered on an annual basis.

Natural and Grass-Fed Beef Branding Programs

Recent studies have found consumers willing to pay premiums for natural and grass-fed beef products which found that 38% of the consumer respondents were willing to pay a 10% premium for natural steak and 14% were willing to pay a 20% premium. Another study found that consumers spend, on average, 48% more per pound for the leanest ground beef products at supermarkets. In the consumer survey conducted for this study, it was found that local consumers are willing to pay 7-30% premiums for grass-fed meat products.

What does natural beef mean? The USDA definition of natural beef describes meat products that have been minimally processed and contains no additives, artificial flavors, colors or preservatives. This definition does not mention production techniques for natural meat, which can be confusing or even misleading to consumers. Unofficially, natural meat has been defined by ranchers and marketers as livestock raised without the use of antibiotics, growth hormones, and implants (i.e., “never-ever”).

The USDA label for grass-fed meat says the following: grass, green, or range pasture, or forage shall be 80% or more of the primary energy source throughout the animal’s life cycle. This means that on a daily basis producers can feed animals up to 20% from other sources, or wait till the finishing stage and feed animals entirely on other sources, as long as no more than 20% of the animal's feed during its entire lifetime comes from these alternate sources. In 2006, the USDA-AMS solicited comments on a revised standard which defines grass (forage) fed as: Grass (annual and perennial), forbs (legumes, brassicas), browse, forage, or stockpiled forages, and post-harvest crop residue without separated grain shall be at least 99% of the energy source for the lifetime of the ruminant specie, with the exception of milk consumer prior to weaning.

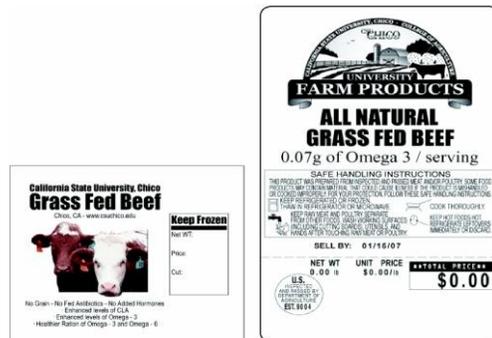


Figure 39—Labeling Examples⁸⁰

⁸⁰ Source: CSU, Chico Grass-Fed Information Web Site

Promotion

An effective promotion strategy will reach target customers through several types of media. These may include the following:

- Print Media: Residential mailers and brochures
- Electronic Media: Websites and Internet advertising
- Published Media: Newspapers, magazines, and coupons
- Broadcast Media: Television and radio

Traditional media avenues include newspapers, radio advertising, yellow pages and advertising with local and state agencies. Although these media avenues can be successful, it is imperative that the media chosen is appropriate for the target market. For example, if the target market is working women, aged 25-35, it would be best to conduct radio advertising during commute times, or use newspaper advertising on the weekends, as this market is likely to read the newspaper only on Sunday. The section of the newspaper the advertising falls under is also important. Informational brochures and taste samples may be great promotional tools as well, especially for fresh products.

Electronic Media

A Website can be a powerful marketing tool and is recommended as the basis of a promotion plan. The website design is important in building brand awareness and connecting products to consumers. There are companies who build websites and include hosting and other support services.

Also rapidly emerging is the use of social media applications (Web 2.0) such as Facebook, Ning, Twitter, blogs, e-mail campaigns, e-newsletters and too many other to list here.

Marketing and Promotion Resources

- The Agricultural Marketing Center⁸¹ provides innovative strategies for both direct and traditional marketing channels. This website outlines an approach to niche marketing and lists numerous books, periodicals and organizations that aid in developing an effective marketing plan.
- Hoovers, a Dun and Bradstreet company, has a list of services for the agriculture industry and includes a list of companies that specialize in wholesale food distribution. This website offers information critical to an effective marketing strategy.⁸²
- Agriculture World offers online advertising for the agriculture industry.⁸³
- The United States Department of Agriculture (USDA) offers important agriculture information.⁸⁴
- USDA Rural Development web site offers business and cooperative program information.⁸⁵

⁸¹ http://www.agmrc.org/business_development/operating_a_business/marketing/branded_products.cfm

⁸² <http://www.hoovers.com/free/>

⁸³ <http://www.agricultureworld.net/>

⁸⁴ <http://www.usda.gov/wps/portal/usdahome>

⁸⁵ <http://www.rurdev.usda.gov/rbs/coops/vadg.htm>

- The Agriculture Council of America organizes a National Agriculture Day each year.⁸⁶
- Information on marketing natural and grass-fed meats can be found on the California State University, Chico *Grass Fed Beef* Web site.⁸⁷
- The *Agricultural Marketing Resource Center*⁸⁸ has resources for marketing all types of agricultural products.

PROCESSING FACILITIES AND BUSINESS ASSESSMENT

Steps Needed to Build a Meat Plant

Aside from the problem areas of business planning and feasibility, financing and financial assistance, plant design, plant construction, labor and, for new plant owner-operators, rules and regulations, many owner-operators and potential owner-operators struggle to figure out what steps are necessary to build a facility. Owner-operators need to complete all of the tasks outlined below before they can move to plant construction and operation.

1. **Background Research**—Before going into any business, or expanding an existing one, it is good to ask a lot of questions about the industry. Talk with other meat plant owners, trade groups, regulatory agencies, farmers and customers; many questions and insights will emerge.
2. **Business Planning and Feasibility**—This step involves understanding from where your supplies (animals, non-meat ingredients, packaging, equipment) will be coming, who will be buying your products and what your competition is like. To complete this step, you will also need to know the ownership model for the plant, what your facility will look like and what construction costs will be.
3. **Plant Design**—This is an integral part of both your business plan and your financing. You will need to involve contractors to estimate your construction costs.
4. **Financing**—Once your business plan is together, you can start looking for financing.
5. **Permitting and Inspection**—Before you can build anything, you will need permits: business permits, building permits and wastewater permits. Since either the state or the federal government inspects all meat-processing facilities—even custom plants (those that process animals for their owners and do not sell meat to the public) must be inspected periodically—it is generally a good idea to have an inspector look over your plant design before you build.
6. **SOPs, SSOPs and HACCP**—Before you can begin operation, you will need to have a written plan for each of these. The plans must be examined by your inspection agency and are subject to regular review.
7. **Labor**—Meat processing is hard work. Finding able and willing employees challenges plants throughout the industry, and finding laborers and the time it takes to train them will be an important part of the business plan.

⁸⁶ <http://www.agday.org/index.php>

⁸⁷ <http://www.csuchico.edu/agr/grassfedbeef/niche-mkt/index.html>

⁸⁸ <http://www.agmrc.org/agmrc/default.html>

Existing Slaughter Demand vs. Del Norte Processing Facility Capacity

Today demand exceeds capacity in Del Norte. There is no processing facility capacity in Del Norte. This now includes the lack of even a local custom slaughter/processing operation.

Projected Processing Capacity

Based on animal inventory numbers, in Del Norte County there appears to be on the order of 1,000 beef cattle, 50 hogs, an undetermined number of sheep and other meat animals. Some level of processing might be added with animals from north Humboldt and southern Curry. This level of available inventory for annual processing suggest a very small scale processing operation to be successful, and even that would be at best a marginally profitable business.

Plant Sizes

The U.S. Department of Agriculture uses the Small Business Administration's definitions for slaughter and processing plant sizes. A "large" plant employs 500 or more people. "Small" plants are those with between 10 and 499 employees. "Very small" plants have one to nine employees or annual sales of less than \$2.5 million. These definitions apply to federally-inspected plants.

Recommendations in this study address "very small" plants.

General Plant Design Considerations for Fixed Facilities or MSU's ⁸⁹

Animal Holding Areas

Construction of animal holding areas should address the following:

1. Unloading of animals.
2. Design of animal paths for fluid movement.
3. Ample space for animals of all sizes.
4. Availability of water for each animal.
5. Ventilation to provide proper cooling/ heating.
6. Lighting.

Slaughter Areas

Construction of slaughter areas should address the following:

1. Is there a sterilizer in the slaughter room?
2. Is the knock box in the slaughter able to withstand the animals that it is intended to hold?
3. Is there an adequate inspection pan and head loop for official slaughter rooms?
4. Do you have 50 foot candles at the inspection station on the slaughter floor?
5. Are the rails in slaughter and coolers located at an adequate height for the purpose intended? Is the bleeding rail height adequate?
6. Are toilet facilities located near slaughter floor to prevent slaughter room employees from traveling through plant?

⁸⁹ Adapted from "Guide to Designing a Small Red Meat Plant with Two Sizes of Model Designs", Arion Thiboumery, Editor, North Central Regional Center for Rural Development, Iowa State University, University Extension, <http://www.extension.iastate.edu/Publications/PM2077.pdf>, 2009

Inedible Areas

Construction of inedible areas should address the following:

1. Inedible rooms need to limit access to the facility (e.g. an interior door for the establishment to place inedibles in the room and an exterior door for the rendering truck to pick up the inedibles without entering the plant).

Receiving and Shipping Areas

Construction of receiving and shipping areas should address the following:

1. Load out areas should be located so that product is not transported back through production areas.
2. Receiving and shipping areas should not open up into a processing room.
3. Receiving and shipping areas should be adjacent or close to where products/supplies are being stored.

Coolers and Freezers

Construction of cooler and freezer areas should address the following:

1. Are there separate coolers for storage of raw and cooked products?
2. Do the coolers have drains in them and are they adequately sized?

Storage Areas

Construction of storage areas should address the following:

1. Is there adequate storage for dry and non-meat ingredients?
2. Is there adequate storage for packaging and labeling supplies?
3. Is there storage for equipment?
4. Is there storage for maintenance tools?
5. Is there separate storage for cleaning tools, supplies, and chemicals—away from food?
6. Is there storage for employee belongings?

Processing Areas—Raw, Cooked, Smokehouse

Construction of processing areas should address the following:

1. Are there separate areas for processing cooked and raw products?
2. Is the processing room refrigerated?
3. Is the smokehouse in a room by itself with a drain?
4. Do carcass rails lead all the way into the processing areas for convenience and safety of dropping carcasses to tables or work areas?
5. Are floors sloped to drains?
6. Consider placement of equipment for ease of transition from one machine to another, e.g., meat saw close to boning table.

Employee/Welfare Areas

Construction of welfare/employee areas should address the following:

1. Do the bathrooms have separate sewer lines until outside the building or is there a backflow preventative device?
2. Does the restroom have a self-closing door and ventilation that is turned on with the light?
3. Is there a bathroom that customers can use easily?
4. Is there a separate break area for employees?
5. Is there a separate storage area and refrigerator for employee food?
6. Consider the location of the management office within plant—should it be closer to the retail area, employee welfare area, production area? Where does management spend most time? Is other office space necessary?
7. If you operate under FSIS-inspection, a separate office area is needed.

Retail/Customer Areas

Construction of retail/customer areas should address the following:

1. Is the retail area sufficiently separated from processing areas?
2. Can customers pick up their products without causing contamination of processing areas?
3. Are finished product storage areas (e.g., freezer, ready-to-eat cooler) located close or adjacent to retail area (and/or to shipping area)?

Traffic Patterns

Traffic pattern items that should be considered:

1. Is the flow of the product from animal arriving to packaged meat leaving adequate to prevent contamination of areas or products?
2. Is the traffic flow for delivered goods adequate to prevent contamination in processing areas?
3. Are traffic patterns planned to retain separation of cooked and raw products—including people (employees and non-employees), equipment and product?
4. What paths do delivery or pick-up persons take within your plant? How do you prevent contamination from the outside?

Sewer and Water

Sewer and water items that should be considered:

1. Do you have a sewer certificate? (If hooked up to a municipal system, this would come from the city.)
2. Do you have the water tested at least annually? Does your city?
3. What is the source of the water for the plant? City water (public) or private well?
4. Are sewer pipes from toilets/welfare areas separate from sewer pipes from production areas?

5. Is there proper water disposal (sewer) to protect food production areas from contamination—backflow devices?

General Construction Considerations

1. Are the floors, walls, and ceilings in wet areas smooth, impervious to water, and easily cleanable?
2. Are doors and hallways wide enough for the intended purpose—people, product, and equipment movement—e.g., smokehouse trucks?
3. Are there hose bibs in wet areas so that proper washing can be performed?
4. If there are windows, are the windowsills built to prevent accumulation of debris and dirt (no ledges is preferred)?
5. Do the floors in wet areas slope toward the drains and are the drains adequate in size? Do the drains have adequate traps?
6. Are the hands-free hand wash sinks located in areas where they will be easily accessible and useable?
7. Is the lighting adequate for the purpose and is it protected?
8. Is there a three compartment sink for cleaning equipment?
9. Will there be curbing around the rooms? What will it be constructed with and how will it be constructed to ensure cleanability and a good seal at the junction where the wall meets the floor?
10. Consider which direction doors open—freezers, coolers, etc.
11. Consider what type of doors are needed—swinging doors, lockable doors?
12. What type of security is needed?
13. Determine the volume of your business and growth of your business when determining the size of coolers, freezers, processing, storage areas, and retail areas.
14. Determine how plant can grow in the future with building additions.
15. Air flow (ventilation, heating, cooling, etc.) inside the plant should be addressed so that positive and negative air pressure are balanced and do not cause adverse situations in the plant—odor from animal holding pens/offal/slaughter area filtering to other parts of the plant. The retail packaging area should be positively pressurized to push air out into the rest of the plant.
16. Will any other operations be happening in the plant? Other non-meat food processing? Catering? Retail sales of non- meat foods and other items. What space is designated for those operations?

Locating the Facility

This study does not select a particular site but presents criteria in addition to the foregoing to consider. A number of critical decisions need to occur to further guide the site selection (e.g., which of the alternatives is to be pursued?). A specific location based on all of the criteria would be included in a detailed business plan. Each of the alternatives has its own set of requirements. What we can do is bracket land costs and provide other guiding advice.

Cost of land—Here are some of land site costs. Each needs to be further explored. Searching the Multiple Listing Service (MLS)⁹⁰ for Del Norte County for properties up to \$1,000,000 zoned agricultural or commercial/industrial revealed surprising few offerings. At least an acre is recommended with 2 acres preferred to give more than adequate space for trucks and parking. Perhaps there is someone out there already holding suitable land willing to consider development on their holdings.

<i>Acreage</i>	<i>Cost</i>
1	\$40,000
1	45,000
.78	79,000
.75	95,000
1.34	125,000
1.35	125,000
1.06	295,000
1.06	495,000
1.32	170,000
11.89	275,000

Table 25—Acreage and Costs

For purposes of estimating investment costs we will use \$40,000 per acre and assume no improvements (i.e., water, disposal, etc.).

Retail Sales—Another factor to keep in mind is whether or not a retail store offering will be included. Three of the alternative facilities contain a retail space. None of the MLS offerings looked promising for a contiguous facility of slaughter, meat processing and retail sales.

Water—A good supply of inspected/certified water is required. Locating the plant to use resources from one of the water districts might make sense, if a suitable site can be found.

Septic/sewage disposal—Connecting to existing disposal infrastructure would be ideal, if a suitable location can be identified with that hook-up available. Otherwise a septic system will need to be installed and that will require excellent drainage. This also requires a certification.

Concerns of Neighbors—These concerns are very real. No one, it seems, wants a slaughter facility in their neighborhood. Odors, sounds, traffic to and from the site, view shed and other concerns must be addressed.

Coastal Zone implications—California’s coastal zone generally extends 1,000 yards inland from the mean high tide line. In significant coastal estuarine habitat and recreational areas it extends inland to the first major ridgeline or 5 miles from the mean high tide line, whichever is less. In developed urban areas, the boundary is generally less than 1,000 yards. There are rigorous regulations that would likely not only complicate building a facility but would likely stall it for years as the permits, etc are worked through. There’s no guarantee of success. Don’t go there!

Facility Designs⁹¹

Slaughter leads to fabrication leads to grinding and packaging. The activities that make up a meat processing business are really a chain of dependent events, including the movement of product between different processing areas and storage. A plant cannot sell products until they

⁹⁰ Searched the multiple listing service (MLS) for commercial property and land up to \$500,00 and land of .75 to <http://www.mingtreerealestate.com/CountySearch/countySelector.php>

⁹¹ Ibid, “Guide to Designing a Small Red Meat Plant with Two Sizes of Model Designs”

are packaged, cannot package products until they are moved to the packaging area, and cannot move products to the packaging area until the products are cut, smoked, etc.

Each step is dependent upon what happens before it. The amount of product being processed at each step should match up with what is happening in the steps before and afterwards, otherwise bottlenecks occur.

Two fixed facility designs (2,600 sq. ft. and 5,250 sq. ft.) and one Mobile Slaughter Unit (MSU) are provided here (see appendices) to start the thought process for the final facility design and choice. The detailed architectural and construction design are out of scope for this feasibility study. Each requires additional evaluation and work.

Mobile Slaughter Units (MSU) Capacities and Utilities

A mobile slaughter unit (MSU) is a self-contained slaughter facility that can travel from site to site. MSUs can serve multiple small producers in areas where slaughter services might be unaffordable or otherwise unavailable. As such, MSUs can help small producers meet this demand, expand their businesses and create wealth in rural communities.

The primary purpose of an MSU is for on farm slaughter of livestock (USDA inspected or custom slaughter) and transport of dressed carcasses to fixed facility for chilling and subsequent processing. Skinning and evisceration take place inside the unit and dressed carcasses are then hung in a refrigerated section of the unit. The advantages of a MSU versus a fixed structure include lower processing costs, reduced stress on animals, lower capital investment, and less resistance from municipalities and neighbors.

The trailer is divided into three sections, mechanical/storage, hanging carcass cooler, and processing from front to rear. The design of the unit takes into consideration the need for robust construction while minimizing weight and USDA requirements for fit and finish of materials, which allow for sanitary operations and cleanup. The cooler and processing sections are wet areas and all materials and electrical fittings are rated for use in wet environments.



Figure 40—Mobile Slaughter Unit (MSU)⁹²



Figure 41—MSU Refrigeration Equipment

⁹² MSU photos can be found at <http://www.mobileslaughter.com/photos.htm>.



Figure 42—MSU Sink Area



Figure 43—MSU Processing Area



Figure 44—MSU Power Supply (Diesel Generator)

Slaughter capacity can range up from 10 beef, 24 hogs, or 40 sheep per day with two butchers. The unit can be operated by one butcher at a lower capacity. The hanging cooler in the trailer can hold up 6,000 lb of carcasses so the unit can operate for two days before returning to its base to unload carcasses for processing and re-supply.

A typical unit is equipped with a diesel generator, water storage, hot water heater, refrigeration and tools to allow for fully self-contained operation. Carcasses begin chilling immediately after processing and are down to temperature by the next morning.

A separate meat processing facility is required to complete aging and for cut and wrap or other processing (e.g., sausage, smoking, etc.).

Investment costs range depending on MSU design and other supporting facilities (i.e., cut and wrap processing, freezers, retail space, etc.). Costs range from roughly \$150,000-250,000, depending on the configuration and equipment.

MSU's in Operation

Poultry Units

- Sierra Foothills (CA)
- Kentucky Mobile Poultry Processing Unit
- Foothills Family Farms (NC)
- Community Agricultural Development Center (WA)
- Vermont Mobile Processing Unit
- Montana Poultry Growers Cooperative
- Island Grown Martha's Vineyard
- Massachusetts Mobile Poultry Processing Unit

Red Meat Units

- Coast Grown (CA) (currently out of production)
- Taos County (NM) Economic Development Corporation
- Wild Idea Buffalo (SD)
- Island Grown Farmers Cooperative (WA)
- Thundering Hooves (WA)
- Puget Sound Meat Producers Cooperative (WA)

- Broken Arrow Ranch (TX)
- University of Alaska
- The Modular Harvest System (NY)
- Nebraska Prairie Harvest Project (NB/CO)

MSU versus Fixed Plant

The meat and poultry industries have become increasingly consolidated, while consumer interest in locally grown and specialty products has continued to expand. The industry consolidation has resulted in a lack of U.S. Department of Agriculture (USDA) or State-inspected establishments available to small producers of livestock and poultry in some remote or sparsely populated areas. These small producers often serve the needs of their community and the growing demand for forage-fed, natural, and organic meat and poultry products. MSUs can serve multiple small producers in areas where slaughter services might be unaffordable or otherwise unavailable. Therefore MSUs can help small producers meet this demand, expand their businesses and create wealth in rural communities.

The advantages of a MSU versus a fixed structure include lower processing costs, reduced stress on animals, lower capital investment, and less resistance from municipalities and neighbors.

Building and operating a USDA-inspected mobile slaughter unit can require creative approaches to regulatory compliance, because federal regulations are based on fixed facilities (see Appendix).

Here are a few of the challenges required at each site where the MSU is operated:

- Certified water sources
- Sewage and waste disposal
- The grounds immediately surrounding the MSU operational site are to be maintained to prevent creation of insanitary conditions that could lead to adulteration of product.
- Sanitary Facilities and Office Accommodations for Inspection Personnel

In short, FSIS treats MSUs the same as a fixed facility, and this pertains to all aspects of operation.

Custom Slaughter, Cut and Wrap

Livestock producers and household consumers are increasingly interested in alternative marketing and purchasing arrangements such as direct marketing and custom meat production. Consumers are attracted to the idea of a fresh, wholesome and locally-produced product; producers are attracted to greater potential profits, increased control over pricing, direct contact with consumers and pride in the production of a quality product.

Numerous laws and regulations control the handling, processing and sale of custom meat. These laws vary between states and counties. Counties are required to have regulations that are at least as strict as their state, but some counties have even stricter custom meat requirements.

Retail meat that consumers purchase in grocery stores has been processed and inspected at United States Department of Agriculture-approved facilities. It bears the USDA stamp and can be sold to any consumer anywhere in the country. “Custom meat” is also known as “uninspected meat.” The term applies to all parts of meat animals such as cattle, hogs, goats and sheep. This meat is exempt from the Federal Meat Inspection Act because it is intended for personal household use ONLY; by law, it cannot be sold, traded, bartered or even given away. It can only be consumed by household members, their relatives or non-paying guests. It should not be used for pot luck or other community meals outside the home.

Regardless of state or local differences, here are some general regulations that pertain to custom meat transactions:

- Livestock producers must only sell live animals. It is illegal to sell or transfer ownership of any part of a custom meat animal after it has been slaughtered. In cases where multiple persons purchase a live animal, names of each buyer must be provided to the slaughterer and cut/wrap facility. After the sale, the producer may transport sold animal(s) to the slaughter facility as a courtesy to the new owner(s) for an additional fee.
- Buyer(s)/consumer(s) must purchase the live animal, contact the processing facility and indicate how much of the animal they own (half, quarter, etc.). They also give meat cutting instructions to the cut/wrap facility operator and specify all the carcass parts that they want returned to them—liver, dog bones, heart, tongue, tripe, etc.
- Custom slaughterers may slaughter animals for owners on the owner’s property using a mobile processing unit or at a custom slaughtering establishment at a fixed location; different regulations apply to both situations. Custom slaughterers must record all information about the live animal sale, including names of all owners of the animal. This information must be shared with the cut/wrap facility operator. The custom meat slaughter must tag custom meat animals with special tags with the owners’ names; these tags also indicate the animal is not for sale. All parts of the carcass and its by-products must be identified with the owners’ names at all times. The custom slaughterer must provide the owner with information about the weight of the live animal, carcass weight and weight of products delivered to the owner. The slaughterer may assume ownership of the hide if the owner does not want it. Custom meat facilities may also have a collocated retail business that sells inspected, pre-packaged meat products to the public.
- Cut/wrap facility operators cut carcasses into traditional cuts or as indicated by the owner. The cutter/wrapper never owns any part of the carcass and must render all carcass parts that are not returned to the owner; these non-inspected parts cannot be sold to another party, incorporated into other products or consumed by any non-owner. All carcasses and parts must be identified with their owners’ names and with the words “not for sale” (+/- “not inspected”) from the point of slaughter, through the cut and wrap process and delivery to the owner. For sausage or other ground meat products, added fat or trim must be from USDA-inspected meat sources or custom animals owned by the same customer who owns the end product.

Custom Slaughter, Cut and Wrap Investment Costs

Below are photos of different approaches to the equipment taken to the location. Generally, you need a truck or a van equipped with a hoist. Some will also have a hydraulic lift to help lift carcasses or offal containers. Other equipment may include a rifle or some other “stun” tool plus a variety of knives, barrels and label/stamps to identify the carcass as not for sale.



Figure 45—Custom Slaughter, Trailer⁹³



Figure 46—Custom Slaughter, Hoist on Pick-up



Figure 47—Custom Slaughter, Enclosed Pick-up⁹⁴



Figure 48—Custom Slaughter, Hoist & Lift⁹⁵

Once the animal is slaughtered it is then brought back to another facility to hang (refrigeration required), subsequently be butchered and then processed according to the cut and wrap instructions of the animals owner.

The investment costs we apply to this financial modeling will use a rig setup not unlike that of Alpine’s shown above.

⁹³ www.trivan.com

⁹⁴ Photo by John Irwin

⁹⁵ “Dirty Jobs: Mike the Butcher” with Mike Rowe, www.discovery.com

Estimated Investment for Fixed Plant, MSU and Custom Slaughter

Estimates in this table are derived from a variety of reports from actual processing facilities. Proformas driving these financial results are in the Appendix.

	<i>Higher</i>	<i>RISK</i>		<i>Lower</i>
	<i>Alternative 1: Large Plant*** 5,250 sq. ft</i>	<i>Alternative 2: Small Plant*** 2,600 sq. ft.</i>	<i>Alternative 3: MSU, 34' long, ~300 sq. ft.</i>	<i>Alternative 4: Custom Slaughter, Cut & Wrap</i>
Pre-chill Cooler size*	10 Beef	7 Beef	20 beef	Requires additional facility
Holding Cooler Size*	20 Beef	13 Beef	Requires additional facility	Requires additional facility
Slaughter days per year	300	300	150****	150****
Slaughter capacity	20 beef/day = 6,000/year	7 beef/day = 2,100/year	10 beef/day = 1,500/year	2 beef/day = 300/year
Additional Facility for MSU or Custom (coolers, freezers, cut and wrap)	Included	Included	\$150,000 (1,500 sq. ft.)	\$150,000 (1,500 sq. ft.)
Number of Employees	6–10	3–4	3-4	2
Trailer (animal hauling)	\$60,000	\$60,000	N/A	N/A
Truck (used for trailer or MSU)	\$18,000	\$18,000	\$18,000	N/A
Pick-up (3/4 ton, used) with hoist and cover	N/A	N/A	N/A	\$15,000
Processing Facility Investments	\$525,000– 2,100,000**	\$260,000– 1,040,000**	MSU @ \$170,000**	N/A
Total Processing Facilities Cost	\$603,000– 2,178,000	\$338,000– 1,118,000	\$488,000	\$130,000
Land acreage*****	2 acres	2 acres	1 acre	1 acre
Land cost (assumes \$40,000/acre)	\$80,000	\$80,000	\$40,000	\$40,000
Total Overall Estimated Investment	\$683,000- 2,258,000	\$418,000- 1,198,000	\$343,000	\$170,000
Payback Period (using assumptions in pro formas)	~2 1/2 years	~2/1/4 years	2 1/2 years	~3 years

Table 26—Estimated Investment for Fixed Plant, MSU and Custom

Notes:

- * Cooler space for one beef will provide space for 1.5 to 2 hogs, sheep or goats.
- ** Fixed facility price per sq. ft. = ~\$100-400, depending on materials used, without land acquisition costs. Based on estimated costs used in studies by USDA, Iowa State University and the Mendocino County/Ukiah feasibility study
- *** For both designs, the left-hand side of the plant could be extended to make more room that could be utilized for anything that would be needed, except slaughter. Both designs include a retail sales space.
- **** 2 slaughter days per week in field, 2 processing days, requires return from field to unload and re-stock MSU
- ***** Adequate water supply and septic must be included. Includes space for retail and equipment parking, turn-around for truck/trailer/MSU, space for animal offloading and holding, etc.

Water Use and Output: 150-200 gallons per beef equivalent, average. One beef equivalent = 2 hogs, 2sheep or 2goats

1 acre = 43,560 sq. ft.

Workforce Feasibility

Finding capable and willing labor is a serious challenge for all meat processors, regardless of size. Small plants often require a higher average skill level than large plants but cannot afford to pay a high wage through the employee-training period.

Management and Workplace Culture

Retaining employees is just as important, if not more so, than hiring new ones. National studies consistently show that employees quit jobs more often because of workplace culture and relations with other employees, particularly managers or supervisors, than because of the difficulty of the work.

When considering employee compensation, one should consider more than just hourly wage. Some plants offer other financial benefits, such as insurance and paid breaks, and one plant lets employees work extra hours if they need the cash, even if business is slow. Plants may offer benefits in addition to salary to show their employees how much they are appreciated. Some examples include free hot lunches a few days a week or every day, free or reduced price meat products, company picnics, and paying for job training.

When hiring anyone, you must be careful that all employment paperwork is in proper order. Hiring an undocumented worker can put you in quite a muddle, particularly if you do so knowingly. California Workforce Development staff can provide you with the most current information about required documentation.

Workforce Investment Act (WIA)

As many plant owners will tell you and agency representatives will admit, simply posting a small meat plant job through will probably not be as effective as you would like. The Workforce Investment Act was passed to “retrain” workers displaced due to international trade. The

program subsidizes on-the-job training by paying up to 50 percent of the starting wage for up to six months. (This means that you could start someone at \$11+/hr. instead of \$7.50/hr while you train them.) To access this program, you will need to contact a “Workforce Investment Act Service Provider” and specifically request to post a job through this program.

Staffing and Recruiting Companies

Employee recruiters or staffing companies—sometimes referred to as “headhunters”—may be able to help you find capable and willing employees. However, as with everything, all companies are not the same and some will offer much better terms than others. Usually these firms offer several options:

1. A flat fee or percentage of one year’s wages for directly hiring people they find for you. Usually the more skilled the position is, the higher the fee. A skilled meat cutter could cost several thousand dollars to find.
2. Hiring an employee as contract, or “temp,” which means the employee stays on the staffing company’s payroll and they pay all expenses (e.g. workers comp, payroll taxes) for as long as the employee works for your company. Expect to pay around 1.3 to 1.5 times the employee’s hourly wage for this service.
3. Contract to hire, meaning that the employee will be on the staffing company’s payroll for a trial period (such as 90 days). After the trial period, the employee is eligible for hire by your company. Often there is no additional fee for the employee being hired by your company after paying the trial period costs.

Butchers and Meat Cutters⁹⁶

What Do Butchers and Meat Cutters Do?

Skilled preparation of meat for wholesale or retail trade is the principal function of BUTCHERS AND MEAT CUTTERS. Over three hundred cuts of meat can be made from animal carcasses from slaughterhouses.

Butchers and Meat Cutters work in wholesale or retail meat firms where they perform the following tasks:

- Cut larger pieces of meat from the slaughterhouse into smaller cuts.
- Cut, trim, bone, tie, and grind meats, such as beef, pork, poultry, and fish into cooking-size pieces.
- Shape, lace, and tie roasts, using boning knife, skewer, and twine.
- Wrap and weigh meat for customers and may collect money for sales.
- Place meat on trays in display counter.
- Estimate amount and type of meat needed and order meat supply.
- Receive, inspect, and store meat upon delivery.

In wholesale meat firms, Butcher apprentices begin their training by doing odd jobs in the plant such as clean-up. Training includes learning to operate equipment such as forklifts or power-

⁹⁶ California Occupational Guide Number 218, <http://www.calmis.ca.gov/file/occguide/butcher.htm>, 2002

driven saws and grinders. In time, apprentices gradually learn to divide whole carcasses, halves and quarters into cuts shipped to retail firms.

In retail establishments, Meat Cutter apprentices begin by preparing some of the cheaper cuts. They learn to bone meat and roll and tie roasts. They also learn merchandising, salesmanship, how to set up a counter display, and advise customers about meat preparation and cooking.

What Skills are Important

Some of the important skills, knowledge, and abilities for Butchers and Meat Cutters include:

- Product Inspection—Inspecting and evaluating the quality of products.
- Mathematics—Using mathematics to solve problems.
- Problem Identification—Identifying the nature of problems.
- Active Listening—Listening to what other people are saying and asking questions as appropriate.
- Equipment Selection—Determining the kind of tools and equipment needed to do a job.
- Operation and Control—Controlling operations of equipment or systems.
- Manual Dexterity—The ability to quickly make coordinated movements of one hand, a hand together with its arm, or two hands to grasp, manipulate, or assemble objects.
- Wrist-Finger Speed—The ability to make fast, simple, repeated movements of the fingers, hands and wrists.
- Customer and Personal Service—Knowledge of principles and processes for providing customer and personal services.

What is the Work Environment?

Meat Cutters working in retail meat markets move back and forth from counter to cooler. Butchers usually work in lower temperatures more often than Cutters. The occupation requires physical strength to lift and carry large cuts of meat and the ability to work with the hands and to stand for long periods. These workers need good eyesight and ability to move about with ease and speed. The work requires healthy workers who will not spread contagious diseases.

Workers should not mind working around animal carcasses. Although they work in clean and sanitary conditions, their clothing is often soiled with animal blood and the air may smell unpleasant.

Injuries to fingers and hands sometimes result from careless use of tools and equipment. The repetitive nature of the work may cause damage to the wrist (carpal tunnel syndrome). Occasionally, a worker may suffer a hernia or a back injury. Equipment guards, hand and stomach guards, and safety instruction during apprenticeship all help to prevent accidents.

Employers must enforce safety requirements of the State Division of Industrial Safety and provide first aid equipment and floor covering suitable for liquid drainage and long-term standing.

Union Membership

Butchers and Meat Cutters may belong to the United Food and Commercial Workers International Union.

What's the Del Norte Area Job Outlook?

<i>Counties:</i>	<i>Del Norte, Humboldt, Lake, and Mendocino⁹⁷</i>
May 2009 job estimates	210
Mean Hourly Wage	\$15.40
Mean Annual Wage	\$32,048

Trends

The number of jobs for highly skilled Butchers and Meat Cutters, who work mostly in retail outlets, is expected to decline. New automation and the consolidation of the meatpacking and poultry processing industries are enabling employers to hire lower wage slaughterers and meatpackers instead of higher paid Butchers in meatpacking plants.

Most red meat arrives at grocery stores partially cut up, but a greater percentage of meat is being delivered prepackaged, with additional fat removed, to wholesalers and retailers. This trend is resulting in less work and fewer jobs for retail Butchers.

Most job opportunities will come from replacing workers who retire, die, or leave the occupation for other reasons.

Hours

Butchers and Meat Cutters usually work a 40-hour week; those in retail firms may work on weekends.

Benefits

Almost all employers surveyed pay health benefits; many pay for dental, vision, and life insurance, sick leave, and retirement plans. Most employers also provide uniforms if they are required.

How Do I Prepare for the Job?

Union-apprentice Butchers or Meat Cutters must first be hired by a company that has signed an agreement with the Joint Apprenticeship Committee. Approximately 4,000 hours of supervised on-the-job training is required during the two-year apprenticeship. Apprentices also take a minimum of 144 hours each year of related classroom training. Journey-level status is granted after the apprentice qualifies in both job performance and classroom work.

⁹⁷ Occupational Employment (May 2009) & Wage (2010 - 1st Quarter) Data, Occupational Employment Statistics (OES) Survey Results, [http://www.calmis.ca.gov/file/occup\\$/oeswages/norcoastoes.xls](http://www.calmis.ca.gov/file/occup$/oeswages/norcoastoes.xls). Note: These figures do not include self-employment.

Butchers and Meat Cutters provide their own hand tools at the beginning of training. These include various knives, a cleaver, stitching needles, and a sharpening steel, that together can cost \$300 or more. Employers provide power equipment, linen, and uniforms if required, as well as protective gear.

Most employers prefer apprentices who have completed high school. Helpful high school courses include mathematics and any shop courses that develop skill in the use of hand and power tools.

Some firms give an arithmetic test to applicants. In general, apprentices must be at least 18 years old.

Butchers and Meat Cutters who begin work as trainees in independent shops can gain needed skills to shorten the apprenticeship period. Ex-military cooks and Butchers may have a shorter apprenticeship period. Employers look for a willingness and ability to learn and take responsibility and to deal with customers in a friendly, efficient way.

Licensing and certification is not required for this occupation.

Classes are not required after workers complete the classroom training program for apprentices.

How Do I Find the Job?

Direct application to employers remains one of the most effective job search methods. The most common way to enter this occupation is through the formal apprenticeship program run by employers in cooperation with the local Joint Apprenticeship Committee. Private firms are listed in the yellow pages under Meat-Retail and Meat-Wholesale. California job openings can be found at various online job-listing systems including CalJOBSSM at www.caljobs.ca.gov or at JobCentra National Labor Exchange at www.jobcentral.org.

For other occupational and wage information and a listing of the largest employers in any county, visit the Employment Development Department Labor Market Information Web page at www.labormarketinfo.edd.ca.gov. Find further job search assistance from your nearest Workforce Services Office www.edd.ca.gov/Jobs_and_Training/Workforce_Services_Offices_by_County.htm or the closest One-Stop site, www.servicelocator.org/.

Where can this Job Lead?

Journey-level Meat Cutters may promote to head Meat Cutter, assistant manager, or manager of a shop. There are fewer opportunities in wholesale firms, although some journey-level Butchers go on to supervisory jobs or to work as an inspector. Butchers, like Meat Cutters, sometimes become owners of retail shops.

Other Sources of Information

For the closest district office contact:
 California Division of Apprenticeship Standards
 455 Golden Gate Avenue, 8th Floor
 San Francisco, CA 94102
 (415) 703-4920 (415) 703-4920
www.dir.ca.gov/DAS

Here's what is listed as of 2/9/11:⁹⁸

Trade or occupation:	Meat Cutter
Program length:	24 months
Starting wage:	\$9.45 per hour
Minimum age:	18
Education prerequisites:	None
Additional prerequisites:	Promotional Position
Physical requirements:	No
Exams:	Written Test: None Oral Exam: None
Additional requirements:	None
Contact information:	Oakland & Vicinity Meat Industry J.A.C. 28870 Mission Blvd Hayward, CA 94544
Contact person:	John Bueno, Chairman
Contact phone / e-mail:	(510) 889-0870, JBueno@ucfw5.org
Applications taken:	Applications may be obtained from signatory employers by inquiring with the manager of the store or factory.
List Type:	Ranked

Trade or occupation:	Meat Cutter
Program length:	24 months
Starting wage:	55% of Journeyman wage
Minimum age:	18
Education prerequisites:	None
Additional prerequisites:	Must be able to read and write in English and must be able to complete a written application in his or her own handwriting.
Physical requirements:	Yes
Exams:	Written Test: None Oral Exam: Yes
Additional requirements:	None
Contact information:	Santa Clara County Meat Cutters J.A.T.C. 240 S Market San Jose, CA 95113
Contact person:	Larry Parola, Chairman

⁹⁸ http://www.dir.ca.gov/databases/das/results_aiglist.asp?varCounty=%25&varType=46&Submit=Search

Contact phone / e-mail:	(408) 998-0428
Applications taken:	Monday thru Friday during normal business hours at the above location.
List Type:	Seeks Employer

Trade or occupation:	Sausage Maker
Program length:	24 months
Starting wage:	\$9.45 per hour
Minimum age:	18
Education prerequisites:	None
Additional prerequisites:	Promotional Position
Physical requirements:	No
Exams:	Written Test: None Oral Exam: None
Additional requirements:	None
Contact information:	Oakland & Vicinity Meat Industry J.A.C. 28870 Mission Blvd Hayward, CA 94544
Contact person:	John Bueno, Chairman
Contact phone / e-mail:	(510) 889-0870, JBueno@ufcw5.org
Applications taken:	Applications may be obtained from signatory employers by inquiring with the manager of the store or factory.
List Type:	Ranked

United Food and Commercial Workers International Union
Suffrage Building
1775 K Street N.W.
Washington, DC 20006
(202) 223-3111 (202) 223-3111
www.ufcw.org

Vocational Meat-Cutting Schools

There are limited training programs available in the U.S. Only a very few vocational meat-cutting programs exist in the United States.

A couple of the programs focus on high school students; however, the Pioneer Career Training Center accepts adult students. The Pioneer Career Training Center teaches slaughter as well as processing skills. All will accept job postings at any time.

Ohio

Pioneer Career Training Center Meat Processing Program 27 Ryan Rd. Shelby, OH 44875 Contact: Bill Kucic (419) 347-7744 x.1269 kucic.bill@pctc.k12.oh.us www.pctc.k12.oh.us/meat.html	Buckeye Career Center Food Processing/Meat Cutting Program 545 University Dr. NE New Philadelphia, OH 44663 Contact: Scott Ripley (800) 227-1665 sripley@bjvs.k12.oh.us Fax (412) 469-3209
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Pennsylvania

Steel Center Area Vo-Tech School Meat Cutting Technology
565 Lewis Run Road
Jefferson Hills, PA 15025
Contact: William Bair
(412) 469-3200 ext.107
Fax (412) 469-3209

There is another program at Olds College in Alberta, Canada which includes training in slaughter. This program lasts five months, is offered twice a year, and costs about \$10,000 with room and board.

Alberta, Canada
Meat Processing Program Olds College
4500 50th Street
Olds, Alberta, Canada T4H 1 R6
Contact: Brad Mcleod
(403) 556-4792
bmcleod@oldscollege.ca
www.oldscollege.ab.ca/programs/MeatProcessing/index.htm

All of these programs are seeking to increase their enrollment numbers. Those in Oklahoma and Canada have 10-15 job opportunities for every student that graduates.

You might consider finding someone young who is interested in learning from one of these programs and send him or her under a written “indentureship agreement.” The agreement would stipulate that she or he would agree to work for you for a minimum number of years after completing training in exchange for your paying for the education. Such an employee would be required to reimburse you for the costs if they dropped out or failed to work for you for the specified minimum amount of time.

Employment Opportunities

Number of Jobs

The proposed alternatives would directly employ from 2 to 6 persons.

Knowledge, Skills and Abilities

A butcher is a person whose job it is to prepare meat in some way for sale. People want to become a butcher for different reasons, but it usually stems from a love and appreciation for fine meats. Those who become a butcher may also find it to be a very rewarding career at a community level, as working as a butcher at a meat counter involves interacting with the public on a daily basis, and helping them to discover new meats and to increase the pleasure they get from the cuts you give them.

There is no formal certification or education needed to become a butcher, as it is a vocational trade. While some butchers may find it beneficial to attend some sort of formal culinary school, to gain a deeper understanding of how meat may be used, this is by no means necessary to become a butcher. Some of the most skilled and renowned butchers have no formal education beyond that of high school, having learned their trade at the chopping block.

There are two similar, but slightly different, paths to become a butcher. One is through a formal apprenticeship program, and the other is through on-the-job training. The first is ideal for people who want to become butchers, perhaps to open their own shop, perhaps to work at a high-end butcher shop, while the second is suited to those who want to get a job immediately at a grocery store or butcher shop. Both have their strengths and weaknesses, and in the modern world on-the-job training is a much more common path to become a butcher.

Three areas can be worked on before or during training, without having to actually be working with meat. One is simply building muscle and endurance for the job. Being a butcher requires a great deal of heavy lifting, as carcasses can be massive, and the steady chopping and sawing required can exert a great deal of upper-body strength. Building up the necessary strength before beginning work as a butcher will make the work substantially easier, and allow you to focus on learning, rather than being exhausted.

Another area that can be developed to become a butcher before starting training is hand-eye coordination. Butchers make use of very sharp tools in their work, and are often moving quite quickly. While tools have become much safer, and much easier to get thin or otherwise ideal cuts of meat from, hand-eye coordination still is a valuable skill. Lastly, one can study the basics and theory of butchery long before getting on-the-job training. Books on the subject can teach all about different meats and cuts, how best to cut, and even storage and cooking techniques that the future butcher can use and pass on to customers.

Getting a union apprenticeship can be a difficult task, and the best way to see whether it is feasible is to find the butcher's union in your region and approach them with your interest. Getting on-the-job training can be easier, as it means simply finding a job opening for an apprentice butcher, and beginning work. For the first few months, or even years, you may be doing simple, repetitive tasks, but as you prove yourself you will advance and eventually become a butcher.

Sample butcher training course outline⁹⁹

Level 1—Butchery 101, Length: 5 days, Cost: \$2,000 per person plus \$100 materials fee

- Knife skills & safety techniques
- Basic anatomy
- Cooking demos & taste tests
- Discussions on sourcing, sustainability and labeling
- Demos and hands-on workshops on carving a pig
- Lamb fabrication demo
- Sausage making
- Charcuterie demos & techniques
- Field trips
- Chicken fabrication
- Chicken slaughter (optional hands-on participation)
- Each participant will take home their own set of knives and scabbard

Level 2—Pork or Lamb Whole Animal, Length: 3 week program, Cost: \$5,000 per person

In addition to the content taught in 'Pork or Lamb Major Cuts' you will learn:

- How to make sausages and create recipes for sausages
- How to brine and cure meats
- Different types of grind and how they are done
- How to make stocks and reductions
- How to make value added products (lard, suet balls and dog-food)
- *Due to a lack of time we will only be able to instruct you on short-term cures for charcuterie.*

Level 3—Pork, Lamb and Beef Full Training, Length: 6-8 week program, Cost: \$10,000 per person

In addition to the content taught in 'Pork or Lamb Major Cuts' and 'Pork or Lamb Whole Animal' you will learn:

- The curriculum for this level is custom creating after working with you to understand you specific educational needs
- Lessons on sustainability, grass-fed and organic terminology and usage
- How to do a yield test
- How to tie a roast, french a rack, debone a chicken and other retail cut techniques
- Lessons on genetics, breeds and market terminology
- Lessons on how to cook different cuts of meat and best resources for cooking information

⁹⁹ Fleisher's Grass-fed and Organic Meats, 307 Wall Street, Kingston, NY 12401, 845-338-MOOO (6666), <http://www.fleishers.com/consulting-training.htm#class>

- Visits to farms, restaurant/or grocery shop that follows a whole animal program and a slaughterhouse

Source of Employees

The following occupations are employed in California **Animal Slaughtering and Processing**:¹⁰⁰

SOC Code	Occupation Title [Training/Experience Level]	Employment in California		
		2008	2018	Numeric Change
51-3023	Slaughterers and Meat Packers [Training Level: Moderate-term on-the-job training (1-12 months)]	6,000	6,300	300
51-3022	Meat, Poultry, and Fish Cutters and Trimmers [Training Level: Short-term on-the-job training]	4,200	4,400	200
53-7064	Packers and Packagers, Hand [Training Level: Short-term on-the-job training]	1,700	1,800	100
51-3021	Butchers and Meat Cutters [Training Level: Long-term on-the-job training (> 12 months)]	500	500	0

Given the overall low level of activity in this field, finding trained, skilled and competent employees is difficult. A recent search for a butcher in Eagle Point, OR with advertising in 4 states resulted in one butcher found, and he was 84 years old. He works part-time at the Butcher Shop in Eagle Point. Eagle Point is located near Medford Oregon and is one of the fastest growing residential areas in the state of Oregon.

Finding competent workers to support any one of the 4 alternatives could be quite problematic. In particular the Custom alternative requires a high level of skill not just to kill and prepare the carcass but also to provide quality butchering, a high skilled trade requiring quite a bit more knowledge than a cutter/wrapper or other meat preparation (e.g., sausage).

Use advertising, working through the regional workforce entities, word of mouth or other ways to spread the word. Finding the right business skills may be more important than the specific butcher or cutting skills. For a small operation such as proposed, business skills, including marketing, may be more difficult to acquire but are absolutely necessary. The butcher and cutter skills can always be learned, and this means that short of finding the right individual(s), a

¹⁰⁰ List of Occupations Employed in Animal Slaughtering and Processing, NAICS Code 311600, <http://www.labormarketinfo.edd.ca.gov/iomatrix/Staffing-Patterns3.asp?IOFlag=Ind&SIC=311600>, 2008

training package may need to be assembled. Work force development entities should be of some assistance on this.

Information Technology

Investment in Information Technology (IT) is loosely defined as including computers and telecommunications equipment and their necessary hardware, software, and services.

From word processing, to networking, to the internet, to e-commerce, IT has become the driving force in today's global economy. Firms regularly invest in IT for such activities as payroll, human resources, accounting, supply chain management and a host of other functions. While smaller firms have been more reluctant to invest heavily in IT, larger firms have found it almost imperative and profitable. Of particular concern to smaller firms is the resource requirements associated with IT investment.

Rationale for Increased Uses of Information Technology

Thinking back over the years, many ranchers can remember the days when cattle buyers came to the ranch or bought at auctions. Gradually, feeder sales became the most common marketing method. Now cattle can be marketed through videos. In the beef industry, new changes include the appearances of alliances, branded beef and marketing cooperatives as new methods of selling animals. As marketing changes, it will be important to evaluate ways to capture a larger portion of the consumer's dollars. Grass-fed beef could offer ranchers another avenue of marketing.¹⁰¹

Business-to-business electronic commerce is the cutting edge today. Firms use the Internet as an inexpensive, easily accessible, platform for business communications. Using Internet based systems, a firm can find products, negotiate prices and specifications, confirm supplier qualifications or obtain information about scheduling and delivery—all key business processes that are the first step in a supplier-customer relationship. Firms in the meat production sector increasingly are using the internet, particularly for informing producers about their alliance linkages, to conduct online cattle auctions and other approaches to selling. Other IT systems that are not Internet-based are also used.¹⁰²

While the growth in farm computer use is a necessary condition for information technology to extend throughout the market channel, the important link of individual animal record-keeping systems at the ranch is missing. Even if processors and feeders gave ranchers performance information, ranchers need a detailed system in their operation to make appropriate management decisions. The cattle industry lags behind other livestock sectors in record-keeping at the individual animal level, with the exception of operations producing pure-bred herds and breeding stock. The small size of many cow-calf operations and low-intensity management practices used on these part-time operations are significant barriers to adoption of farm-level information systems.

Appropriate emphasis on relationships and trust-building may be a catalyst for faster adoption of information technology at the production level, which currently lags. But the fragmented and

¹⁰¹ "Thinking Through the Process", <http://www.sarep.ucdavis.edu/grants/reports/nader/think.htm>

¹⁰² "Information Technology and Cattle-beef Supply Chains", Victoria Salinm, Assistant Professor, Texas A&M University, <http://agecon2.tamu.edu/people/faculty/salin-victoria/research/beefweb.pdf>, August 2000

disperse nature of the industry, coupled with inexperience with information technology, imply that the full efficiencies of information systems will not immediately be available to supply chains in the meat processing sector.

Getting Started

Many operations can get started using a combination of software for bookkeeping, spreadsheets and database management. Microsoft provides all of this plus word processing in the Professional Office Suite. However, you can obtain at no cost an open source product that has all of these applications included and more. Download OpenOffice at www.openoffice.org. It is completely compatible with the Microsoft product and costs nothing.

Use of either one of these products will require some set up to make it all work for your operation. Do it yourself or hire a local contractor to help out. Often if you supply the knowledge and are a bit patient, you can get a high school or college student at a very reasonable cost.

Operations Management and Sales

Now available are a number of integrated software products that provide a full range of services to the facility operators.

Included in those packages likely you'll find the following modules:

- Customer Database
- Inventory Management
- Employees/Payroll
- Point of Sale (POS)
- Cutting Instructions
- Work Orders
- Invoices
- Scheduling
- Reporting
- Recalls
- Labels
- Website feeds

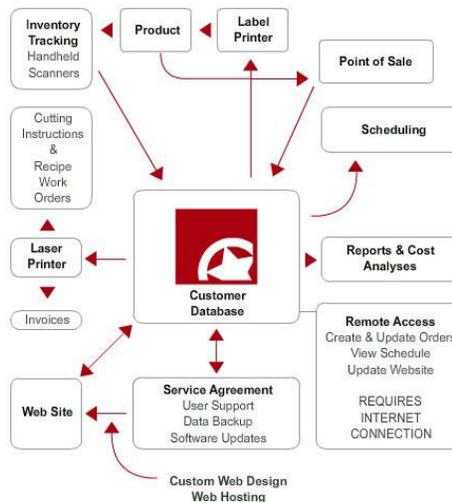


Figure 49—Integrated Applications Diagram

Other Potentially Valuable Applications

Online Auctions

Online auctions can enable buyers and sellers to bypass some of the inefficiencies of the current system, in which animals arrive at central marketing locations such as sale barns or regional stockyards, undergoing repeated transportation, stress, and exposure to disease. To the extent that online auctions can avoid these logistics, online auctions can drive costs out of the total chain. Transportation costs may fall as well, if the multiple movements of livestock can be avoided.

Some examples include:

- CattleUSA.com
www.cattleusa.com
- Superior Livestock Auction
www.superiorlivestock.com
- LMA Auctions
www.lmauctions.com
- DVAuction
www.dvauction.com
- New Age Marketing
www.newagecattle.com

Herd management

Whole-herd health management such as selecting your next bull or replacement females, cattle nutritional needs, crossbreeding systems and safe cattle handling are just a few of the topics in this management category. Often discussed in the context of dairy operations but growing in other aspects of meat animal management.

Back when average herd size was 50 cows or fewer; it was easier to manage cows individually. As herd sizes increase, however, it becomes harder to make sure each cow gets the attention it needs. With animal health and reproduction programs that require regular cow handling, individual cow management is even more critical.

System modules include complete tracking for animal categories, number of animals, multiple ranch operations, complete pedigree history, medical history, medical inventories, custom reports, multi-user, electronic id tracking, premise id, growth history, pasture movement history, feed history and any other aspects suitable for ensuring maximum return on investments.

Traceability

Many animal producers support establishment of a nationwide identification system capable of quickly tracking animals from birth to slaughter. While they believe such a system is needed to better deal with animal diseases or meet foreign market specifications, some consumer groups and others believe it also would be useful for food safety or retail informational purposes—and that the program should be able to trace meat products through processing and consumption.¹⁰³

Traceability software allows organizations in the food industry to obtain information about origin, processing, transportation and storage of food products, and reduces the risk of selling

¹⁰³ “Animal Identification and Meat Traceability”, Congressional Report Service,
<http://www.nationalaglawcenter.org/assets/crs/RL32012.pdf>, January 2007

damaged or expired goods. These applications keep track of products not only within, but also outside of the organization by providing such functions as bar-coding, recall management and product history management.

A meat tracking & traceability system is divided into three phases based on the flowing process of meat production:

- growing of livestock
- butchering
- processing of meat and marketing of finished product

An ear tag is one of the top ways to identify livestock, but after the number wears off, the piece of rubber is rendered useless.

Similarly, metal tags are often only visible in the handling pen. Obtaining the essential information from the hard-to-view tags can take significant time. Piles of papers then need to be looked through to coordinate the animal with the number before making individual management decisions.

During these hectic steps, miscommunication can cause mistakes to be made and money to be lost. Electronic tags hope to push this scenario into the history books.

With a livestock disease traceability system on the horizon, electronic tags, also known as Radio-Frequency Identification (RFID) tags, will be able to combine traceability with inventory management.

RFID tags come equipped with a quarter-inch microchip that contains a unique number. All you need to do is point the reader at the tag and it scans the number into a handheld PC or sends the information back to your computer.

Because of the scanning process, livestock can be evaluated and worked with all in one step, reducing miscommunication and treatment mistakes while verifying an animal's identification. Readers can also be attached to pasture entryways, feeders and onto scales to record weight gains.

Inventory Management

Ranch inventory management can be extremely beneficial. Knowing what you have to work with can be your key to success and can save you money. Inventories can also be beneficial for those who want to sell their land. A complete description of what it is that is being sold can better your chances of sale. These systems help manage the following types of information:

- **Acreage** Acres—total acres, surface acres, grazable acres; Stocking Rates—by forage
- **Facilities** Water Facilities—storage tanks, pumps, troughs; Pens/Working Facilities—dimensions, square feet, surface acres, materials, use, locations, capacity; Houses—use, size, condition, sleep capacity; Barns—use, size, condition; Storage Buildings—fuel, feed, water, equipment, saddle rooms, tools;

Utilities—electricity, water, gas, etc.; Fences—types, miles, age, condition;
Roads—types, miles, surface acres, condition, location, accessibility

- **Equipment** Farming Equipment—tractors, plows, drills, hay forks, drags, shredders, discs, offsets, etc.; Livestock Equipment—chutes, calf tables, trailers, pens, etc.; Shop Equipment—generators, compressors, tools, drills, etc.; Hunting Equipment—blinds, decoys, stands, etc.; Vehicles—trucks, tractors, cars, year, use, mileage, condition
- **Natural** Wildlife—types, description, quantity, locations, season dates; Plants—native, cultivated, description, season, percent crude protein, percent dry matter, percent TDN, percent per pasture; Water—sources, amount per pasture, length, surface acres, days for livestock, flow rates; Soils—types, percentage per pasture, per pasture, characteristics, ecological sites, capabilities, uses, acres of soil type per pasture; Climate Information—temperature, precipitation, freeze dates, growing seasons
- **Livestock** Number—of bulls, cows, calves, etc.; Age—average age according to sex; Sex—bull, cow, heifer, steer, yearling, doe, buck, etc.; Species—*B.taurus*, *B.indicus*, etc.; Use—dairy, stocker, beef, hunting, sheep, goat, etc.; Horses—number, use, age, sex
- **Personnel** Number—how many; Ability—strengths, weaknesses, capabilities; Age; Responsibilities—job description

Scheduling

Appointments for slaughter, prepared product pick up dates, transportation, offal pick up dates, certification and inspection renewals and many other aspects of operating a meat processing and retail operation require effective and efficient coordination of a variety of critical dates/times.

Willingness to Invest in a Potentially Profitable Entity

The survey conducted in conjunction with development of the feasibility study indicated 39% of respondents indicated an interest in investing (See Survey Responses in this study). Generally, there is a “wait and see” attitude on this topic, which is not at all unusual in the relatively conservative meat producer population. A detailed business plan would likely bring greater confidence along with Letters of Intent to use the new facility.

ORGANIZATIONAL ASSESSMENT¹⁰⁴

The following paragraphs describe various business structures to consider.

Sole Proprietorship

Simplest, oldest, and most common form of business ownership in which only one individual acquires all the benefits and risks of running an enterprise. In a sole-proprietorship there is no legal distinction between the assets and liabilities of a business and those of its owner. It is by far

¹⁰⁴ “Locally Produced Livestock Processing and Marketing Feasibility Assessment,” Technical Report UCED 2006/07-13: University Center for Economic Development, Department of Resource Economics, Curtis, K. R., M. Cowee, A. Acosta, W. Hu, S. Lewis, T. Harris, University of Nevada, Reno, <http://tinyurl.com/y8wnpu6>, 2007, pps. 44-55.

the most popular business structure for startups because of its ease of formation, least record keeping, minimal regulatory controls, and avoidance of double taxation.¹⁰⁵

Cooperatives¹⁰⁶

Traditional Cooperative

A cooperative is a business entity that is member-owned, meaning the business is controlled and owned by the same people who utilize its services. The owners of the cooperative finance and operate the business, striving for a mutual benefit by working together. By combining resources, the overall production costs are decreased, and the production capabilities and marketing successes are increased. Cooperatives are run similar to other business entities and usually incorporate under state laws. They require bylaws and a board of directors, who set policy and hire managers to run the day-to-day operations. In addition to the user-owned aspect, two other characteristics make a cooperative different from other business organizations: they are user-controlled, and user-benefited.

The user-controlled characteristic refers to the election of a board of directors and the ability of common stock holders and/or cooperative members to vote on major organizational issues. User-benefited characteristics include the distribution of resources based on the member's use of the organization. Cooperatives provide a direct cost savings through the purchase of bulk supplies, increases in market access, a distribution of overhead and fixed costs as well as the allocation of profits based on usage to the members.

Cooperative members may finance the start-up and operation costs of the organization through a variety of methods. One option is for members to make a direct financial contribution through a membership fee, or through the sale of common or preferred stock. Another finance method is for the cooperative to withhold a portion of the net earnings from cooperative members for reinvestment back into the organization. Finally, assessment fees can be charged based on the number of units procured from each member, or based on the number of units sold after processing. The advantage of soliciting a direct contribution or utilizing the sale of stock is the upfront cash requirements to purchase capital equipment and building services. Assessment fees and/or net earning withholdings are more beneficial once the cooperative has begun operations and require working capital or future replacement cash.

It is vital to the success of a cooperative that owners stay informed of the business practices. A cooperative is a democratically controlled organization that operates through a majority vote. Members have a monetary interest in the financial well-being of the organization and rely heavily on the education and success of the other member producers. While the pooling of resources helps reduce risk in the market place, judgments and decisions made on one farm can affect the profitability of other cooperative members.

New Generation Cooperative

The "New Generation Cooperative" (NGC) is similar in structure to traditional cooperatives, but the NGC focuses on marketing niche strategies rather than the traditional cooperative roles, such

¹⁰⁵ Sole proprietorship definition, <http://www.businessdictionary.com/definition/sole-proprietorship.html>

¹⁰⁶ The term "cooperative" is often spelled "co-operative", even within the same publication. In this section we go with "cooperative".

as production and storage. One of the main focuses of the NGC is delivery rights, which are tied directly to the initial investment required from each member. The NGC establishes a production volume, and then sells shares based on a delivery commitment from farmers, which stipulates that enough of the NGC's product is produced to fulfill the NGC's capacity requirement. One disadvantage of this system is the inability of the cooperative to encompass new producers, as the production capacity is already maximized at inception. However, delivery rights may be sold or traded to other members of the cooperative and future expansion can allow for the sale of additional delivery rights.

NGCs normally maintain a marketing agreement with the member producers, whereas traditional cooperatives do not. Because NGCs are limited to purchasing products from their members only, they require a much narrower level of quality standards than traditional cooperatives. The process of identity preserved is used to ensure that an acceptable quality product is grown by members, or it can trade lower quality member grain for the higher quality grain needed for processing.

The key advantage to NGCs is the fact that the organization can supply a large amount of its own start-up capital. NCGs can typically generate 30%-50% of their start-up capital, lowering long-term private debt commitments and freeing up future profits for larger dividend payments to farmers. Additionally, delivery rights ensure a reliable volume of product for the cooperative, while guaranteeing a home for the producer's product. It also allows the cooperative to better react to market conditions.

New generation cooperatives may choose a combination of options, but usually organizations stay within a stock or non-stock form of capital acquisition. Potential members may feel more comfortable with stock options, as it is a more commonly understood system of capitalization.

Capitalizing refers to the amount of money needed to begin operations and the mechanism for acquiring the cash. Important decisions include whether the cooperative will issue stock or non-stock options (i.e. membership dues), borrow from traditional financial institutions, and determine minimal rates of return for its members. The goal is to provide enough working capital to begin and maintain operations while sustaining manageable debt levels for the organization and making the investment affordable to prospective members.

Ownership certificates come in a variety of forms, including common stock, preferred stock, membership certificates, and capital certificates. In terms of cooperatives, common stocks are shares of the cooperative representing membership/ownership in the cooperative and are accompanied by voting rights. Common stock can be divided into classes, each carrying different voting privileges and assessed different values. Those with more privileges are more expensive to purchase. Cooperatives usually do not pay interest on common stock issued. Preferred stock is nonvoting stock that can be issued to both members and nonmembers of the cooperative. The proceeds from the purchase of preferred stocks are usually used for capital investment and. As with common stock, preferred stock can be divided into classes, each with a different value receiving different scales of interest payments. Preferred stock owners receive interest for their investment, and are usually given their interest dividends before the distribution of profits to

common stock holders. If the organization ceased to exist, preferred stock holders are compensated first.

If the members of a cooperative decide that they do not want to offer stock, membership is derived through membership certificates. Voting rights accompany membership certificates, which are issued once membership dues are paid. Usually memberships and capital certificates are insured, but are non-interest bearing. Capital certificates are similar to preferred stock, but are not issued as stock. They are sold in a variety of denominations and do not have accompanying voting rights. Interest may or may not be paid to capital certificate holders, but nonmembers may purchase the certificates.

NGCs require a marketing contract, making all members producers. In an NGC, preferred stock and/or capital certificates are generally not offered. After the cooperative has begun operation, members continue their investment by providing additional risk capital. This can be accomplished in a variety of ways. The cooperative may retain a portion of earnings as an additional investment into the organization. This can be done in two ways: through the payment or retention of a per-unit fee for each member, or through the retention on the overall cooperatives net earnings. Either way, the equity investment is credited to the members' equity accounts and held as a liability on the cooperatives balance sheet.

Cooperative Legal Considerations

The legal considerations cooperatives must consider include the drafting of articles of incorporation, creating bylaws, membership applications, creating and maintaining marketing and purchase agreements, and revolving fund certificates. While the Capper-Volstead Act of 1922 and the Farm Credit Act of 1971 have aided cooperatives in their ability to work together in the handling, processing and marketing of their goods, and allows them to borrow jointly, cooperatives are still subject to numerous antitrust laws and are responsible for all tax codes relating to their enterprise.

Articles of incorporation give the cooperative a distinct legal standing. It limits personal liability for debt incurred by the cooperative, excluding the amount of their initial investment. The articles of incorporation also describe the nature of the business entity, its location, the proposed duration of the association, and the names of the principle parties involved. Once drafted, the articles are filed with the Secretary of State, activating the cooperative.

Bylaws define how the cooperative will conduct business. The bylaws describe membership requirements and list the rights and responsibilities of the cooperative's members. They also discuss voting procedures and the board structure that will govern the cooperative.

Membership applications are composed of five main parts: the applicant's statement addressing membership; the signature of the applicant; a statement of cooperative acceptance; signatures of the board president and secretary; and a statement of the duties and intent of the prospective member. A membership certificate may be issued to each member as evidence of entitlements to the organization.

Marketing and purchasing agreements set the standard of quality acceptable to the cooperative. They also state how the proceeds of the cooperative will be distributed, once deductions for operating and capital expenditures have been taken. Often marketing and purchasing agreements are required when seeking outside financial backing. The revolving funds certificate is a written receipt for capital investments and retained earnings that will eventually be revolved or redeemed. These investments may be deductions based on a per-unit of production, reinvested earnings, or original capital subscription, if not issued in stock form. All legal documents should be written with the help of a lawyer to ensure state provisions are addressed.

Investing risk capital is the responsibility of all members. The amount of risk capital invested is an important decision for the cooperative's members to consider. It must cover a large portion of the start-up and operational costs, so that outside investors feel comfortable that the membership will work to make the operation successful. Members must also invest enough capital to give them a financial stake in the success of the enterprise.

Most private loan institutions will require the cooperative members to assume at least 50% of the capital risk, but it may take many years for the members to acquire this percentage. Long-term credit is available through federal and state sponsored credit programs. Sources of facility loans include: USDA Rural Development; Cobank; St. Paul Bank for Cooperatives; and National Cooperative Bank. Many commercial banks and credit unions have local programs for small business start-up. Cooperatives can apply for short-term loans to cover operating costs during the first year of operation. These are acquired through the Farm Credit System and the National Cooperative Bank (Rapp and Ely, 1996).

Owner Investment

Ownership options that can be exchanged between members within the cooperative are referred to as exchangeability. Redemption refers to the expectation that member ownership will be redeemed under specific conditions, such as retirement or death. Investment amounts should be determined by comparative usage requirements. Producers interested in owning more than their usage percentage can purchase additional preferred stock or capital certificates.

Cooperatives must maintain financial reserves to tie them over during periods of reduced production or environmental recession. These reserves can be earmarked for specific spending, such as debt reduction, facility improvements, or operational growth. Reserves also provide peace of mind for members, allowing the cooperative to weather hard times without the need for additional investment by members.

After reserves have been established, the cooperative needs to develop a system to repay investors their initial cash outlays. Usually a percentage of operating revenues are dedicated for the repayment of owner equity and the purchase of stock or certificates of outgoing members. This can be done in two ways: either a payment amount is determined based on the input of each member; or the resources are pooled and distributed based on the percentage share owned in the cooperative. Both systems require a delayed payment for initial livestock inputs, so that the cooperative pays for the initial livestock and repays profits after the meat has been successfully sold.

With traditional cooperatives, the initial investments are very low, often less than \$100. Ownership is offered through the issuance of capital certificates and not stock options. Traditional cooperatives are generally more restrictive than other ownership types in allowing exchanges. This is usually done through the sale of certificates between members at the board of director's discretion. Traditional cooperatives usually have an established par value for certificates that is determined at the time of buy-in. Traditional cooperatives allow new members to join at any time, so a par value must be established.

Traditional cooperatives use a set price system for profit distribution. Based on the number of certificates owned or the amount of meat produced, the cooperative will disperse profits as flat fees at the close of the business cycle.

Members in new generation cooperatives typically invest \$10,000 - \$12,000 to purchase marketing rights (Coltrain, Barton, and Boland, 2001). NGCs do not normally establish a par value, so ownership stocks are valued at market price. It is highly correlated to the expected profitability of the organization; so certificate sales are usually done through a flat fee. Since NGCs are exchangeable, redemption obligations are not required.

NGCs commonly use the pooling system. In the pooling system, a pool is opened at the start of the production period, with payments made as meat is sold. An initial payment can be arranged at delivery time, with additional progress payments made until the pool is closed and the final margins are determined. The amount of profit distribution is directly tied to the amount of meat generated by each member and is tied to the producer's contract.

For investor-owned firms, stock certificates are purchased, with the stock value based directly on the profitability of the organization, and profits are distributed through dividends. The value of a stock certificate is based on the future anticipated profitability of the enterprise. Stock sales and exchanges can occur through an open market, and non-producers can buy-in to the cooperative.

C Corporation

The C corporation is the traditional form of corporation, which is a business entity that provides limited liability to its owners and shareholders, meaning the personal assets of the owners and shareholders are protected from the financial issues of the corporation (Legalzoom.com, 2006). Unlike a sole proprietorship or partnership, a corporation exists as a separate legal entity, and therefore is taxed separately from its directors and shareholders. When a C corporation goes public, it may have an unlimited number of shareholders (who are the legal owners of the corporation), who do not have to be residents or citizens of the United States.

The C corporation is managed by a board of directors elected by the corporation's shareholders and makes policy decisions on the corporation's behalf, while the officers and employees of the corporation conduct the business dealings of the entity. As mentioned, the directors, employees, and shareholders of the corporation are not personally liable for the corporation's debts. However, it is the responsibility of the directors and officers to ensure that certain formalities are observed on the corporation's behalf. This includes formalities such as annual meetings, appointment of officers and election of directors, and issuance of stock. Perhaps the largest responsibility of the corporation is to maintain enough capital to protect the corporation from any

business debts. In the event that these formalities are not observed, shareholders may be held personally liable for corporate debts.

S Corporation

S corporations are C corporations that have elected to file for S corporation tax status. Filing as an S corporation combines the limited liability of the C corporation with the tax status of the sole proprietorship or partnership. The main difference between C corporations and S corporations (and also the major advantage to S corporations) is the tax treatment. While C corporations are subject to double taxation, S corporations are granted "pass through" taxation because all of the corporation's profits are passed on to the shareholders in the form of dividends, so there is no taxation at the corporate level. Another advantage to the S corporation is that the corporation's directors may pass business losses through to their personal income tax return. The biggest disadvantage of the S corporation is the restrictions that are placed on shareholders: an S corporation may not have more than 100 shareholders, who must be citizens or residents of the United States.

Limited Liability Company

As the name implies, a limited liability company (LLC) is a business ownership structure that provides limited liability to its owners, called members. The main differences between the LLC and the corporate structure are that the LLC is more flexible and less formal than the corporation, and the two entities are subject to different tax laws. An LLC can also serve as the general partner in a limited partnership, giving the individual owners protection from liability, financial or otherwise.

Some of the advantages of the LLC are the operating flexibility they provide, including the fact that a board of directors is not required as with corporations, and there is currently no requirement in Nevada for an annual meeting of the shareholders. As with S corporations, LLCs are also free from double taxation because the LLC members report their share of profits or losses on their personal income taxes. The LLC is not taxed at the business entity level. The final advantage to the LLC is the limited liability the entity provides to its members. Disadvantages of the LLC are that they do not require an operating agreement, the lack of which may lead to management issues, and the fact that while the LLC isn't subject to double taxation, it may be taxed at a higher rate than a corporation.

FUNDING/FINANCING OPTIONS:

Financial Capital Structure and Availability¹⁰⁷

Given the relatively high project cost, it is highly likely that multiple sources of capital will be needed to fund the facility and marketing activities. Reliable cost estimates for land, plant construction, equipment and operations are essential for determining the amounts of investment capital and working capital needed. As discussed in another section of this report regarding regional economic impacts, the facility likely qualifies as an economic development project. It has significant social capital features (humane and environmentally friendly slaughter, pollution controls, environmentally sound waste emissions and natural resource utilization practices and

¹⁰⁷ Meat Processing Feasibility Study, Economic Development & Financing Corporation, <http://ucanr.org/blogs/LivestockRangeTopics/blogfiles/3109.pdf>, March 2009

employee-friendly management philosophies) that should make it attractive to private social capital funds, as well as government grant programs. As discussed below, both private and public funding sources should be considered for this project. Sources and examples follow.

Private Funding Sources

Private funding sources include banks, venture capital funds, investment from ranchers and preferred stock.

Banks

Numerous banks provide loans for food processing facilities. Since the proposed project is associated with a new entity, specialized banks are likely to be more receptive. This includes regional banks.

Shorebank¹⁰⁸ differentiates itself as a lender with strong environmental values. It strives to meet three objectives simultaneously: building wealth for all in economically integrated communities, promoting environmental health and operating profitably. Other lenders with similar objectives include RSF Social Finance and Washington, DC-based NCB. RSF is based in San Francisco; it provides medium- and long-term asset-backed loans at variable or fixed rates, typically ranging from \$200,000 to \$5 million.

While the Farm Credit System's Cobank is focused on agricultural cooperatives as its primary clientele, it also lends to other agribusinesses. Headquartered in Denver with an office in Sacramento, it is cooperatively-owned.

Venture Capital

As noted above, several of this project's features could qualify it for partial or complete funding through social venture capital programs. In particular, Investors' Circle¹⁰⁹ is a network of over 200 angel investors, professional venture capitalists, foundations and others using private capital to promote the transition to a sustainable economy. It is striving to steer meaningful quantities of investment capital and sustainable capital to build local food systems, enabling "...the financial and cultural transformation toward rebuilding social and environmental relationships that industrialization has destroyed" (Weiss, 2008). The founder of Investors' Circle, Woody Tasch, noted that Investors' Circle is developing small food enterprises as a new asset class, and specifically mentioned local meat processing facilities. He expected highly diversified portfolios of small food enterprises to generate modest but predictable long-term returns that will look increasingly attractive in the years to come.

Rancher Investment

The individual ranchers who utilize the facility, both as suppliers of livestock and as users of the facility's custom slaughter and processing services, should be considered as potential sources of capital for the facility. However, this option may be limited given the elderly profile and limited gross farm incomes of most of the ranchers. Traditionally, agricultural producers have invested in processing facilities by being members of an agricultural cooperative. The Facility could be owned partially or completely by an agricultural cooperative; that is, the ranchers who used the

¹⁰⁸ <http://en.wikipedia.org/wiki/ShoreBank>

¹⁰⁹ <http://www.investorscircle.net/>

Facility would be members of the cooperative. As members, they would be required to provide the cooperative's equity capital; this is the member-financed feature of a cooperative. Alternatively, the ranchers could form a limited liability corporation (LLC), which is a specialized form of a partnership. Typically, a producer-owned LLC has less rigid structural features and offer greater liquidity than a cooperative; in particular, the owners' capital investment in an LLC does not need to be proportionate their use of the facility.

Given the significant amount of equity capital needed to fund this facility, it is likely that the producer cooperative or LLC could be an equity partner in the facility with venture capitalists or other investors. With such a shared ownership structure, the cooperative would have less governance power, as well as less financial commitment, than if it were the sole owner of the facility.

Mountain States Lamb and Wool (MSL&W) is an example of the flexibility provided by the LLC structure over the traditional cooperative structure. Mountain States Lamb Cooperative was organized in 1999 as a traditional, producer-owned cooperative by sheep ranchers and feeders in several Western States to develop lamb and sheep products and markets for those products. MSL&W was formed in 2001 after the state of Wyoming adopted the "Wyoming Processing Cooperative Statute" which allows individuals who are not ranchers to be investors in a cooperative. MSL&W was organized as a separate entity by Mountain States Lamb Cooperative, which is its sole member. A total of 450,000 shares of Class A stock were sold to ranchers at \$22 per share, generating \$9.9 million in equity capital. These shares entitle and obligate the share owner to deliver one lamb to the co-op for every share owned. They can be bought and sold among members as ranchers' livestock delivery volumes change. The share value changes with market conditions and the cooperative's financial performance. Class B shares were also sold; they have a guaranteed return of 8% but do not have voting privileges or lamb delivery obligations. Approximately 75% of Class B shareholders also own Class A shares and about 80% of the equity in MSL&W is held by Class A members.

In March, 2003, MSL&W created a joint venture, Mountain States Rosen (an LLC) by buying a 50% interest in B. Rosen & Sons, a leading supplier to processed lamb meats and products which markets much of its product under the Cedar Springs brand. Lambs are slaughtered at a Swift facility in Greeley, Colorado and processed at Rosen processing and distribution facilities in Greeley and New York. Most MSL&W carcasses are marketed on the West Coast and members share in the profits of Mountain State Rosen's eastern operations.

Rancher-members of Oregon Country Beef (operating under the name Country Natural Beef) have relatively little equity capital invested in their cooperative. Instead, most of their capital is invested in the production costs they incur while raising their animals. The cattle are fed only a vegetarian diet and raised with no antibiotics or hormones. Oregon Country Beef does not own any feedlots or processing facilities; instead, it contracts for these services. Currently, the members' cattle are finished at the Beef Northwest Feeders feedlot in Boardman, Oregon and slaughtered and processed at AB Foods (operating as Washington Beef) in Toppenish, Washington. The cooperative's primary purpose is to enhance returns to members by controlling the production, processing and marketing of each animal from birth to the retailer cooler. Many of the members are actively engaged in promoting the Country Natural Beef brand; they are

frequently seen talking to consumers at grocery stores throughout the West Coast (known fondly by members as “marketing blitzes”). Oregon Country Beef is committed to long-term relationships with its affiliated feedlot company, slaughter and processing company and retail and foodservice customers. Its customers have agreed to adjust the prices they pay for Oregon Natural Beef as cattle production and processing costs change, because they support the values embraced by the rancher-members. This type of relationship is known as a “values-based supply chain”. More information about values-based supply chains is available at the web site organized by agricultural researchers across the nation.¹¹⁰

Preferred Stock

Preferred stock is also a potential source of equity capital for this project. The dairy marketing cooperative, CROPP, which operates as Organic Valley, is using a unique form of relationship financing to capitalize its growth. It began selling Class E, Series 1 preferred stock in May of 2004. Almost \$16 million of stock has been sold in 23 states and the District of Columbia. Organic Valley markets its products extensively through consumer cooperatives, many of which have purchased the stock along with their individual consumer members. The minimum purchase of the non-voting stock is cooperative, Organic Valley is exempt from securities registration requirements. Organic Valley’s CEO noted that the preferred stock offers shareholders steady long-term financial value and social/environmental returns without forecasting big year-over-year growth.

Loans and Grants

USDA Rural Development Business and Industry Loan Guarantee Program

Loan Guarantees can enable firms to obtain loans that they would otherwise not be able to secure. The 2008 Farm Bill provided for loan guarantees for businesses involved in local and regional food distribution, processing, aggregation, and marketing. These guarantees are designed to secure private bank loans of up to \$5 million to receive an 80% guarantee. The maximum loan value is \$25 million, and up to \$40 million for cooperatively-organized entities of agricultural ranchers. The average loan value being guaranteed by this program is for \$2 million. The projects must be located in rural areas, but there are criteria which can allow producer-owned cooperative entities and other urban-located cooperatives to be eligible. The “rural” definition includes communities of “rural character.”

This program can guarantee up to 80 percent of a bank loan, depending on the loan purpose. A USDA Rural Development feasibility study may be required. General guidelines as to whether a feasibility study is needed include:

- Required for a start-up business.
- Required for a renewable energy project.
- Required for an existing business that lacks a profitable history (or when past performance does not support the new debt service).
- Required for an existing business that will develop an independent operation in a new location.

¹¹⁰ <http://www.agofthemiddle.org/>

USDA will look at each project on a case-by-case basis and make the determination about the feasibility study during the pre-application process.

USDA's Rural Business Enterprise Grants Program (RBEG)

Infrastructure costs could potentially be funded using the RBEG program. Examples of eligible uses for the RBEG program include: Acquisition or development of land, easements, or rights of way; construction, conversion, renovation, of buildings, plants, machinery, equipment, access streets and roads, parking areas, utilities; pollution control and abatement; capitalization of revolving loan funds including funds that will make loans for startups and working capital.

USDA's Value Added Producer Grants Program (VAPG)

A portion of the planning activities and operating capital for the Facility could be funded through USDA's Value Added Producer Grants Program, which issues a call for proposals once a year. Eligible projects include those for marketing value added agricultural products. Eligible applicants are independent producers, farmer and rancher cooperatives, agricultural producer groups, and majority controlled producer based business ventures.

Industrial Development Bonds

Industrial development bonds (IDBs) can be issued to provide up to \$10 million in financing for processing plants; up to 25% of the bond proceeds may be used for land acquisition. The bond maturity cannot exceed 40 years. Benefits of IDBs include interest rates considerably below standard commercial lending rates, and long term loans with no balloon or prepayment penalty. Criteria for the issuance of IDBs include public benefits associated with job creation or retention, community economic need and average hourly wage paid to workers; the state is currently considering a proposal to include environmental stewardship criteria. The interest received by bondholders is exempt from both state and federal income taxation. In 2008, California's Industrial Development Financing Advisory Commission approved the issuance of IDBs totaling \$118.3 million for 18 projects.

Community Development Block Grants

Depending on where this project is located, a portion of its development costs could potentially be covered by Community Development Block Grant (CDBG) funds from the Federal government. The CDBG program allows a city or county to issue grants to local organizations for the implementation of eligible CDBG activities including construction or improvement of public facilities and infrastructure such as streets, sidewalks, sewers and storm drainage, economic development, revitalization efforts, and other activities that benefit low and moderate-income individuals and areas.

Tax Abatement

Counties and towns can agree to abate taxes for a new or expanding business. This, too, is entirely at the discretion of the local council members or county supervisors. It generally helps to have good projections about your business' economic impact and good standing in the community. The bottom line is: if you don't ask, you won't get anything. Likely a very low probability of this approach being successful in today's anti-tax environment.

The Rural Economic Development Loan and Grant (“Red Leg”)

This program has considerable history of use by small meat lockers. A significant number of lockers have been built or renovated over the years with these funds. The program is in essence a zero percent interest loan for 10 years, but the loan can only be accessed through a local rural electrical or telephone cooperative. Through a lien on its own assets, the co-op applies to borrow money from the federal government for the sub-applicant business. If successful in its application, the co-op passes the money on to the sub-applicant business. The maximum loan amount is presently \$750,000. Successful applicants typically only finance between 5 and 17 percent of a project with this type of loan and never more than 50 percent. Applications from businesses in communities of fewer than 2,500 people are more favorably considered. The co-op can charge up to 1 percent per year to finance its own administrative costs. Payment on principal may be deferred for up to a year for an existing business and up to two years for a new business.

Farm Bill Energy Efficiency Loan and Grant Program (“Section 9007”)

This program will work only for existing plants. You must have an existing facility or equipment that you are making more energy efficient in order to qualify for a grant, and grants will only cover up to 25 percent of the cost of the eligible portions of renovation. For renovations over \$200,000, a feasibility study is required and detailed business financial need must be demonstrated. It appears that \$50,000 is a realistic grant cap for this program.

Here’s a tip on how the Section 9007 program works: Grant monies can only be spent once but loan guarantee funds can be used over and over again. So, Congress encourages the USDA to push the loan guarantee portion of the program. If a company applies for only a grant, the application is held and judged once annually at the national level with all of the other applications. But if a company applies for a grant and a loan guarantee, the decision to allocate funds can be made at the local level, and in a rapid manner to assure that the loan guarantee funds are used. A company is virtually assured a grant if all of their paperwork is in order and if funds are available when they apply for both a grant and a loan guarantee.

Every application will need a professional energy audit. Contact your local electrical service provider to see if they can either perform such an audit or recommend someone else in your area.

The Small Business Administration’s (SBA) Certified Development Corporation (“504”) Loan Program

Commonly referred to as “504 Loans,” this program basically provides partially-subsidized and guaranteed loans where your local lender covers up to 50 percent of the project costs, the SBA covers up to 40 percent, and you must put in at least 10 percent. The local bank is put in a senior collateral position, which means that if you default on the loan, they collect on collateral up to the amount you owe them before the SBA. The SBA portion of the loan is usually below market rate, and the local bank is generally happy to be in a senior collateral position with only 50 percent of the investment. The loan can be amortized over 10 or 20 years, but the fees associated with the loan that equal 3 percent of the SBA portion are a drawback. Three percent of \$500,000 is \$15,000. While this amount is probably not a deal breaker, it is something worth weighing before enrolling in the program. If the offset on SBA interest vs. the market rate is significant, then it works out well. This reiterates the need for plant owner-operators to develop a firm

understanding of their financials. To access this loan program, you will need to work with your lender and an SBDC.

Other Loan Guarantee Programs

While a guarantee may be necessary under certain circumstances and can sometimes foster better loan terms (related to repayment period or interest rate) depending on the bank, often they have upfront costs of a 1 to 3.5 percent of the portion guaranteed and have annual fees ranging from 1/8th to 1/4th of a percent on the remaining loan balance. The guarantees may also come with high administrative costs due to extensive reporting requirements. In short, these guarantees can have varying cost-to-benefit ratios and should be thoroughly scrutinized based on your particular circumstances. Make sure to ask for a full breakdown of all associated initial and annual fees.

SBA Loan Guarantee program (“7(a) loans”)

You will have to work through your bank to apply for this type of guarantee. Up to 85 percent of loans of \$150,000 and less, and up to 75 percent of loans above \$150,000 can be guaranteed for up to 25 years.

Other Potential Public Funding

California could follow Iowa’s lead and establish a program similar to Value-Added Agricultural Products and Processes Financial Assistance Program (VAAPFAP), which Iowa created in 1994. Iowa’s current economic development program, Iowa Values Fund, has a \$35 million annual allocation, part of which is used to fund VAAPFAP (Iowa Department of Economic Development, 2008). No project can receive more than 25% of the program’s annual allocation; private matching funds are required. One of the VAAPFAP’s categories is “Organic Processing and Emerging Markets.”

Iowa’s West Liberty Foods is an excellent example of public-private ownership. When Oscar Mayer announced that it was closing its processing plant in West Liberty, Iowa at the end of 1996, turkey growers recognized the need to retain a market for their turkeys and organized themselves as a cooperative. In less than a year, financing totaling \$16.2 million was raised, divided among more than 16 million shares held by 45 individuals representing 47 enterprises. The financing package included:

- \$2.4 million in cash equity provided by the cooperative’s members
- \$900,000 grant and loan package from Iowa’s Department of Economic Development (IDED) through its VAPPFAP program
- \$875,000 in forgivable loans from Iowa’s Dept. of Economic Development’s Economic Set-Aside Program (using the city of West Liberty and Muscatine County as sponsors)
- \$50,000 low interest loan from Iowa Corn Promotion Board
- \$50,000 loan from Muscatine County
- \$75,000 loan from the city of West Liberty
- \$1.25 million loan from the Iowa Farm Bureau Federation
- \$15,000 grant from the Iowa Turkey Federation
- \$8.0 million loan from Norwest Agricultural Credit. USDA-Rural Development guaranteed 70% of an additional \$7.0 million loan from Norwest.

West Liberty Foods endured three recapitalizations during its early years of operation. Originally, members were required to contribute \$1 in equity for each bird they processed. A liquidity crisis caused the cooperative to require an additional \$1 equity for each bird processed, followed by an additional \$1 per bird assessment in the following year. Currently, the unit delivery price paid to members is specified in advance and the cooperative no longer shares the input costs. West Liberty Foods owns and operates three processed meat plants in Iowa and opened a \$70 million facility in Utah in 2007 (West Liberty Foods, 2008). The company specializes in slicing and co-packing cooked red meat and poultry products, and processed 217.5 million live pounds in 2008.

The Five C's of Credit

Since most meat processors are too small to attract venture capital or take advantage of state tax-exempt bond issues, banks may be the best option (grants and grant/loan packages may be an option). That said, the loan terms from one bank to the next can vary widely, even in the same town. Not only are you looking for good terms, you are also looking for a lender with experience in working with small businesses rather than consumer loans. They have a better understanding of risk and other resources that may be available to you. Also, while shopping around, you will receive a free business review from every banker you visit.

No pot of gold is waiting. The likelihood is high that you probably have to work with a local bank to finance any new plant. Many bankers look for what are often called “The Five Cs of Credit”:

1. Cash Flow
2. Character (of the people running the business, evidenced by personal demeanor and past business/occupational history)
3. Collateral—What is the value of the property should you default on the loan?
4. Capital—How much of your own money are you investing?
5. Credit History

REGIONAL ECONOMIC IMPACT OF PROPOSED FACILITY

The region is defined by the borders of Del Norte County with perhaps some impact to north Humboldt. Coastal Oregon (Curry, Coos and western Douglas counties) may be impacted with consideration for the additional costs that may accrue due to transporting animals from Oregon into California.

The impact of the project begins with the construction of the fixed facilities and/or the acquisition of the MSU.

It is highly likely that most of the specialized equipment required will be manufactured outside of the region. Similarly, much of the architectural and engineering services likely will also be procured from outside of the region. The elements that are most likely to be sourced within the region are site work and portions of the building construction expenses—particularly the labor and the process support utilities.

Depending on the alternative selected and the many parameters involved with each, economic impact will vary. The estimated direct economic impact of the facility construction activities will be 30 to 40% of the overall project investment. Most of the project's economic impact will occur because of the facility's ongoing operations, rather than the onetime construction activities.

SUMMARY AND RECCOMENDATIONS

A feasibility study provides an objective third-party analysis of the viability of the business idea and focuses on answering the essential question, "*Should we proceed with the proposed project idea?*" The activities of this study are directed toward answering this all-important question.

Response to the 7 areas posed for evaluation

In this Feasibility Study you will find a response to the 7 areas posed for evaluation in the Request for Proposal issued by the Del Norte Resource Conservation District on April 26, 2010. We address those topics and provide a thorough, well-researched analysis and synthesis that substantially goes beyond the original Scope of Work. As such, it includes a comprehensive set of guidelines and background materials as a reference to help guide the implementation efforts.

1. *Determine if a meat slaughtering, processing, packaging and market retail facility is feasible in Del Norte County, California.*

Animal slaughter, meat processing and packaging could be successful in Del Norte County. It is a marginally viable, high risk business opportunity that will require extensive community commitment, funding and additional detailed planning (i.e., development of a detailed business plan and commitments from area producers, consumers, distributors and investors). Three significant challenges are faced: county animal inventories, financing and product distribution.

This is a business system that goes beyond slaughter and processing. Transactions flow from the field to the consumer, and all aspects must be in balance to succeed. There is also a gauntlet, some say a maze, of regulatory matters to be addressed: federal, state and local.

The retail sales component, while interesting and worth further evaluation over time, has a very low potential for initial success, especially in the first few years of meat plant operation. Likely it would serve as a distraction and a losing proposition. Yet this could be an add-on business as experience is gained operating the slaughter and meat products production business components. There is a lot to learn and absorb here.

Many of the elements of a business plan are included with this study's results but substantially more needs to be done to get to the level of detail required to step into the chosen alternative.

Quite literally there are hundreds upon hundreds of variables to consider. This study provides 4 alternatives for consideration (see following matrix). Each has its own merits, ranging from higher risk to lower risk.

Financial pro formas were generated for only one set of variables for each alternative. Small changes in inputs can result in quite a variation in results. An integrated Excel workbook tool is included to provide opportunity to run additional variables to model differing scenarios.

Alternatives 1-3: These are a federally certified approach (USDA Food Safety and Inspection Service—FSIS) and have a much higher risk of success. But with hard work, collaboration and community support it could be viable. This set of alternatives would provide a large array of sales/distribution alternatives. This is an instance where *hard is good*.

Alternatives 4: Custom slaughter and processing is highly feasible and a relatively low risk, but it is not federally certified. Sales of product are restricted to producer to consumer.

Alternatives 3 and 4 require a facility to hang and process the meat.

Economic impact comes in part from construction, although it's likely that most of the equipment will be sourced outside the county. Several jobs will directly emerge to work in the processing. Dollars currently leaving the county for processing will remain in the county.

Estimates in the following table are derived from a variety of sources reporting on actual processing facilities. Pro formas driving these financial results are in the Appendix.

	<i>Higher</i>	<i>RISK</i>		<i>Lower</i>
	<i>Alternative 1: Large Plant*** 5,250 sq. ft</i>	<i>Alternative 2: Small Plant*** 2,600 sq. ft.</i>	<i>Alternative 3: MSU, 34' long, ~300 sq. ft.</i>	<i>Alternative 4: Custom Slaughter, Cut & Wrap</i>
Pre-chill Cooler size*	10 Beef	7 Beef	20 beef	Requires additional facility
Holding Cooler Size*	20 Beef	13 Beef	Requires additional facility	Requires additional facility
Slaughter days per year	300	300	150****	150****
Slaughter capacity	20 beef/day = 6,000/year	7 beef/day = 2,100/year	10 beef/day = 1,500/year	2 beef/day = 300/year
Additional Facility for MSU or Custom (coolers, freezers, cut and wrap)	Included	Included	\$150,000 (1,500 sq. ft.)	\$150,000 (1,500 sq. ft.)
Number of Employees	6–10	3–4	3-4	2
Trailer (animal hauling)	\$60,000	\$60,000	N/A	N/A
Truck (used for trailer or MSU)	\$18,000	\$18,000	\$18,000	N/A
Pick-up (3/4 ton, used) with hoist and cover	N/A	N/A	N/A	\$15,000
Processing Facility Investments	\$525,000– 2,100,000**	\$260,000– 1,040,000**	MSU @ \$170,000**	N/A
Total Processing Facilities Cost	\$603,000– 2,178,000	\$338,000– 1,118,000	\$488,000	\$130,000
Land acreage*****	2 acres	2 acres	1 acre	1 acre
Land cost (assumes \$40,000/acre)	\$80,000	\$80,000	\$40,000	\$40,000
Total Overall Estimated Investment	\$683,000- 2,258,000	\$418,000- 1,198,000	\$343,000	\$170,000
Payback Period (using assumptions in pro formas)	~2 ½ years	~2/1/4 years	2 ½ years	~3 years

Notes:

- * Cooler space for one beef will provide space for 1.5 to 2 hogs, sheep or goats.
- ** Fixed facility price per sq. ft. = ~\$100-400, depending on materials used, without land acquisition costs. Based on estimated costs used in studies by USDA, Iowa State University and the Mendocino County/Ukiah feasibility study.
- *** For both designs, the left-hand side of the plant could be extended to make more room that could be utilized for anything that would be needed, except slaughter. Both designs include a retail sales space.
- **** 2 slaughter days per week in field, 2 processing days, requires return from field to unload and re-stock MSU.
- ***** Adequate water supply and septic must be included. Includes space for retail and equipment parking, turn-around for truck/trailer/MSU, space for animal offloading and holding, etc.

Water Use and Output: 150-200 gallons per beef equivalent, average. One beef equivalent = 2 hogs, 2sheep or 2goats

1 acre = 43,560 sq. ft.

2. *Provide marketing recommendations for a successful venture, including researching the feasibility of grass fed beef produced locally marketed with a “natural beef label”. These options could include joining an existing national organization with a natural beef label, joining an existing regional organization with a natural beef label or creating a new natural beef label. Specific feasibility needs to be determined for the various levels of production including:*
 - g) *Management requirements of beef to meet “natural label” standards, including pasture feed mix, vaccines, antibiotic use and restrictions, age, weight, sex, cattle breeds, timing for sale, minimum number of cattle, etc.*

The USDA definition of natural beef describes meat products that have been minimally processed and contains no additives, artificial flavors, colors or preservatives. This definition does not mention production techniques for natural meat, which can be confusing or even misleading to consumers. Unofficially, natural meat has been defined by ranchers and marketers as livestock raised without the use of antibiotics, growth hormones, and implants (i.e., “never-ever”).

The USDA label for grass-fed meat says the following: grass, green, or range pasture, or forage shall be 80% or more of the primary energy source throughout the animal’s life cycle. This means that on a daily basis producers can feed animals up to 20% from other sources, or wait till the finishing stage and feed animals entirely on other sources, as long as no more than 20% of the animal’s feed during its entire lifetime comes from these alternate sources. In 2006, the USDA-AMS solicited comments on a revised standard which defines grass (forage) fed as: Grass (annual and perennial), forbs (legumes, brassicas), browse,

forage, or stockpiled forages, and post-harvest crop residue without separated grain shall be at least 99% of the energy source for the lifetime of the ruminant specie, with the exception of milk consumer prior to weaning.

Organic meat is subject to an even more restricted regimen, including use of certified organic cleaning materials at the processing location. This is even more of niche market than natural or grass fed meat products.

Animal age is not as often referred to as is weight: beef 1200-1400 lbs. Age is a determining factor for offal disposal. Cattle over 30 months must have brains and spinal cords disposed of separately, most often in a landfill.

Steers are the most common beef meat animal. Little mention is made of breed, although there are champions for each and every one of them.

Year-round availability of animals is desired highly. This provides for a steady stream of animals to be processed, keeps employees engaged and provides for a much higher reliability for obtaining an FSIS inspector. Irregular production schedules can be quite problematic for scheduling an FSIS inspector and retaining employees.

Small scale facilities generally require on order of 1,000 to 1,600 beef (or beef equivalents) per year to achieve sustainability. Federal beef inventories for Del Norte County indicate approximately 1,000 cattle are targeted for beef production in a year.

h) Transport requirements

The survey results indicated a low interest in the meat processing entity providing transportation.

<i>Response</i>	<i>Percent</i>
Yes	35.7
No	64.3

Many of the producers have some form of transport available to them. At the Fortuna Auction yard there were examples of folks bringing their animals to the yard in their own equipment, by using someone else's or in paying someone to haul the animals. Some producers ship their animals long distances for processing.

As such, alternatives 1 and 2 do not include a transport function as part of the business modeling. Alternative 3 (MSU) does on the premises slaughter and then transports the carcasses to another location for final preparation.

For the Custom operation (alternative 4), this is solved by slaughter at the producer's location and then transporting the carcasses by the custom slaughterer to another location for hanging and then preparation.

i) *Processing requirements*

The 4 alternatives position differing levels of product capacity, ranging from 20 beef (or beef equivalents) per day to 2 per every other day.

j) *Marketing requirements*

A number of marketing issues, challenges and opportunities need to be addressed. Resources are available to help out.

Consumer Education—Additional and continued consumer education will be vitally important in securing a premium for products in this growing niche market. Clarification of terms—natural versus grass-fed versus organic—and a better understanding of the unique and exceptional healthy benefits of a premium grass-fed beef product are the two areas in which consumers most need further edification.

Consolidation of Producers and Processors—Major chains—Wal-Mart and Safeway for instance—are offering more “natural” meat products alongside the more traditional avenue—Natural Food Stores. Continued refinement of animal and meat quality could help sustain prices so the Del Norte product can continue to differentiate itself from less consistent and flavorful “natural” products.

Inherent Product Attributes Raise Concerns with Some Buyers—“Natural” meats have distinct characteristics that may be an issue for meat market managers and buyers—more so than for consumers. Again education will be very important to dispel these concerns.

Product Packaging—Sales of “natural” meats can suffer due to poor packaging or environmentally insensitive packaging. Given that premiums will be charged for this product, attractive package that makes the product look fresh and safe will be very important. Further, packaging should be kept to a minimum and be made from environmentally fit materials to align with the other inherent values motivating the consumer to buy this product.

Branding—Branding is all about perception. Branding is all about creating singular distinction, strategic awareness and differentiation in the mind of the target market—not just awareness. When you have been successful, you will start building equity for your brand. A brand is nearly worthless unless it enjoys some equity in the marketplace. Without brand equity, you simply have a commodity product.

Some potentially viable approaches include:

- Del Norte County Brand Certification/Labeling Programs
- Niche Marketing/Branding
- Develop a Brand Certification/Labeling Program
- Natural and Grass-Fed Beef Branding Programs

Promotion—An effective promotion strategy will reach target customers through several types of media. These may include the following:

- Print Media: Residential mailers and brochures
- Electronic Media: Websites and Internet advertising
- Published Media: Newspapers, magazines, and coupons
- Broadcast Media: Television and radio

k) *Administrative requirements*

Federally inspected meat production presents near daunting regulatory requirements. Even a custom slaughter, cut and wrap operation requires great attention to detail in recordkeeping. Keeping track of all of these regulatory requirements, permits, inspections and related matters requires great attention to detail and will take up time to do so. Failure here is not an option and can result in loss of certifications, and consequentially the business.

Additionally, there are the myriad other details that have to be managed: scheduling, training, sales (probably more to distributors but potentially to more local entities).

The financial pro formas build in time to attend to these details. In the first year of operation this is partly why only a half-time operation is positioned. There is a need to learn as you go so as to remain compliant with regulatory matters and to operate the business.

l) *Capital investment requirements*

(See previous alternatives matrix)

3. *Locate available sites, complete preliminary design and develop cost estimates for the construction of a processing and retail facility. This task will include a discussion of alternative facility designs, such as mobile slaughtering vs. fixed site, as well as a thorough explanation of all health and safety requirements.*

This study does not select a particular site but presents criteria to aid in the selection (see “General Plant Design Considerations for Fixed Facilities or MSU’s” for a detailed check list). A number of critical decisions need to occur to further guide the site selection (e.g., which of the alternatives is to be pursued?). A specific location based on all of the criteria would be included in a detailed business plan. Each of the

alternatives has its own set of requirements. What we can do at this time is bracket land costs and provide other guiding advice.

Searching the Multiple Listing Service (MLS) for Del Norte County for properties up to \$1,000,000 zoned agricultural or commercial/industrial revealed surprisingly few offerings. At least an acre is recommended with 2 acres preferred to give more than adequate space for trucks and parking. Perhaps there is someone out there already holding suitable land willing to consider development on their holdings.

With all that needs to be done to determine which of the alternatives to pursue, it could be at least a year before an appropriate site can be identified. None of the MLS entries looked to be suitable to house a co-located retail site.

4. *Evaluate organizational possibilities for the facility, including, but not limited to, traditional cooperative, new generation cooperative, cooperative legal considerations, C Corporation, S Corporation, and a limited liability company.*

A new generation cooperative appears to have the best chance of success. Cooperatives are a good way to spread risk and to raise capital from cooperative owners. The “New Generation Cooperative” (NGC) is similar in structure to traditional cooperatives, but the NGC focuses on marketing niche strategies rather than the traditional cooperative roles, such as production and storage. Producers would continue to own, raise and transport animals.

Slaughter and processing could be a separate traditional cooperative. Or, after additional consideration it could also be owned under the NGC concept.

5. *Evaluate and explain Business Plan Financials, including but not limited to, start-up costs, operating costs, revenue projections, first year financial statement, and five-year financial forecast. Determine how many jobs will be supported by a processing and retail facility enterprise.*

Please refer to the previous alternatives matrix as well as the discussion in the body and pro formas in the appendices. One quickly comes to an understanding of the overall complexity and risk levels associated with any one of the offered alternatives. Even a small change in any one of the financial inputs or regulatory steps can result in variances in the outcomes.

6. *Provide project alternatives, including but not limited to, sale of prepared meats, incorporating other local agricultural products, incorporating the weekly farmer’s market, and including products from Oregon.*

Plausible Markets for “Natural” Meats

Local—“Local” is a term that varies in definition. The USDA uses 400 miles as the defining radius. This sounds more “regional” in nature and would then include areas such as the Humboldt County, San Francisco Bay area Sacramento,

Yreka, Rogue Valley, Roseburg and perhaps even up to Eugene, OR. The Del Norte economic profile suggests strongly that the product distribution must go well beyond the county to be successful.

Del Norte County provides too small a market to allow for much expansion of local “natural” meat sales. Also, because income levels in the county are below the state average, a premium “natural” meat product will find fewer shoppers per capita willing or able to pay the additional price. With producers already selling into much of what market does exist (i.e., direct sales from producer to consumer or farmer’s market), there is little room for growth within the Del Norte County market.

Regional—Northern California including the greater Bay Area is proving to be the most promising market territory, and by the USDA definition is “local”. The demand, the consumer values and the ability to support a premium product produced in this area. Access to the market is also an advantage. All indications are that this territory should be the focus for Del Norte “natural” meat products.

National—Access to this broader market may only be viable via Internet and mail order sales. Target marketing campaigns will enable finding Internet buyers to be willing to pay a premium for a quality organic meat product and the added convenience of shopping online.

International—The opportunity exists for potential sales to Asia, but would likely require additional “dry-aging” and/or other product enhancements to distinguish the product within a foreign market and to warrant pricing that would cover the additional costs of marketing and shipping overseas.

Sales Opportunities and Outlets

A number of sales opportunities and outlets are viable. In the early start-up years one of the least viable is a local retail outlet, having nothing to do with the quality of the product but rather do to the economic realities of the county. The recommendation here is for adding this business component as operating experience is gained.

Other potential sales outlets include:

- Direct Sales to Consumers
- Farmers’ Markets
- Community Supported Agriculture
- Farm to School
- Food co-operatives
- Retail: Grocery Stores and Natural Food Stores
- Supermarkets
- Restaurants
- Institutional Food Service
- Prisons
- Internet and Mail-Order Sales

- Specialty Stores
- Retail Sales Outlet
- Virtual Farmer’s Market—Website

7. *Research and recommend sources for project implementation funding.*

Since most meat processors are too small to attract venture capital, private financing and banks may be the best option (grants and grant/loan packages also may be an option). No pot of gold is waiting. The likelihood is high that we probably have to work with a local bank to finance any new plant. A best case scenario would be to have local interests fund the investment.

Given the project capital and start-up costs, it is highly likely that multiple sources of capital will be needed to fund the facility and marketing activities. Some potential sources are:

- Private Funding Sources
- Banks
- Venture Capital
- Rancher Investment
- Preferred Stock
- Loans and Grants

Recommendations

As you read through the contents of this study, you will quickly see the complexity of the challenges to be addressed. It’s not impossible but will require detailed attention to myriad details to achieve success. What is faced is the building of a business system that reaches from field to plate with all of the steps that must be successfully integrated along the way. Failure in any one of the steps will result in disappointment.

The custom slaughter with cut and wrap (alternative 4) would be the quickest to get up and running, would meet an immediate need and provide a basis for expansion into a full FSIS certified operation. This alternative’s payback and profitability could be improved over the modeling done in this study by pursuing less expensive options (e.g., reducing the size of the facility or use of freezer boxes purchased at an appliance store.).

Here is an outline of proposed steps for moving ahead. Time from decision to go forward to being ready to start building varies by the alternative chosen, but a year should be enough time to get all this done.

I. Establish project ownership.

Form a small team of interested parties with leadership from a partnership of the Resource Conservation District and the Tri-Agency Economic Development Association. This project has economic development potential for Del Norte.

Set up governance procedures for the project (project management, decision-making, change management, designate responsibilities, etc.).

II. Select the alternative to be pursued.

The team will review all the materials prepared to date, including using the financial modeling tool, to make a decision as to which of the alternatives will make the best business sense. The Consultant is more than willing to help develop and nurture this approach.

At the outset limit operations to slaughter and cut& wrap. Add other products over time (i.e., sausage, jerky, etc.). Defer the retail sales store outlet until the fundamentals of the meat processing operation are well-established.

Produce a refined project timeline.

Notify appropriate authorities of intent to proceed (federal, state and local).

III. Identify specific funding sources

Acquire assistance to create a comprehensive business plan; one that includes commitments from producers, distributors and other suppliers/vendors. Total number of identified meat animals in the county available in a year period means that there is sufficient supply to build a business, but just barely. There is some potential to draw animals from north Humboldt and southern Curry counties. The alternative selected needs to be reviewed carefully with an eye to meat animal populations.

Acquire assistance to create construction plans for the desired alternative. The plans in this document are a good place to start. Get federal and state authorities to review plans very early on.

Acquire assistance to prepare the HACCP and SSOP. The plan must be prepared by a graduate of an FSIS recognized program.

IV. Solidify a marketing strategy

Draw upon the numerous distribution opportunities for getting the product out to consumers.

Focus on developing a solid distribution network. Sales will drive everything. Without sales and the means to distribute product, the meat processing operation will fail.

Consider addition of a retail sales outlet after a period of operating the processing plant and getting distribution channels in place.

V. Develop a relationship with federal, state and local authorities.

Absolutely critical for success is an on-going good relationship with regulators.

VI. Acquire the meat processing facility

Build from scratch and/or buy the necessary equipment.

Gain approval from all levels of inspections.

VII. Operate the meat processing plant

Carefully monitor every detail to ensure rapid growth in learning how to operate the meat slaughter and processing business.

All things considered, the feasibility of a small scale meat processing facility demonstrated in this study only can be realized with additional thoughtful and directed effort. This is no simple matter and a feasibility study in and of itself is insufficient to do more than indicate where to begin and steps to take.

The contents of the feasibility study provides a wide variety of information to inform next steps in the process of developing the opportunity into a realized outcome with economic and health impacts.

Del Norte can do this. Much diligent, hard work is ahead.

APPENDIX 1—MEAT PROCESSING REGULATIONS

Introduction

*This section presents a high-level introduction and overview of meat regulation. A number of available guidelines specifically detail the federal requirements.*¹¹¹

Two ways for farmers to realize higher returns for their farm products are to take over some of the traditional roles of middlemen or to shift completely to direct marketing. Federal meat regulations are complex. Accurately interpreting the statutes governing the processing and sale of meat animals—including poultry—and their products is more formidable for livestock farmers than for their counterparts in fruit and vegetable production. Even experienced farmers can be confused by the regulations.

Without a clear understanding of what is and is not permitted under current laws, many meat producers are hesitant to participate more directly in the marketing of their product. Instead, farmers may be limited to contract growing livestock for large corporate packers or selling slaughter animals through a shrinking number of local auctions and dealers. Both alternatives offer limited recourse to competitive pricing.

USDA and state regulators have long recognized the farmer's right to slaughter animals on the farm for their own use. Over time this evolved into a custom slaughter model where people who owned very small meat lockers would come to a farm to slaughter an animal, break down the carcass and take the meat back to the locker to cut and freeze on the farmer's behalf.

Short History of Federal Inspection

Why are regulations for the processing and marketing of meat more complex than those for vegetables and fruit? Many of the acute human health problems posed by fresh fruit and vegetables are caused by unsanitary water. Fortunately, in the United States, ample, potable water is available and therefore fruits and vegetables are not considered as critical a threat. However, unlike fruits and vegetables, health pathogens can multiply rapidly in animal products that are improperly handled.

The United States acknowledged early on that poorly managed livestock and their products could pose a threat for human health. In 1865, USDA Secretary Isaac Newton urged legislation providing for the quarantine of imported animals. On May 29, 1868 Chester Arthur signed the act establishing the Bureau of Animal Industry, which was the forerunner of Food Safety Inspection Service. The Bureau of Animal Industry's early function was to focus on preventing diseased animals from being used as food.

¹¹¹ This section quotes extensively from "A Resource Guide to Direct Marketing Livestock and Poultry," Revised Edition, Martha Gow, Hollow Deer Farm, Dr. Tatiana Stanton, Cornell University, Contributions From: Jim McLaughlin, Cornerstone Farm Ventures Audrey Reith, Cornell Cooperative Extension Orange County, <http://www.smallfarms.cornell.edu/pdfs/Resource%20Guide%20to%20Direct%20Marketing%20Meat%20and%20Poultry.pdf>, March 2010,

In 1905, author Upton Sinclair published a novel titled "The Jungle", which took aim at the brutalization and exploitation of workers in a Chicago meatpacking house. This truly was the turning point for food inspection. While Sinclair attempted to raise awareness of the working conditions, he also raised public outrage with the unsanitary processing practices that he graphically described in his book. As a result of the public outcry, the United States government enacted the Federal Meat Inspection Act in 1906. The Act placed federal inspectors within slaughterhouses for the first time.

In the early 1900's local butchers slaughtered and cut meat that consumers used locally. Following World War II, the processing industry changed significantly. The rapid growth of the interstate highway system and the development of refrigerated trucks allowed packing houses to expand and become more mechanized. The poultry industry experienced explosive growth. The Bureau of Animal Industry evolved into the Food Safety Inspection Service (FSIS), a public health agency within the U.S. Department of Agriculture. Today, this agency oversees the processing, labeling, and packaging of commercial meat, poultry, and egg products.

Congress passed the Poultry Products Inspection Act in 1957 to keep pace with the rapidly expanding market for dressed, ready-to-cook poultry and processed poultry products. The 1967 Wholesome Meat Act and the 1968 Wholesome Poultry Products Act clearly defined the handling of meat products. They expanded the mandate of the Federal Meat Inspection Act and the Poultry Products Inspection Act by requiring that state inspection programs be "at least equal to" federal requirements.¹¹²

Initially, federal inspectors used sight, touch, and smell methods of inspection for meat products. As technology advanced, inspectors adopted laboratory testing to ensure that all meat and poultry handlers maintained products under proper conditions. Inspectors, in addition to the routine inspection, perform in-plant residue testing and collect samples for pathogens to ensure that products are free of disease pathogens.

Today, FSIS combines visual inspection of carcasses and periodic laboratory testing with an aggressive preventative program referred to as HACCP (Hazard Analysis and Critical Control Points). Under HACCP, the plant operator must identify all critical points along the processing and handling route where microbial and pathogenic problems could develop. The operator must then develop standard operating procedures (SOPs) for these areas of concern and for validating that no problems are encountered. The job of the inspector under HACCP today is not only to inspect animals and carcasses but also to ensure the plant is following the HACCP plan written specifically for it. Inspectors verify that a plant identifies potential hazards, completes testing, and undertakes corrective measures according to each plant's own personalized plan.

Purpose of Government Regulations

The purpose of government regulations for the inspection of meat and poultry products are to:

¹¹² Current government statutes covering meat products are listed in Title 9 of the "Code of Federal Regulations" for Animals and Animal Products. This code is available on the web (<http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=199909>) and as hard copies from the National Archives & Records Administration (NARA).

- 1) prevent the sale of adulterated, contaminated, or otherwise unsafe livestock products;
- 2) insure the safety of consumers by establishing minimum standards for the production, slaughter, processing, and marketing of these products; and
- 3) create a system of licensing, inspection and labeling to trace a product back to its origin if a public health problem should arise.

An inadvertent side effect of increased regulation and validation is that smaller processors and farmers may be disproportionately disadvantaged due to economies of scale. For example, validation equipment is often expensive to purchase and maintain. The smaller volume of output of smaller plants results in these plants incurring a greater overhead expense on a per pound basis.

This negatively affects producers and conflicts with the stated aim of agricultural agencies to increase the sales of value-added farm products. However, a close study of the meat statutes reveals some exemptions and alternatives that can benefit the small farmer and processor who are marketing slaughter animals or meat products.

It is far better to have an excellent understanding of the meat regulations and to diligently study any changes in their interpretation rather than to focus on circumventing them and risk trafficking in illegal or unsanitary products.

The livestock industry needs to build strong communication channels with meat inspectors. There is a formal review process for proposed changes in the wording of statutes. The livestock industry needs to be able to rapidly appraise farmers and small processors when such regulatory reviews are ongoing and find ways to motivate them to participate in the process.

Unfortunately, there are no formal regulatory review procedures when the interpretation of a regulation is being changed. This is unfortunate, because even a small change in interpretation can have damaging implications for farmers and processors. Making sure livestock farmers are knowledgeable about the current regulations governing meat products and slaughter is a positive first step at improving their ability to communicate effectively with officials.

How Regulations are Classified

The slaughtering and processing regulations that a farmer is required to abide by vary according to several factors. A farmer must first determine what type of animal he or she is raising. Is it a farm animal or is it poultry? Although ratites¹¹³ are birds, the USDA considers them similar to other farm animals when it comes to their slaughtering and processing.

The farmer must next decide if that animal is considered amenable, non-amenable or poultry. This varies from state to state. For example, bison are not specifically mentioned in the Federal Meat Inspection Act, making it non-amendable, or not listed. Never the less, specific state provisions may grant it amenable status for slaughter.

¹¹³ Ratites are large wingless birds including ostriches, emus, and rhea.

A farmer must then decide where and how the product will be sold. Will the product stay in state or will it be shipped out of state? Will product be sold retail or wholesale? If the farmer is doing his own marketing, will he be selling directly to an end consumer or will there be an intermediary such as a retail store or restaurant? Will the farmer sell live animals, carcasses, or retail cuts? The answers to these questions determine what type of slaughter facility is licensed to handle each of the different kinds of sales.

The last factor to consider is whether the animal needs to be raised, slaughtered and processed under specialized restrictions to meet any religious requirements of a given consumer market.

Once the above questions have been answered, it is far easier to figure out which regulations apply. The following section is designed to help a farmer determine which slaughtering and processing options are most appropriate for their situation.

Are the Animals Amenable, Non-amenable or Poultry?

A farmer must first determine the legal classification for his or her type of live stock. The regulations differ for amenable versus non-amenable species, and for red meat versus poultry species. The Federal Meat Inspection Act defines the kinds of animals that are considered “amenable” and must be slaughtered and processed under the Food Safety and Inspection Service (FSIS).

Amenable Poultry listed specifically in the Act include chickens, turkeys, ducks, geese, guineas, and squabs. All of them fall under the jurisdiction of the FSIS. However, the slaughter and processing regulations specified for them differ from those for the mammals and ratites mentioned earlier and are detailed in the Poultry Products Inspection Act.

Non-amenable species are those animals that are not listed specifically in the Federal Meat Inspection Act. They are not required to be processed under the Food Safety and Inspection Service, but are subject to FDA regulations. For the most part, non-amenable species may also be considered game animals. Because they are consumed in limited numbers, the potential risk from consuming an adulterated product from a non-amenable species is minimal in comparison to amenable species.

Non-amenable species include mammals such as reindeer, elk, deer, antelope, water buffalo, bison, squirrel, opossum, raccoon, rabbits, nutria or muskrat and non-aquatic reptiles such as land snakes. Even if a farmer raises a domesticated species of these animals, they are still considered non-amenable. For example, farm raised White-tailed Deer or New Zealand rabbits are both non-amenable species, though both can be found on farms across the state.

Non-Amenable poultry includes game birds such as pheasant and quail.

Aquatic reptiles (turtles, alligator, water snakes and frogs) are considered game animals. The Food and Drug Administration (FDA) classifies these aquatic reptiles as “Seafood” and they are therefore subject to the FDA's Office of Seafood regulations. The National Marine Fisheries Service (NMFS) of the National Oceanic Atmospheric Administration of the Department of Commerce administers the voluntary seafood inspection program.

A game animal refers to an animal—the products of which are food—that is not classified as fish, cattle, sheep, swine, goat, horse, mule or other equine, as defined by the Federal Meat Inspection Act or the Poultry and Poultry Products inspection Act.

Wild game includes game birds, big game and small game.

Game birds are subdivided into migratory game birds and upland game birds. "Upland game birds" (Gallinae) refers to wild turkeys, grouse, pheasant, Hungarian or European gray-legged partridge and quail.

"Big game" means deer, bear, moose, elk, except captive bred and raised North American elk (*Cervus elaphus*), caribou, and antelope.

"Small game" means black, gray and fox squirrels, hares, cottontail rabbits, frogs, land turtles, box, wood and the bog turtles, coyotes, red fox and gray fox except captive bred red fox or gray fox, raccoon, opossum, or weasel, skunk, bobcat, lynx, muskrat, mink, except mink born in captivity, fisher, otter, beaver, sable and marten but does not include coydogs.

To qualify as **domestic game, captive bred game, farm raised game or non-native big game**, the game must be held in private ownership on a licensed premise by which there is no means of escaping into the wild. Captive bred North American big game mammals may include: cougar, wolf, bear, bison, big horn sheep, mountain goat, antelope, elk, musk ox, mule deer, black tailed deer, caribou, swine and other domestic game animals as defined by law.

Some wild game may be taken by lawful hunting including deer, bears, coyotes, and rabbit. Trapping of game is also permitted but deer and bear may NOT be trapped. Some wild species legally taken (legally hunted or trapped within the designated season) and legally possessed may be sold. Skunk, bobcat, mink, raccoon, and muskrat may be bought and sold alive, dead, or in part during their respective open seasons. Migratory game birds and beaver, fisher, otter, bobcat, coyote, fox, raccoon, skunk, muskrat and mink shall be possessed, transported, and disposed of only as permitted by regulation of the department.

Why Identifying a Market Channel is Important

Regulations for livestock slaughter and meat processing vary depending on which market channel the farmer ultimately markets his or her product within. The regulations are not consistent across the three different animal classifications, and the determination of the market channel is critical to ensure lawful compliance for the end-market being served. Market channels are discussed here to help farmers determine what slaughtering and processing is required for their business model.

In a typical supply chain, a farmer might sell his or her slaughter animals at a local auction where a regional livestock dealer picks them up to sell to a distributor. The distributor could be a meat packer (a slaughterhouse that takes orders for carcasses from wholesale or retail businesses and then buys live animals and then slaughters and processes them to fill the orders) or a wholesale business that buys animals outright and then arranges their processing at a

slaughterhouse of their choice. The distributor then sells the carcasses or meat cuts to retail businesses that in turn serve the end consumer directly.

There are several opportunities to shorten this chain. For example, a farmer might sell his or her live animals direct to a dealer, a live animal market or a farmer-owned cooperative. It is important to note that a farmer generally assumes more labor and legal responsibility the more he or she becomes involved in the marketing process.

Even if simply taking an animal to auction, every farmer has some legal responsibility. When animals leave a farm for the auction house, farmers need to make sure animals are tagged and are wearing official USDA (for amenable species) or other appropriate tags (for non-amenable species and poultry) identification as required. Farmers should contact potential buyers, accurately describe their animals, make sure they meet the market demand, arrange for transporting and request prompt payment.

Even greater advantages are recognized when a farmer sells their livestock directly to consumers, who then make the slaughter arrangements. Even though this is a very direct way to market an animal, the fact that a live animal is sold (rather than the meat from it) allows a farmer to fall outside the parameters of many regulations. In this case, the meat from the live animal does not enter commerce, only the animal does. In this sales arrangement, the consumer often has a chance to evaluate visually the herd health and can easily trace back to the farm any problems that may arise.

A farmer can also evolve into a dealer or packer. If this occurs, then there are several licensing and bonding issues a farmer should be aware of.

Some farmers have opted to build custom slaughterhouses on their property. Some have even expanded their operations to include a live animal market. Some farmers have added an additional processing license to allow them to manufacture various meat and poultry value-added type products.

A farmer may also decide to sell meat and poultry products themselves. When selling meat, it is important for farmers to remember that the closer they move to the end consumer, the more responsibility they take on. Regulations and licensing for amenable red meat differ depending on whether a farmer is operating as a wholesaler and selling carcasses or retail cuts to other wholesalers, retail businesses and restaurants; or whether they are operating as a retailer and selling meat cuts direct to consumers. In the case of poultry, there are important exemptions from federal inspection depending on how many birds a poultry grower is processing for sale and whom they are selling the birds to.

The important point to remember is that the regulations for slaughtering and processing depend greatly on if a farmer decides to market live animals, carcasses or retail cuts to wholesalers, retail businesses or direct to consumers.

What is Commerce?

Commerce is the exchange or transportation of poultry products between States, U.S. territories and the District of Columbia. Commerce can be interstate or intrastate. **The USDA FSIS does not view the product as having been introduced into commerce if it has not left the control of the processing entity.** Therefore, products sold at a farmers' market by the farmer himself or by his employee are not considered to have entered commerce. However, if someone other than the farmer sells the product at the market, then the product enters commerce.¹¹⁴

Intrastate or Interstate?

Intra-State refers to transactions within a single state. A sale made from a farmer in Smith River, CA to a customer in Crescent City, CA is an intra-state sale.

Inter-State refers to transactions across state lines. This is trade between two states. A sale made between a farmer in Smith River, CA and a customer in Brookings, OR is an inter-state sale.

The Food Safety Inspection Service (FSIS) hold authority over food in interstate commerce, unless regulated by the USDA Food Safety and The Food and Drug Administration (FDA) under the Federal Food, Drug and Cosmetic Act.

The Federal Meat Inspection Act permits states to have a cooperative agreement with USDA FSIS, whereby states have a mandatory meat inspection program equal to the federal standards. The federal law limits state inspected amenable animals to intrastate commerce. However, this limitation is currently being challenged and may soon be changed.

In contrast, non-amenable meat from state licensed plants is eligible for sales in all states, including states with state inspection programs. Just because it is eligible for sale does not guarantee that it is legally allowed to be sold in a particular state. State or local health codes may prohibit the sale of state inspected non-amenable meat. When Chronic Wasting Disease was discovered east of the Mississippi River, many states closed their borders to the sale of not only live cervids, but also to the meat from these farmed species.

It is up to the producer to know the regulations of the jurisdiction to which he will be shipping his or her products. It is recommended that the producer call the State Department of Agriculture and the State Department of Fish and Game (or Natural Resources) to see what products are legally allowed to be sold in that state, what products are allowed to come into that state and what, if any, inspections are required for it to do so.

Religious Exemptions, Certifications, and Cultural Practices

Some cultures have very strict meat handling requirements. Muslim consumers require their meats to be "Halal" or "lawful" to their religious scriptures. For many Muslims, this means it should be slaughtered using "zabiha" methods. Halal requires that the animal must be humanely killed by an adult Muslim. However, some Muslims will accept Kosher killed

¹¹⁴ USDA Guidance for Determining Whether a Poultry Slaughter or Processing Operation is Exempt from Inspection Requirements of the Poultry Products Inspection Act, Revision1, April 2006.

meats (especially if Halal is unavailable) and some will accept meat killed by a Christian butcher.

During a zabiha kill, the animal faces Mecca and the Takbir (a blessing invoking the name of Allah, the Muslim word for “God”) is pronounced while the animal is killed without stunning—by holding its head back and using a quick, single continuous cut across the throat just below the jawbone to sever the windpipe, esophagus, arteries and veins forward of the neck bone. Ideally, the knife blade should be extremely sharp and twice as long as the width of the animal’s neck. A hand guard is permitted for safety.

Muslims view any livestock that has consumed any pork products (including lard or blood meal) to be unclean. Other feeds that might be categorized as “filth” may also lead to rejection of the animal. A 40-day period prior to slaughter of “clean” feed will generally suffice.

Customers who are Orthodox Jews require that livestock be Kosher killed. The animal is killed without stunning by a specially trained religious Orthodox Jew using a properly sharpened special knife with no hand guard, who subsequently inspects the carcass and organs for defects.

If the meat is to be certified as “Glatt Kosher”, a stricter Kosher standard, the carcass from a small animal such as a sheep must have no lung adhesions. Animals that are exposed to conditions predisposing them to pneumonia (i.e. poor ventilation, overcrowding, etc.) are most likely to have lung adhesions.

The sciatic nerve and various veins, fats and blood are prohibited from Kosher consumption and must be removed. In most cases, rather than going through the difficult procedure of removing the sciatic nerve in the hindquarter, only the forequarter is marketed as Kosher and the hindquarter is sold through other marketing channels.

Federally inspected slaughterhouses need to apply for a “religious exemption” from stunning to conduct Halal and Kosher slaughter. Unlike the “poultry exemptions” or the “custom exemption”, **this is not an exemption from federal inspection of the carcass; rather it exempts the plant from having to stun the animal prior to death.**

The animal should either be killed on the ground (allowable only for custom or on-farm slaughter), straddled or walked onto a double rail¹¹⁵ for a religious kill—because it is considered inhumane to hoist and shackled the animal by its hind legs while still alive. Research has shown that ruminant animals remain very calm when their body’s weight is supported by a “double rail”. However, the handling and preparation for the ritual falls within the ritual exemption. Therefore, if hanging the animal live is part of the ritual then it is allowed because the handling and preparation falls within the ritual exemption.

¹¹⁵ Information about the availability of double rail slaughter systems for large commercial operations is available on the web at <http://www.grandin.com/restrain/intro.rest.html>. A prototype of a double rail system for sheep and goats suitable for custom operations and smaller USDA plants is available on the web at <http://www.sheepgoatmarketing.org/sgm/education/restrainer/index.htm>

Although there are national certification programs for Kosher and Halal processed foods, there is no national mandatory labeling and certification for Halal or Kosher meats. For the most part, it is a farmer's responsibility to insure that their meat meets their customers' definitions of Halal or Kosher.

Cultural Practices

Certain African, Caribbean and Oriental cultures prefer carcasses to be scalded or singed as part of the processing procedure. A federally inspected slaughterhouse that plans to conduct scalding or singeing needs to include these procedures in the mandatory hazard analysis portion of their HACCP (Hazard Analysis Critical Control Point) plan.

Federal, State or Custom: What is the Difference?

Not all meat-processing facilities are the same. It is important to know the different types of slaughter and processing plants operating in the United States and more importantly for farmers, the markets they are allowed to process for. The following section describes these various facilities.

A red meat plant can simultaneously do work that is custom-exempt, retail-exempt and state or federally inspected; a poultry plant cannot. Depending on the state, a plant may or may not be both state and federally inspected. There are several federal poultry processing exemptions, all of which are complex and only exempt facilities processing less than 20,000 birds per calendar year.

USDA Inspected Meat Processing Facilities

The USDA issues a "grant of inspection" to approved facilities; USDA facilities for this reason are not "licensed" but "inspected". USDA inspected meat processing facilities that have been issued a "grant of inspection" may butcher and/or process amenable livestock or poultry under the Federal Meat Inspection Act. A USDA plant must conform to the "Code of Federal Regulations for Animals and Animal Products."¹¹⁶

Federal meat inspection requires that a USDA Food Safety Inspection Service (FSIS) inspector at a USDA inspected slaughterhouse must inspect the carcasses. The inspector must address all federal regulations outlined in the code. He must verify not only that the carcass is wholesome but also that the facilities, equipment and procedures conform to the owner's approved HACCP (Hazard Analysis Critical Control Point) plan. Third party testing of specific meat samples is required as part of the HACCP plan. Currently, the salary of this inspector is paid for by federal tax dollars.

There are strict federal mandates regarding the

- 1) health of the animals permitted to enter the plant;
- 2) care of the animals at the plant;
- 3) parts of the animal that can be used for human consumption; and
- 4) disposal of animal parts not used for human consumption.

¹¹⁶ Title 9 portion (revised Jan '01) of the code on the NARA (National Archives & Records Administration) website. The current address is <http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=200309>.

Inspected meat from these USDA inspected plants can be sold anywhere in the United States and exported to sell or trade in international markets.

In general, the physical requirements for a USDA inspected slaughterhouse are the following:

- 1) Facilities and equipment must be validated by owner’s HACCP plan to be hygienic.
- 2) In general, a wholesome plant is required to have:
 - a. easily cleanable equipment
 - b. washable, nonporous walls and ceilings
 - c. lack of condensation
 - d. appropriate rail heights
 - e. sufficient drains
 - f. sufficient lighting (50 ft candle lights in the processing area)
 - g. floor plan that keeps livestock and livestock contaminated material well separated from inspected meat
 - h. well running and appropriate coolers, rails, drains and hooks
 - i. sufficient septic or municipal sewage facilities
 - j. pest control
 - k. potable water
- 3) It must have employee welfare facilities (lunch locker, bathroom)
- 4) It must have inspection facilities (private room with filing cabinet and chair; bathroom facilities can be shared with employees)
- 5) Livestock must be stunned prior to slaughter unless the plant has a religious exemption.

There are some conditions where meat is exempted from having to conform to all or part of this code.

Some states hold their USDA inspected facilities to stricter regulations than what is outlined in the federal code. California generally follows the letter of the federal code but with several state additions.

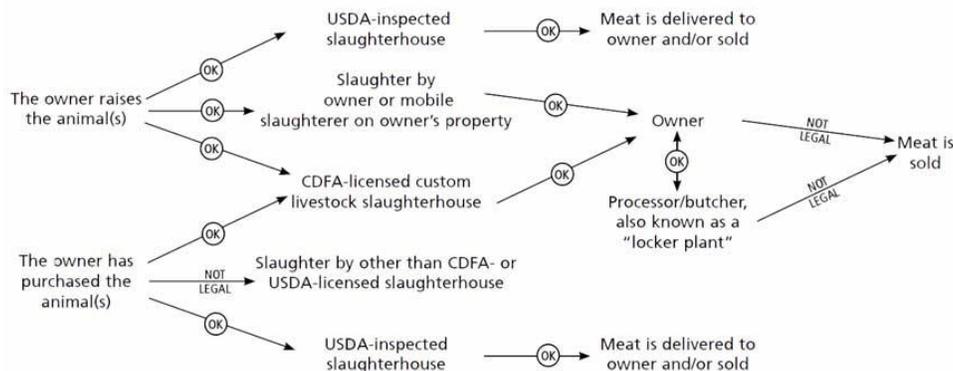


Figure 50—Schematic Diagram for Livestock Transactions in California

State or Local Inspected “Custom Exempt” Slaughterhouses

A custom exempt slaughterhouse may offer slaughtering services without federal inspection and oversight. The federal code provides for this exemption and allows the owner of an animal to forgo having the animal slaughtered under federal or state inspection if the meat and byproducts from that animal are consumed by the owner and his or her household—as opposed to being sold. Carcasses at these slaughterhouses are exempt from federal inspection because these plants are limited only to custom slaughter and processing. Carcasses and meat leaving custom slaughterhouses are not inspected and must be stamped “not for resale.”

Custom exempt slaughter is a service provided only to an animal’s owner. A person does not have to be present to take ownership of an animal. For example, if a farmer or live animal market sells live animals for the freezer trade, a household consumer can take ownership of the animal over the phone and have the animal delivered to a custom slaughterhouse for butchering and processing according to their directions. The farmer or live animal market needs to know the new owner's name and address and the animal must be clearly identified throughout the slaughter/processing operations so that the products the owner receives are from the animal that was selected by or for them.

Custom exempt slaughterhouses are not to be confused with state licensed plants that undergo state inspection of carcasses for intrastate sales. They also should not be confused with deer butcher shops, which only process hunter harvested wild deer. Some custom slaughterhouses have not applied to have an approved kill floor and are also set up primarily to process deer for hunters who harvest those animals within the state. (Hunter harvested deer carcasses cannot cross state lines without first being butchered to the imported state’s specification. In many cases, this means complete de-boning.)

Carcasses are not inspected under custom slaughter. However, custom exempt facilities are inspected periodically. The USDA Food Safety Inspection Service has jurisdiction over all amenable red meat processing in the United States but may opt to subcontract out inspection of custom facilities.

Some basic requirements of a custom slaughterhouse are:

- 1) washable walls and floors (for example, painted concrete),
- 2) kill floor located in a separate area from processing,
- 3) drains equipped with a back-flush system, and
- 4) hot water capability of 170° F (for melting poultry fat).

California code¹¹⁷ requires:

- Each person shall, before operating a meat processing establishment or a custom livestock slaughterhouse, file an application accompanied with an application fee, with the director for a license to operate the establishment.

¹¹⁷ California Codes, Food and Agriculture Code Section 19010-19017, <http://www.aroundthecapitol.com/code/getcode.html?file=../fac/19001-20000/19010-19017>

- No person shall operate an establishment performing any of the functions stated in this chapter unless the establishment is licensed and continues to meet building and sanitation standards required by this chapter and the regulations thereunder.
- No person shall operate a licensed establishment performing the functions stated in this chapter unless all livestock and livestock products are inspected for wholesomeness and the facilities are inspected for sanitation by a licensed livestock meat inspector or a licensed processing inspector.
- All custom slaughtered livestock carcasses and parts shall be marked in a manner required by the department to identify the inspected premises and that the products are not for sale.

Federal guidelines can and do change; thus one of the first steps in opening a custom slaughterhouse in California is to contact the California Department of Agriculture. Local health departments are also involved because they must approve the slaughterhouse septic system prior to opening and will be responsible for testing any well water to validate it as potable twice yearly.

Non-Amenable Slaughtering and Processing Facilities

These are specialized state licensed facilities that conduct butchering and/or processing operations that are exempt from federal inspection but require licenses in order to operate. One type of classification is for plants that process non-amenable farm raised game species (bison, farmed deer, rabbits, etc). Non-amenable livestock and poultry species can be slaughtered at a licensed plant without federal inspection.

Products manufactured from this facility may be offered for sale by the farmer who raised them. The slaughterhouse may also buy the meat from the farmer and market it themselves in a meat shop affiliated with the slaughterhouse or sell the meat to a wholesale or retail outlet.

The meat can be sold within state or across state lines but must be sold directly to an end consumer or a restaurant, hotel, boarding house, caterer or similar retail business. Both states must agree to the transaction. Some states, in an effort to protect their wild game populations and protect their own game meat industries, have opted not to allow product into their state from outside of it.

If the meat is processed by mixing it with meat or fat from a conventional (amenable) livestock species or if the meat is cured using nitrate then further restrictions may apply.

The carcasses are not inspected, though the owner/operator of the facility has the right to reject a carcass or product. All non-amenable species must also have certified health papers from the farmer's veterinarian stating that the animals are in good health and are eligible to enter the food chain.

These facilities are inspected by state employees and are held to a higher standard than conventional custom plants. For example hot water must be 180°F. A blue print or schematic of the plant must be submitted and approved prior to licensing. HACCP plans documenting the handling of products for resale may be required.

Poultry Slaughtering and Processing Facilities

Another Non-Amenable classification is granted for plants that slaughter and/or process amenable poultry under circumstances that allow them to be exempt from federal inspection. There are several allowable exemptions important to poultry growers wanting to market their own birds themselves within state to household consumers, retail stores, restaurants, and distributors. These exemptions are also important to live poultry markets and to custom processors.

The many poultry exemptions vary with regard to how many birds can be processed, who the birds can be processed for, the type of processing that can be done, and what market channels the resulting poultry products can be sold through. Generally, a plant is permitted to operate under only one poultry exemption. Therefore, poultry growers should study the exemptions carefully to choose the exemption that best meets their needs.

Obtaining Federal Meat and Poultry Inspection^{118,119}

Overview

The United States Department of Agriculture (USDA), Food Safety and Inspection Service (FSIS) is responsible for inspecting meat, poultry, and processed egg products for safety, wholesomeness and proper labeling. Federal inspection personnel are present at all times in virtually all slaughter and egg processing plants and for at least part of each day in establishments that further process meat and poultry products.

Meat inspection became law under the Federal Meat Inspection Act of 1906, which requires inspection of red meat products sold in interstate and foreign commerce. The Act established strict sanitation requirements for plants and calls for examination of all labels for truthfulness and accuracy. In 1968, the Poultry Products Inspection Act extended the same provisions to poultry inspection. Under the Meat and Poultry Acts, FSIS inspects all meat and poultry sold in interstate commerce.

Federal inspection assures the consumer that meat, poultry and egg products are clean, safe, and wholesome for human consumption at the time of purchase. This involves inspection of the live animal, carcass, internal organs, plant facilities, equipment, personnel and transportation system.

In 1996, FSIS issued the Pathogen Reduction/Hazard Analysis Critical Control Point (HACCP) final rule. As the name implies, there are two components to the 1996 rule: the reduction of pathogens and the development and implementation of HACCP systems. Today, all federally inspected meat and poultry establishments are operating under a HACCP system and all new establishments must have a HACCP inspected meat system developed before receiving a grant of inspection. HACCP allows establishments to identify food safety hazards that are reasonably

¹¹⁸ Small/Very Small Plant Guide: *Applying for a Federal Grant of Inspection For Meat and Poultry Establishments*, United States Department of Agriculture, http://www.fsis.usda.gov/PDF/Guidelines_for_Obtaining_Federal_Grant_of_Inspection.pdf , September, 2006

¹¹⁹ Pertinent Code of Federal Regulations (CFR) relating to Animals and Animal Products can be found at http://www.access.gpo.gov/nara/cfr/waisidx_10/9cfrv2_10.html#301

likely to occur in the process or type of product being produced and establish points of control to prevent adulteration from occurring. FSIS inspection personnel verify that an establishment has developed and is implementing the HACCP system as designed.

The HACCP final rule also requires the development and implementation of Sanitation Standard Operating Procedures (SSOPs). These programs are intended to prevent direct product contamination or adulteration, and focus on pre-operational and operational activities. Every establishment must develop, implement, and maintain effective SSOPs. FSIS has developed generic HACCP and SSOP plans to aid prospective applicants in developing these required components.

The inspection process starts with the live animal. Ante-mortem inspection involves a visual and physical evaluation of the live animal prior to slaughter to identify any conditions that may indicate disease or illness. Humane handling is also a primary concern. Strict guidelines are in place and are strongly enforced to prevent the mishandling of animals. FSIS inspection personnel are responsible for conducting a thorough examination of all slaughtered animals. The Post mortem inspection allows inspection personnel to further evaluate the health of carcass and tissues.

The inspection system continues throughout the entire processing segment of the industry, including both raw and fully cooked products. Inspection personnel are responsible for verifying that an establishment is maintaining sanitary conditions and following all food safety related procedures and labeling regulations.

Meat, poultry and egg production is the most highly regulated food industry¹²⁰. FSIS is responsible for developing rules and regulations for the production of wholesome and safe foods and providing regulatory oversight during the day-to-day production of these products.

The combination of regulatory oversight and the commitment and dedication of the plant operator allows consumers to purchase and prepare meat and poultry products with confidence in the safety of these products. Food safety begins with the establishment, follows with regulatory verification, and ends with the consumer.

7 Basic Steps Required for Obtaining Federal Meat and Poultry Inspection

Upon receipt of your application and completion of all items, the District Manager or designee will conduct a review of the establishment. If all is found acceptable, a Conditional Grant of Inspection will be issued to allow you 90 days to produce and validate your HACCP Program.

The District Manager for Del Norte County is located as follows:

Alameda, CA
District 05
States: California

¹²⁰ Recent contaminated egg products from Iowa producers call this claim regarding poultry and egg production into question.

Dr. Neal Westgerdes, District Manager
620 Central Avenue
Building 2C
Alameda, CA 94501
Phone: (510) 337-5000
Ext. 1 for DM or DDM
FAX: (510) 337-5081
Emergency 24-Hour: 1-866-729-9307
Admin. Functions:
Ms. Darlene Mullins
(510) 337-5000 Ext. 234

Step 1—File an Application for Inspection

Complete application (FSIS Form 5200.2 —see Appendix 3). Mail completed application to the appropriate District Office, who will have Federal jurisdiction over the operation of your plant. Your local Frontline Supervisor or designee can assist you, if you have any questions.

In addition to completing the application, pay particular attention to item 106. “Attach a Description of the Limits of the Establishment Premises that is to be under Federal Inspection.” This can be a written description or a drawing. If a drawing, place a North compass heading on the drawing.

Special note of instruction:

- Complete all of the sections and numbered items. If an item is not applicable enter “N/A” or none. If blocks 23 and 24 are not applicable, you must write “None.” N/A is not acceptable.
- Item 25—You must develop a written Sanitation Standard Operating Procedure (SSOP) for the Establishment. (See Step 6—“Standard Operating Procedures for Sanitation.”)

Step 2—Facilities Must Meet Regulatory Performance Standards

Establishments that conduct operations under a Grant of Inspection from USDA’s Food Safety and Inspection Service must conduct operations under the Provisions of Part 416. These requirements include the following Regulations—416.2(a) (b) (c) (d) (e) (f) (g) (h) and Regulation 416.3.

Step 3—Obtain Approved Labels and/or Brands

After an application for inspection has been filed, an official plant number will be reserved upon request by the applicant. This number is used to identify all inspected and passed products prepared in the establishment. All carcasses from slaughtered animals must be ink-branded with the U.S. Inspection legend, which includes the plant number. All packaged meat products must have the U.S. Inspection legend, with the plant’s number printed on the label of the package. All labeling material must be federally approved and on-hand before inspection will be granted. (See Appendix 6 for FSIS Form 7234.1 and instructions. Also, find Additional FSIS Contacts for Information, see CFR Parts 316, 317,

http://www.access.gpo.gov/nara/cfr/waisidx_07/9cfr316_07.html & 381.96 thru 381.144
http://www.access.gpo.gov/nara/cfr/waisidx_07/9cfr381_07.html.

Step 4—Obtain Approved Water Source Letter

If the water entering an establishment is supplied by a Municipal water supply system (i.e. city, county, or other public water system) the letter is issued by the Municipality, or the State Public Health Service or its county office. If the water is from a private water supply (such as a private well), the letter must be issued by the State Public Health Service or the appropriate county office. The letter should identify the source, state that the source is approved, and that the water is potable and meets tests prescribed by the Environmental Protection Agency in its “Drinking Water Standards.” In addition to the water approval letter, a current acceptable water laboratory sample report (water potability certification) must be on file before inspection is granted.

NOTE: If the water is supplied from private wells, the letter must state that the wells are on the premises of the establishment and are effectively protected from pollution. (See Appendix 7 for Sample Letter for Approved Municipal Water Supply)

Step 5—Obtain Approved Sewage System Letter

State or Local health authorities can provide a letter stating that the plant’s sewage system is acceptable. If State and Local authorities certify the water source, they may certify the sewage system in the same letter. (See Appendix 8 for Sample Letter for Approved Sewage System)

Step 6—Provide a Written Standard Operating Procedure for Sanitation

A written Standard Operating Procedures for Sanitation (Sanitation SOPs) tailored to each plant will need to be developed before being granted Federal Inspection. (See CFR parts 304.3(a), 416.11 – 416.17 and Appendix 9 for Sample Sanitation Standard Operating Procedure (SSOP))

Step 7—Provide a Written Hazard Analysis and HACCP Plan¹²¹

The Hazard Analysis Critical Control Point (HACCP) system is a scientific approach to process control. It is designed to prevent the occurrence of problems by assuring that controls are applied at any point in a food production system where hazardous or critical situations could occur. Hazards include biological, chemical, or physical contamination of food products. Whenever a hazard analysis identifies that one or more food safety hazards are reasonably likely to occur, a written HACCP plan shall be developed.

Note: You may utilize an outside consultant who is not employed by the establishment. Questions about the use of consultants may be answered by an FSIS representative. Workshops are being conducted around the country and a self-study guide and video can be provided by USDA Outreach Program. Each State is also assigned a HACCP Coordinator to assist plants with the development of HACCP Programs. (See Appendix 5—Additional FSIS Resources for Assistance, CFR parts 304.3(b) and (c) and 417)

¹²¹ For a more detailed and thorough set of instructions, see “Guidebook for the Preparation of HACCP Plans and the Generic HACCP Models,” United States Department of Agriculture, Food Safety and Inspection Service, <http://www.fsis.usda.gov/index.htm>, September 1999 HACCP-13

The following is an example of a **PROCESS FLOW DIAGRAM** for the cattle slaughter process in generic establishment X. Figure 26 is an example of a **PRODUCT DESCRIPTION** for the cattle slaughtered by generic establishment X.

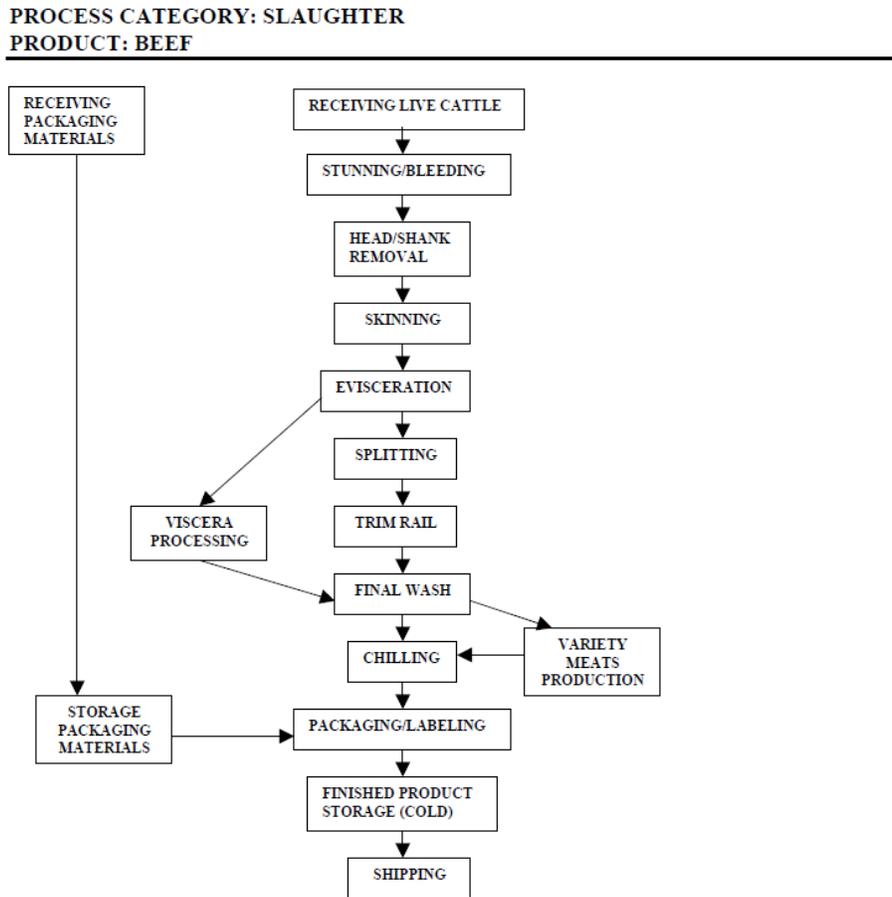


Figure 51—Process Flow Diagram for the Cattle Slaughter Process (Generic)

PROCESS CATEGORY: SLAUGHTER	
PRODUCT: BEEF	
1. COMMON NAME?	BEEF; BEEF VARIETY MEATS
2. HOW IS IT TO BE USED?	CARCASSES; VARIETY MEATS
3. TYPE OF PACKAGE?	CARCASSES – NONE; VARIETY MEATS – 50 POUND BOXES
4. LENGTH OF SHELF LIFE, AT WHAT TEMPERATURE?	7 DAYS AT 40° F
5. WHERE WILL IT BE SOLD? CONSUMERS? INTENDED USE?	WHOLESALE TO DISTRIBUTORS ONLY
6. LABELING INSTRUCTIONS?	KEEP REFRIGERATED
7. IS SPECIAL DISTRIBUTION CONTROL NEEDED?	KEEP REFRIGERATED

Figure 52—Product Description for the Cattle Slaughtered (Generic)

Once the company HACCP team in your establishment has prepared your Process Flow Diagram, they should verify it by walking through the establishment following the flow of product and making sure that all the steps of the process are included in the flow diagram. The team should also review the information provided on the Product Description to make sure all the key facts are included, such as identifying consumers, especially those with particular health problems or known to be at risk.

Note: If you are slaughtering cattle and your process includes steps not included in this example, such as pre-evisceration spray, those steps should be added. Also, if your process does not include all the steps identified in this example, those steps would be omitted when conducting the hazard analysis. That is generally, how you use these generic model examples--just omit the features which do not apply to your operation or if your operation includes features not included in this example, they should be added.

By completing a Process Flow Diagram and a Product Description, you have met the requirements of 417.2(a)(2). You can use the Process Flow Diagram in particular to help you complete the rest of the hazard analysis. Use the flow diagram to systematically review each step in the process and ask the question, "Is there a food safety hazard which is reasonably likely to occur which may be introduced at this step?" In answering the question, your HACCP team needs to consider biological (including microbiological), chemical and physical hazards.

Hazard Analysis

Once the product(s) are accurately described through the flow diagram and product description, the HACCP team should begin work on the **HAZARD ANALYSIS**. The hazard analysis is fundamental to developing a good HACCP plan and one that meets regulatory requirements. The regulatory requirements for a hazard analysis are found at 4 17.2(a).

When the HACCP team has completed their hazard analysis, it is a good idea to review the flow diagram, the product description and the hazard analysis itself to make sure they are complete. Part 41 7.2(a)(3) includes a list of sources from which food safety hazards might be expected to arise. Reviewing that list could help the HACCP team check for completeness.

Developing Your HACCP Plan

The company HACCP team can now take the materials it developed while doing the hazard analysis and use them to build the **HACCP Plan**. Part 417.2 (c) and (d) are the regulatory requirements:

- (c) The contents of the HACCP plan. *The HACCP plan shall, at a minimum:*
- (1) *List the food safety hazards identified in accordance with paragraph (a) of this section, which must be controlled for each process.*
 - (2) *List the critical control points for each of the identified food safety hazards, including, as appropriate:*
 - (i) *Critical control points designed to control food safety hazards that could be introduced in the establishment, and*
 - (ii) *Critical control points designed to control food safety hazards introduced outside the establishment, including food safety hazards that occur before, during, and after entry into the establishment;*
 - (3) *List the critical limits that must be met at each of the critical control points. Critical limits shall, at a minimum, be designed to ensure that applicable targets or performance standards established by FSIS, and any other requirement set forth in this chapter pertaining to the specific process or product, are met;*
 - (4) *List the procedures, and the frequency with which those procedures will be performed, that will be used to monitor each of the critical control points to ensure compliance with the critical limits; Include all corrective actions that have been developed in accordance with §417.3(a) of this part, to be followed in response to any deviation from a critical limit at a critical control point; and*
 - (5) *Provide for a recordkeeping system that documents the monitoring of the critical control points. The records shall contain the actual values and observations obtained during monitoring.*
 - (6) *List the verification procedures, and the frequency with which those procedures will be performed, that the establishment will use in accordance with § 417.4 of this part.*
- (d) Signing and dating the HACCP plan. (1) *The HACCP plan shall be signed and dated by the responsible establishment individual. This signature shall signify that the establishment accepts and will implement the HACCP plan.*
- (7) *The HACCP plan shall be dated and signed:*
- (i) *Upon initial acceptance;*
 - (ii) *Upon any modification; and*
 - (iii) *At least annually, upon reassessment, as required under § 41 7.4(a)(3) of this part.*

Identifying CCPs

Part 417.2(c)(1) and (2) require that the food safety hazards identified in the hazard analysis be listed on the HACCP plan and that there be a CCP for each identified hazard.

Verification

There are different three types of verification and 9 CFR part 417.4(a)(2) included specific regulatory requirements for each. The regulatory requirements for ongoing verification are:

(2) Ongoing verification activities. Ongoing verification activities include, but are not limited to:

- (i) The calibration of process-monitoring instruments;*
- (ii) Direct observations of monitoring activities and corrective actions; and*
- (iii) The review of records generated and maintained in accordance with §417.5(a)(3) of this part.*

Records

Regulatory requirements are listed in 9 CFR part 417.5(a) and (b):

§ 417.5 Records.

(a) The establishment shall maintain the following records documenting the establishment's HACCP plan:

- (1) The written hazard analysis prescribed in § 417.2(a) of this part, including all supporting documentation;*
- (2) The written HACCP plan, including decision making documents associated with the selection and development of CCPs and critical limits, and documents supporting both the monitoring and verification procedures selected and the frequency of those procedures.*
- (3) Records documenting the monitoring of CCPs and their critical limits, including the recording of actual times, temperatures, or other quantifiable values, as prescribed in the establishment's HACCP plan; the calibration of process-monitoring instruments; corrective actions, including all actions taken in response to a deviation; verification procedures and results; product code(s), product name or identity, or slaughter production lot. Each of these records shall include the date the record was made.*

(b) Each entry on a record maintained under the HACCP plan shall be made at the time the specific event occurs and include the date and time recorded, and shall be signed or initialed by the establishment employee making the entry.

Corrective Actions

The Corrective Actions Log is used to create the records of any corrective actions taken because of deviations from critical limits at CCPs. The regulatory requirements for planned corrective actions are found at 9 CFR 417.3(a):

§ 417.3 Corrective actions.

(a) The written HACCP plan shall identify the corrective action to be followed in response to a deviation from a critical limit. The HACCP plan shall describe the

corrective action to be taken, and assign responsibility for taking corrective action, to ensure:

- (1) The cause of the deviation is identified and eliminated;*
- (2) The CCP will be under control after the corrective action is taken;*
- (3) Measures to prevent recurrence are established; and*
- (4) No product that is injurious to health or otherwise adulterated as a result of the deviation enters commerce.*

Preparation completed

At this point the HACCP team has now completed preparation of the documents which are necessary to meet regulatory requirements for a Hazard Analysis and a HACCP Plan for their cattle slaughter production process. They have secured a copy of FSIS Directive 5000.1, Enforcement of Regulatory Requirements in Establishments Subject to HACCP System Requirements, the HACCP Basic Compliance Checklist which will be used by inspection program personnel. The HACCP team also has modified the inspection form to make the statements into positives, and now has a checklist for its own use to make sure they have not omitted anything in their plan development and preparation. When they are confident that they have done what is necessary, they will turn their Hazard Analysis and HACCP Plan over to the establishment owner for decisions about implementation.

General Information

Separation of Official Establishments

Each official establishment shall be separate and distinct from any unofficial establishment. Inspection will not be granted in any building in which any part of it is used as living quarters, unless the part for which inspection is requested is separated from such quarters by floors, walls, and ceilings of solid concrete, brick, wood, or similar material, and the floors, walls, and ceilings are without openings that communicate directly or indirectly with any part of a building used as living quarters. (See CFR parts 305.1, 305.2 and 381.26)

Inauguration of Inspection

Prior to the inauguration of inspection, an examination of the establishment and premises will be made by inspection personnel. (See CFR parts 305.4 and 381.27)

Inspection Office

Office space shall be provided by official establishments, rent free, for the exclusive official of the inspector and other FSIS employees assigned to the establishment. The space set aside for this purpose shall meet with approval of the frontline supervisor. This space should be suitable for the storage of program supplies and for Inspection program personnel to change clothes if such clothes changing facilities are deemed necessary by the frontline supervisor. Laundry service for Inspection program personnel's outer work clothing shall be provided by each establishment. At the discretion of the Administrator, small plants requiring the services of less than one full time inspector need not furnish facilities for FSIS employees as prescribed in this section, where adequate facilities exist in a nearby convenient location. (See CFR parts 307.1, 307.2, 307.3, 381.27 and 381.36(a))

Hours of Operation

The operator of the official establishment shall inform the inspector in charge (IIC) when work in each department has been concluded for the day, and provide the IIC with the day and hour when work will be resumed by the establishment. Whenever any product is to be overhauled or otherwise handled during unusual hours, the establishment operator shall notify the IIC a reasonable time in advance of the day and hour when such work will begin and such product shall not be handled prior to that time. No department, in which operations are being conducted, that requires inspection, will be operated except under the supervision of an FSIS employee. Prior to the initial start of operations, you will be asked to provide a written schedule of the establishment's your hours of operation. The frontline supervisor for your area will contact you for that information. (See CFR parts 307.4 and 381.37)

Inspection Charges

Inspection service is provided free of charge for the first 8 hours per shift consecutive days (Sunday through Saturday). Any work conducted over 8 hour shift, or any time past the initial 5 consecutive day period, will be charged to the plant at the prevailing hourly overtime rate. If the operator of the establishment requests inspection during odd hours, a minimum of 2 hours will be charged to the plant at the above rate. This rate is also charged if the plant works on any Federal holiday. Federal holidays are the first day of January, the third Monday of January, the third Monday of February, the last Monday of May, the fourth day of July, the first Monday of September, the second Monday of October, the eleventh day of November, the fourth Thursday of November, the twenty- fifth day of December and any other day designated as a holiday by Federal statute or Executive Order. When any of the above listed holidays fall on a weekday, that day becomes a holiday. When a holiday falls on a Saturday, the preceding work day (Friday) becomes a holiday. When a holiday falls on a Sunday, the next work day (Monday) becomes a holiday. (See CFR parts 307.5, 307.6, 381.38 and 381.39)

Hours of Duty

The maximum time a slaughter inspector may be assigned daily to a post mortem inspection position is 10 hours per day, and the inspector shall not work more than a total of 12 hours per day. The 10 hour post mortem time, does not include time spent before and after slaughter operations, conducting ante-mortem, sanitation, and offal inspection; supervising disposal of condemned material, and preparing reports. Processing assignments shall not be more than 12 hours per day. Time used for meals is not included in counting the above hours. Lunch periods shall not be less than 30 minutes nor more than one hour. Lunch periods shall begin between the fourth and fifth hour of duty. (See CFR parts 307.4 and 381.37)

Withdrawal of Inspection

Inspection may be withdrawn from an establishment where the sanitary conditions are such that its products are rendered adulterated, or for failure of the operator to destroy condemned products as required by the Act and regulations.

The assignment of inspectors may be temporarily suspended, in whole or in part, to the extent it is determined necessary to avoid impairment of the effective conduct of the program when the operator of any official establishment or any subsidiary therein, or any officer, employee, or agent of any such operator, or agency, threatens to forcibly assault or forcibly assaults,

intimidates, or interferes with any FSIS employee in or on account of the performance of his/her official duties.

The inspector in charge can withhold inspection (conditional withdrawal or suspension) and notify the establishment. (See Directive 5220.1¹²²)

Disposal of Offal and Other Slaughter By-products

Offal Defined

Offal is a culinary term used to refer to the entrails and internal organs of a butchered animal. The word does not refer to a particular list of organs, but includes most internal organs other than muscles or bones. Note that as an English collective noun, the term "offal" is used in the same form for singular and plural—without a final "s." People in some cultures shy away from offal as food, while others use it as everyday food, or even in delicacies that command a high price.

Offal not used directly for human or animal food is often processed in a rendering plant, producing material that is used for fertilizer or fuel.¹²³

In the United States, the giblets of chickens, turkeys and ducks are much more commonly consumed than the organs of mammals, except for the liver, which is eaten quite commonly. Ground chicken livers, mixed with chicken fat and onions, called *chopped liver*, is a meal made with offal in the United States.

In some parts of the country the euphemism "variety meats" is used for mammal organ meat. Some ethnic groups have traditional dishes made from lungs (such as *lungen stew*). Pepper Pot soup, frequently served in Philadelphia, is made from tripe (beef stomach).

Mammal offal is somewhat more popular in the American South, where some recipes include chitterlings, chicken gizzards and livers, and hog maw. Scrapple, sometimes made from pork offal, is somewhat common in the Northeast US, particularly in areas with Amish communities. Fried-brain sandwiches are a specialty in the Ohio River Valley. Traditional recipes for turkey gravy typically include the bird's giblets. Rocky Mountain oysters or *prairie oysters* (beef testicles) are a delicacy eaten in some cattle-raising parts of the western US and Canada. Turkey Fries (testicles) are served in restaurants in Nebraska.

Offal Disposal Processes

Rendering

Generally rendering process is accomplished by receiving raw materials followed by removing undesirable parts, cutting, mixing, sometimes preheating, cooking, and separating fat and protein materials. The concentrated protein is then dried and ground. Additionally, refining of gases, odors, and wastewater (generated by cooking process) is necessary. Rendering processes may be categorized as either "edible" or "inedible."

¹²² <http://www.fsis.usda.gov/OPPDE/rdad/FSISDirectives/5220-1Rev1.pdf>

¹²³ <http://en.wikipedia.org/wiki/Offal>

In “edible” rendering processes, carcass by-products such as fat trimmings are ground into small pieces, melted and disintegrated by cooking processes to release moisture and “edible” tallow or fat. The three end product portions (proteinaceous solids, melted fat, and water) are separated from each other by screening and sequential centrifugations. The proteinaceous solids are dried and may subsequently be used as an animal feed, water is discharged as sludge, and the edible fat is pumped to storage for refining.

Plants that employ “inedible” rendering processes convert the protein, fat, and keratin (hoof and horn) materials found in carcasses into tallow, carcass meal (used in livestock feed, soap, production of fatty acids, etc), and fertilizer, respectively. As was true for the edible process, raw materials in the first stage of an inedible process are dehydrated and cooked, and then the fat and protein substances are separated. The pre-cooking processes mainly include removal of skin and paunch and thorough washing of the entire carcass. The hide is not usually removed from hogs and small animals, but the hair of such animals is generally removed before washing and cleaning. The carcasses are crushed and transported to a weighing bin and then passed through metal and non-metal detectors. These devices in turn sort out nearly all of the magnetic and non-magnetic metal materials (tags, hardware, and boluses). Metals that may be associated with the carcasses are removed by strong magnets attached to conveyors.

The use of carcasses in advanced stages of decomposition is undesirable because hide removal and carcass cleaning is very difficult, and the fat and protein resulting from such carcasses is generally of low quality. In the event of a disaster situation, decayed carcasses without entrails along with dumped paunches should be segregated and processed separately.

In spite of the variation in investment and energy costs, different rendering systems work well for small (poultry), medium (swine, sheep, calves), and large sized (cattle and horse) mortalities. This section outlines the four major rendering options (wet, dry, batch, and continuous) as well as recent combination techniques called wet pressing.

Wet rendering

In wet rendering systems, moisture is added to the raw materials during the cooking process. According to Kumar (1989), wet rendering is a process in which the raw material and added water are subjected to direct high steam pressure in a wet rendering vessel. A wet rendering process may be carried out in batch or continuous formats, and in horizontal or vertical vessels.

Although wet rendering can produce good-quality tallow, this system is no longer used because of its high energy consumption, loss of meal (up to 25% in wastewater), and adverse effects on fat quality (Ockerman & Hansen, 2000). It is also a laborintensive process.

Dry rendering

Whereas the wet rendering method uses direct pressurized steam to cook carcasses along with grinding in large closed tanks, the relatively “newer” method of dry rendering cooks ground carcasses indirectly in their own fat while contained in a horizontal, steam-jacketed cylindrical vessel equipped with an agitator. In both methods, the final temperature of the cooker (120-135°C [250-275°F]) destroys harmful pathogens and produces usable end products such as meat, feather, bone, and blood meal that can be used in animal feeds (Franco & Swanson, 1996, and

EPAA, 2002). Dry rendering can be accomplished in batch, semi continuous, and continuous systems.

Batch rendering

Both dry and wet rendering systems may be used in a batch configuration.

Continuous rendering

Although a variety of rendering options have been designed and operated (from the early 1960s, by Baker Commodities in Los Angeles), most of them have a “continuous cooker” and use heating, separation, and cooling processes on a continuous flow basis. EPAA (2002) explained that in this system, all the rendering processes are done simultaneously and consecutively. Most continuous rendering systems require little to no manual operation, and, assuming a constant supply of raw material, finished products will be generated at a constant rate. In this system, more automated control is exercised over the crushing of big particles, uniform mixing of raw material, and the maintenance of required time and temperatures of the cooking processes.

Press dewatering and wet pressing methods

Although under similar conditions, dry rendering systems use less energy than wet rendering systems, the energy conservation issue has forced renderers to seek new rendering processes that are even more energy efficient. A variety of methods have been suggested that use less heat while at the same time producing tallow and MBM of higher quality and quantity. In the press dewatering method suggested by Rendertech Limited (2002) the main processes are similar to continuous low temperature rendering (LTR) systems in that raw materials are heated until all the carcass fat is melted.

Composting

For the last two decades, carcass disposal by burial is being replaced with alternatives such as composting. Improper animal mortality disposal may generate various environmental and health hazards such as odor nuisance (resulting from the anaerobic breakdown of proteins) that can reduce the quality of life and decrease property values. Pathogens, which may still be present in the decomposed material, are capable of spreading diseases in soil, plants, animals and humans. The potential leaching of harmful nitrogen and sulfur compounds from animal mortalities to ground water is another concern. To control these side effects, compost facility operators need to know and understand the science and guidelines of carcass composting. While basic principles of carcass composting are similar to those for composting of organic materials, its management issues, including appropriate composting methods for large or small scale carcass composting, quantities and types of carbon sources, composting time, odor and leachate control, and equipment requirements differ from composting of organics.¹²⁴

Carcass composting is a natural biological decomposition process that takes place in the presence of oxygen (air). Under optimum conditions, during the first phase of composting the temperature of the compost pile increases, the organic materials of mortalities break down into relatively

124 “Carcass Composting for Management of Farm Mortalities: A Review,” Kalbasi, A; Mukhtar, S; Hawkins, S E; Auvermann, B W, http://www.redorbit.com/news/science/263634/carcass_composting_for_management_of_farm_mortalities_a_review/, October, 2005

small compounds, soft tissue decomposes, and bones soften partially. In the second phase, the remaining materials (mainly bones) break down fully and the compost turns to a consistent dark brown to black soil or “humus” with a musty odor containing primarily non-pathogenic bacteria and plant nutrients. Carcass composting systems require a variety of ingredients or co-composting materials, including carbon sources, bulking agents, and biofilter layers.

Although specific site selection criteria may vary from state to state, a variety of general site characteristics should be considered. A compost site should be located in a well-drained area that is at least 90 cm (3 ft) above the high water table level, at least 90 m (300 ft) from sensitive water resources (such as streams, ponds, wells, etc.), and that has adequate slope (1-3%) to allow proper drainage and prevent pooling of water. Runoff from the composting facility should be collected and directed away from production facilities and treated through a filter strip or infiltration area. Composting facilities should be located downwind of nearby residences to minimize potential odors or dust being carried to neighboring residences by prevailing winds. The location should have all-weather access to the compost site and to storage for co-composting materials, and should also have minimal interference with other operations and traffic. The site should also allow clearance from underground or overhead utilities.

The California Department of Food and Agriculture’s Meat and Poultry Inspection Service^{125, 126} is responsible for commercial livestock carcass disposal (rendering) in the state as defined in section 18650-18677 of the California food and Agriculture Code.¹²⁷ The Meat and Poultry Inspection Service views rendering or transfer to a rendering collection as the only legal means of disposal for livestock carcasses leaving the owner’s property. Primarily, this is because it is the easiest way to control carcasses and, therefore, protect public and environmental health.

The California Department of Food and Agriculture does not itself regulate carcass disposal for animals that have not died from contagious diseases when the carcasses are disposed of on-site (on owner’s property).¹²⁸ That generally falls to local government—usually the county department of environmental health, although any agency tasked with public health or air (in case of incineration) or water pollution could get involved.

At the present time, it appears that responsibility for determining approved procedures for carcass disposal, other than by rendering in the State of California, tends to travel downhill to county departments of public health. Most of these are too busy dealing with other genuine problems to invest staff time that would be required to devise policies specifically for this particular issue. This pretty well leaves owners of livestock that have made unplanned departures

¹²⁵ <http://www.cdfa.gov/ahfss/mpi/index/htm>

¹²⁶ http://ucce.ucdavis.edu/counties/ceglenn/newsletterfiles/Land_and_Livestock_News956.PDF

¹²⁷ <http://caselaw.lp.findlaw.com/cacodes/fac/18650-18677.html>

¹²⁸ In the special case of animals suspected of succumbing to contagious disease, CDFA *does* regulate on-site carcass disposal. This is how the California Food and Agriculture Code reads: 9141. Any person that has the care or control of any animal that dies from any contagious disease shall immediately cremate or bury the animal; 9142. An animal which has died from any contagious disease shall not be transported, except to the nearest crematory. The transportation of the animal to the crematory shall be pursuant to such regulations as the director may adopt. 9143. An animal which has died from any contagious disease shall not be used for the food of any human being, domestic animal, or fowl.

with no clear options and an ambiguous threat of prosecution if a neighbor is alarmed by the ad-hoc solution.

Because many people are losing access to rendering services, we need to develop some responsible alternatives. The difficulty in devising those alternatives lies in finding a path through the tangle of regulations that the numerous health and environmental agencies have been tasked with implementing.

Biofuel

Biodiesel derived from animal rendering is on the rise.

Until recently, a food supplement for livestock was about the only use for grease. With the advent of biodiesel, however, a whole new market has emerged. The nation's largest rendering company, Darling International, announced plans last fall to erect a biodiesel facility in San Francisco, and is building a 10-million-gallon biodiesel plant in Vernon, CA. They hope biodiesel will re-label the most repellent form of recycling (i.e., rendering) with a term anybody would love: "green." To many in the industry "green" is a new buzzword that's as meaningless as "organic." Convincing the industry's critics will be even harder because they are not only thinking about making biodiesel from old grease but interested in getting a tank of gas from a cow.

As it turns out, about 40 pounds of good ground beef heated to 250 degrees will produce enough tallow to make a gallon of biodiesel. The process is insanely wasteful if cattle are raised for it alone; you'd need to boil an entire cow to fill your Chevy. Yet there's no shortage of cow remnants in slaughterhouses, and U.S. production of biodiesel from renderers has grown from 78,000 metric tons in 2007 to 400,000 metric tons in 2008.¹²⁹

This approach is growing as shown by Amtrak's Beef-Powered Train¹³⁰

"Compared with its ultramodern counterparts in Europe and Japan, Amtrak is not a font of innovation. But on its Heartland Flyer—a daily service between Oklahoma City and Fort Worth, Texas—Amtrak is taking tentative steps toward a greener, low-carbon future. Since spring, the Heartland Flyer has been running on 20% biodiesel rather than the carbon-heavy diesel fuel on which Amtrak's other trains—with the exception of the electric Acela Express—currently operate. The biodiesel reduces air pollution and helps cash-strapped Amtrak save on fuel. And appropriately for a train in cow country, the biodiesel is made from rendered cattle fat. Biodiesel from beef burns cleaner than plant biodiesel, though it may not be scalable outside the beef belt."

Each year, North American renderers turn an average of nearly 60 billion pounds of perishable waste from livestock and poultry processing and supermarket and restaurant operations, into value-added products. In a world without renderers, used restaurant greases and animal carcasses—the bones, blood, viscera, feathers, fats, and any other part of the cow, hog or bird

¹²⁹ "The Other Recycling Business," Dave Gardetta, LA Mag, <http://www.lamag.com/article.aspx?id=14072&page=1>, April 2009

¹³⁰ "Amtrak's Beef-Powered Train," Bryan Walsh, Time, http://www.time.com/time/specials/packages/article/0,28804,2029497_2030622,00.html, November 11, 2010

many of us would consider inedible—might be dumped into landfills. Instead, renderers find opportunity in that waste and produce goods ranging from edible tallow or lard to livestock rations such as meat-and-bone meal, blood meal, feather meal and more. The biggest market for rendered goods is the livestock feed market, although many pet foods also contain rendered products. Exports are large too. Last year the United States exported 20 percent of its rendered goods.

Two broad categories of renderers exist today: Captive or packer renderers, who render the inedible materials they produce in their slaughter operations; and independent renderers, who buy fats, used restaurant grease, dead stock and other carcass remains from livestock producers, packing plants, butcher shops and elsewhere. According to Tom Cook, president of the National Renderers Association, captive renderers represent a minority of the rendering business—only 7 percent to 8 percent. The rest are the independent renderers.

Billions of pounds of animal byproduct and waste grease are recycled by North American renderers every year but only a fraction of that material is first-use animal fats and recovered cooking oils. The amount of total fats and oils production is roughly 13 billion pounds, 2.5 billion to 3 billion pounds of which is recovered cooking oils. Thus the majority of the material is bones, brain matter, spinal cords and all the parts of an animal few want to think about, which bring up issues of disease and infection. Mad cow disease, listeria and avian influenza, to name a few, are always a concern and thus there is a code of practices reputable renderers follow.

It was also about 20 years ago when they began investigating the potential for making biodiesel from animal fats. Real or not, there is a perception that biodiesel from animal fats is not as good as soy biodiesel.

Animal-fat-derived biodiesel is often criticized for high cloud point, but what is less reported is that it has a higher cetane number, which means better ignition properties and reduced nitrous oxide emissions. Also, tallow biodiesel is comprised of saturated fatty acids making it inherently more stable.

In 2007, the U.S. Census Bureau began tracking the use of animal fats and greases in biodiesel production. According to the bureau, 173.1 million pounds of animal fats and greases were used in 2007 for U.S. biodiesel production—about 4 percent of the total feedstock required to make the 500-plus million gallons produced last year. While animal fats and greases made up 4 percent of U.S. biodiesel feedstocks, when looked at conversely, the U.S. biodiesel industry consumed approximately 2 percent of total U.S. production of fats and greases last year.

There are all kinds of influences on animal fat markets and pricing. As far as using fats for biodiesel goes, it's impacted by the price of crude oil so when that's up the substitutes are up—including rendered products—but our biggest use is still animal feed, so we're also impacted by the use of corn, soybeans and so on.

All of these markets are volatile. On Sept. 22, 2008, the United States saw the biggest one-day jump, \$16 a barrel, in crude oil prices. Crop and livestock markets are volatile too. If more cattle come to market there'll be a down-tick in tallow, and a different environmental law in Indonesia

might mean a big uptick in palm. The high cost of grain and soybeans this year may translate into less available animal fats next year. High feed prices could force livestock producers to cut back on the number of cattle or pigs they are going to feed. That makes a little less raw material for to render. Then there are trends that move more animal fats into the marketplace. Trends like more centralized meat cutting and case-ready consumer products make it more likely those trim fats and waste products will end up at rendering facilities rather than a landfill. So despite a short-term drop in animal production because of feed prices, overall there'll be growth in these rendered fats being available.¹³¹

*Offal sales—Offal spot prices*¹³²

USDA BY-PRODUCT DROP VALUE (STEER) FOB CENTRAL U.S.

The hide and offal value from a typical slaughter steer¹³³ for November 11, 2010 was estimated at 11.81 per cwt live, up 0.03 when compared to Wednesday's (November 10, 2010) value.

TODAY'S CALCULATIONS FOR BY-PRODUCT VALUE (STEER)

	<i>Lbs</i>	<i>Price</i>	<i>Change Prv/Dy</i>	<i>Value</i>
Steer hide, butt brand/Pc	5.21	72.50	-	5.47
Tallow, edible	1.20	37.75	-	0.45
Tallow, packer bleachable	4.50	41.25	0.50	1.86
Tongues, Swiss #1 0-3%, exp	0.24	220.00	-	0.53
Cheek meat, trmd	0.32	124.00	-0.25	0.40
Head meat	0.13	97.50	-	0.13
Oxtail, selected	0.24	225.00	-	0.54
Hearts, reg, bone out	0.38	61.00	-	0.23
Lips, unscalded	0.13	125.00	-	0.16
Livers, slcted, export	0.96	65.00	-	0.62
Tripe, scalded edible	0.65	58.00	-	0.38
Tripe, honeycomb bleached	0.15	135.00	-	0.20
Lungs, inedible	0.47	3.25	-	0.02
Melts	0.14	3.75	-	0.01
Meat bone ml, 50% blk/ton	3.70	335.00	-	0.62
Blood meal, 85% blk/ton	0.60	620.00	-	0.19
Totals:	19.02			11.81
Dressed equivalent basis (63% dress):				18.75

Table 27—USDA Calculations for By-product Value (Steer)

****HIDE WEIGHT ADJUSTED TO REFLECT SEASONAL CHANGE****

The average value of hide and offal for the four days ending Thu, Nov 11, 2010 was estimated at 11.66 per cwt., up 0.06 from last week and up 2.63 from last year.

¹³¹ "The Skinny on Fats," Ron Kotrba, Biodiesel Magazine,

http://www.biodieselmagazine.com/article.jsp?article_id=2879&q=&page=all, November 2008

¹³² Source: USDA Market News, Des Moines, IA 24 Hour recorded market information 515-284-4830 515-284-4830 www.ams.usda.gov/LSMarketNews1530C, mds/md, http://www.ams.usda.gov/mnreports/nw_ls441.txt

¹³³ Typical slaughter steer weighs 1,325 pounds.

USDA BY-PRODUCT DROP VALUE (CATTLE)

The hide and offal value from typical fed cattle (steers and heifers)¹³⁴ for today was estimated at 12.07 per cwt live, up 0.01 from Wednesday's value.

	<i>Lbs</i>	<i>Price</i>	<i>Change Prv/Dy</i>	<i>Value</i>
Cattle hide/Pc	5.11	73.00	-0.25	5.73
Tallow, edible	1.20	37.75	-	0.45
Tallow, packer bleachable	4.50	41.25	0.50	1.86
Tongues, Swiss #1 0-3%, ex	0.24	220.00	-	0.53
Cheek meat, trmd	0.32	124.00	-0.25	0.40
Head meat	0.13	97.50	-	0.13
Oxtail, selected	0.24	225.00	-	0.54
Hearts, reg, bone out	0.38	61.00	-	0.23
Lips, unscalded	0.13	125.00	-	0.16
Livers, slcted, gall off,e	0.96	65.00	-	0.62
Tripe, scalded edible	0.65	58.00	-	0.38
Tripe, honeycomb bleached	0.15	135.00	-	0.20
Lungs, inedible	0.47	3.25	-	0.02
Melts	0.14	3.75	-	0.01
Meat bone ml, 50% blk/ton	3.70	335.00	-	0.62
Blood meal, 85% blk/ton	0.60	620.00	-	0.19
Totals:	18.92			12.07
Dressed equivalent basis (62.9% dress):				19.19

Table 28—USDA Calculations for By-product Drop (Cattle)

¹³⁴ Ibid, Typical slaughter cattle weighs 1,275 pounds

Definition

Mobile slaughter unit: A mobile slaughter unit (MSU) is a self-contained slaughter facility that can travel from site to site.

Purpose

This guideline is intended for owners and managers of a new or existing red meat or poultry MSU who want their establishment to come under Federal inspection and continue operations in accordance with Food Safety and Inspection Service (FSIS) regulations. MSU operators are subject to the same regulatory requirements that apply to a fixed (“brick and mortar”) facility. This guideline includes the procedures necessary to receive a Federal grant of inspection, unique concerns that may arise with mobile slaughter units, and links to review regulatory requirements and resources.

Advantageous of Mobile Slaughter

The meat and poultry industries have become increasingly consolidated, while consumer interest in locally grown and specialty products has continued to expand. The industry consolidation has resulted in a lack of U.S. Department of Agriculture (USDA) or State-inspected establishments available to small producers of livestock and poultry in some remote or sparsely populated areas. These small producers often serve the needs of their community and the growing demand for forage-fed, natural, and organic meat and poultry products. MSUs can serve multiple small producers in areas where slaughter services might be unaffordable or otherwise unavailable. Therefore MSUs can help small producers meet this demand, expand their businesses and create wealth in rural communities.

The advantages of a MSU versus a fixed structure include lower processing costs, reduced stress on animals, lower capital investment, and less resistance from municipalities and neighbors.

What is Needed to Operate a MSU under Federal Inspection

A. Grant of Inspection

Contact the District Office (DO) that has jurisdiction over the geographic area in which you will primarily operate the MSU. The DO will send you an information packet and an Application for Federal Meat, Poultry or Import Inspection, FSIS Form 5200-2. A list of DO locations and contact information is available (see [http://www.fsis.usda.gov/Contact Us/Office Locations & Phone Numbers/index.asp](http://www.fsis.usda.gov/Contact%20Us/Office%20Locations%20&%20Phone%20Numbers/index.asp)).

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http://www.google.com/url?sa=t&source=web&cd=1&sqi=2&ved=0CByQFjAA&url=http%3A%2F%2Fwww.fsis.usda.gov%2FPDF%2FCompliance_Guide_Mobile_Slaughter.pdf&ei=THFhTeL1EYS-sQPHn_ShAw&usg=AFOjCNE7ZVxF8E0JFu4EBryJ00y-OXR2wA

There are seven basic steps required for obtaining Federal meat and poultry inspection in the Federal Grant of Inspection Guide (see <http://www.fsis.usda.gov/Regulations&Policies/GrantofInspectionGuideline/index.asp>).

By clicking on each bullet heading under the Steps Required for Obtaining Federal Meat and Poultry Inspection, you will see a detailed description of each step, including regulatory citations, forms, and sample forms.

The steps are:

- 1) File an Application for Inspection
- 2) Facilities Must Meet Regulatory Performance Standards
- 3) Obtain Approved Labels or Brands
- 4) Obtain Approved Water Source Letter
- 5) Obtain Approved Sewage System Letter
- 6) Provide a Written Standard Operating Procedure for Sanitation
- 7) Provide a Written Hazard Analysis and HACCP Plan

Only the application for a Federal grant of inspection is to be submitted to the DO. All other documents relative to the above list are to be maintained on file at the facility and made available for review by inspection program personnel (IPP) upon request. DO representatives are available to assist you with the application process and to answer any additional questions you might have concerning regulatory requirements.

Upon receipt of your application and completion of all preliminary items, a designee of the DO will review the MSU. If all documentation and the facility comply with regulatory requirements, then a conditional grant of inspection will be issued to allow you 90 days to validate your HACCP program.

Operating in Several Districts:

For a MSU that will operate in more than one district, the owner is to first file an application for inspection in the Headquarters district in which the unit will primarily operate. The Headquarters DO will assign the primary establishment number (e.g. Est. 00). A separate application is then sent by the MSU owner to each additional district in which operations will be conducted. The remaining districts will use the same establishment number, but with an additional alphabetical suffix (e.g. 00 A, 00 B, etc.) that identifies the establishment when it operates within that specific district. Plant profiles in each district will record that the MSU is “doing business as” 00, 00 A, 00 B.

The Headquarters DO may designate a liaison or case specialist to coordinate information sharing between districts regarding MSU activities and regulatory compliance trends. This will also facilitate food safety assessments which will be the primary responsibility of the Headquarters DO. (A food safety assessment

considers all food safety aspects that relate to an establishment and its environment, the nature and source of all materials received, and the plant's processes and products.)

The grant holder is to ensure that IPP have access to the MSU at all times whenever a request for access is made, in accordance with the Federal Meat Inspection Act, Sec. 606 ("access at all times, day or night, whether the establishment be operating or not") and the Poultry Products Inspection Act, Sec. 11 ("access to their places of business and opportunities to examine...").

Scheduling:

Every time the MSU moves to a different location, and before conducting any slaughter operations, the respective DO with oversight of that location will be notified by the MSU operator. FSIS realizes that ordinary schedules described in the regulations may not be applicable to most MSUs. However, the MSU operator needs to provide to any district in which he or she will operate a schedule of days and hours of operation in accordance with Title 9 of the Code of Federal Regulations (9 CFR) 307.4(d)(1) for meat or 381.37(d)(1) for poultry. The operations schedule needs to be provided as much in advance as possible, allowing adequate time for the DO to arrange staffing and inspection procedure schedules necessary for FSIS services. At least two to four weeks advance notice is recommended, depending upon the degree of predictability and consistency of MSU operations. The submitted work schedule is to specify the daily clock hours of operations and lunch periods. Any changes in the schedule must be approved by the DO.

If the MSU will operate on a seasonal basis only, the dates of operation are to be specified for the DO. Voluntary suspension of operations to cover temporary inactive periods not to exceed 120 calendar days can be requested in writing through DO channels.

NOTE: The staffing of mobile slaughter units may present a challenge to FSIS. It may be difficult for the Agency to find personnel to provide inspection at the location at which a unit intends to operate.

Thus, communication with the DO by the operator of the mobile unit is particularly important.

B. Sanitation Requirements

Meat and poultry establishments with a grant of inspection from FSIS are to conduct operations under all of the provisions of 9 CFR Part 416--Sanitation (see A detailed explanation of the sanitation regulations, including methods already proven to meet the regulatory requirements, is in the Sanitation Performance

Standards Compliance Guide (see [http://www.fsis.usda.gov/Regulations & Policies/Sanitation Performance Standards/index.asp](http://www.fsis.usda.gov/Regulations%20&%20Policies/Sanitation%20Performance%20Standards/index.asp)).

1. Sanitation Performance and Unique Considerations for MSUs

a. Water

In order to receive a grant of inspection all Federal establishments must provide FSIS personnel with documentation certifying that the supply of water, no matter what the source, complies with the National Primary Drinking water regulations (40 CFR Part 1410). The MSU may operate at a location where it can directly utilize either a municipal water supply or private well water. Alternatively, it is permissible to transport water in a tank to the slaughter location as long as there is a water report certifying the potability of the water source. This documentation needs to be made available for FSIS review at all operational locations before initiating slaughter activities at that specific site. For a private well, this documentation is to be renewed semiannually for any recurring slaughter location (e.g., a specific ranch or farm where the MSU operates at various times throughout the year). Some MSUs will be working in conjunction with a FSIS inspected (official) fabrication facility where they obtain their water. In all cases, the availability of documentation certifying that water sources are potable is a continuing requirement. Water supply requirements are covered in the sanitation regulations in 9 CFR 416.2(g)(1). IPP will verify that the MSU meets these requirements in accordance with FSIS Directive 5000.1(see <http://www.fsis.usda.gov/OPPDE/rdad/FSISDirectives/5000.1Rev3.pdf>).

b. Sewage and Waste Water Disposal

The MSU operator is to provide FSIS with a letter of approval from the local health authority for any specific slaughter site. A MSU will usually not have traditional sewage facilities unless there is access to a private septic system provided at the slaughter location. Some MSUs may have a holding tank and will haul waste water for discharge at a MSU docking station. Alternatively, waste water disposal might be adapted for the specific situation. For example, blood and waste water might be dispersed on the producer's property well away from any stream or drainage, provided the local health authority permits this. In any case, the MSU operator is to provide a letter from the local health authority relating to waste water handling at any specific operational site. This is required to obtain and uphold terms of the grant.

c. Grounds and Facilities

The walls, floors, and ceilings of the MSU are to be built of durable materials impervious to moisture which can be cleaned and sanitized

as necessary to prevent product adulteration or creation of insanitary conditions (9 CFR 416.2(b)(1 and 2)). Adequate heat and insulation will help prevent freezing of water pipes during cold weather operation.

The operator is to maintain the MSU and implement a program to prevent harborage or entry of pests. Methods to prevent pest entry could include: 1) Keep doors and windows closed as much as possible. 2) Use high output fans to prevent entry of flying insects. 3) Spray and bait for flies prior to the day of slaughter. 4) Apply a spray-on surfactant or a mixture of water and mineral oil to the hide of livestock before skinning to reduce the risk of flies contaminating edible product. 5) Control of rodents around docking stations or any other operational areas, and where the MSU will be stored during non-operational hours.

Pest control substances must be approved by the Environmental Protection Agency (EPA) for use in food processing environments and be used in a manner that does not adulterate product or create insanitary conditions. Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), EPA reviews pesticide formulation, intended use, and other information; registers all pesticides for use in the United States; and prescribes labeling, use, and other regulatory requirements to prevent unreasonable adverse effects on the environment, including humans, wildlife, plants, and property. Any meat or poultry establishment using a pesticide must follow the FIFRA requirements.

The grounds immediately surrounding the MSU operational site are to be maintained to prevent creation of insanitary conditions that could lead to adulteration of product. Positioning the MSU on a well-draining concrete or gravel pad can be helpful for controlling manure, mud, pooling water, and other sanitation problems. Bleeding animals on a sloped concrete pad equipped with lines to a drain field is recommended, or alternatively, a gravel bed can allow blood and water to drain and prevent pooling. The position of doors into the MSU should be considered relative to prevailing winds to help control airborne dust, agricultural chemicals, or odors associated with the operational site. If a combustion engine generator is used as a power source for the MSU, then exhaust emissions should not create odors which affect sanitary operation of the MSU.

Adequate ventilation in the small space of a MSU is of utmost importance to control odors, vapors, and condensation to prevent adulteration of product (9 CFR 416.2(d)).

d. Sanitary Facilities and Office Accommodations for Inspection Personnel

Hand washing and toilet facilities are required for IPP and MSU employees (9 CFR 416.2(h)(1-2)). While these provisions may not be located inside the MSU, they should be available within a “reasonable” distance. For example, portable toilets and hand sanitizer outside the MSU with hand washing facilities available inside the unit would be considered reasonable accommodations. Some MSUs will operate on the producer’s property and farm toilet facilities may suffice if within a reasonable distance. Other MSUs may operate in close proximity to a public building, or an associated official fabrication facility, where these accommodations are located. In all cases, the DO will determine what constitutes “reasonable” accommodations.

Inspectors need not have an official office within a MSU if it operates as part of a combination or patrol assignment. Alternatively, the USDA inspector may have access to an office in an associated official fabrication facility. Any other arrangements for the equivalent of office space and required facilities in accordance with 9 CFR 307.1 and .2, or 381.36, are acceptable if approved by a designee of the DO. However, it is recommended that the MSU provide a desk with adequate lighting, chair, cooler or refrigerator space for storing laboratory samples (e.g., residue or microbiological specimens) collected by IPP, and a cabinet that can be padlocked for storing USDA brands and official documents. The DO will determine the logistics on a case-by-case basis for IPP phone communications (e.g., use of cell phones) as well as arrangements for FSIS shipment of laboratory samples (either directly from the MSU operational site or by means of inspector transport of samples to a central package pick-up location).

2. Sanitation Standard Operating Procedures (Sanitation SOPs)

A federally inspected MSU is to comply with 9 CFR 416.11 and 416.12 requiring establishments to develop, implement, and maintain written standard operating procedures for sanitation. All recordkeeping requirements of 9 CFR 416.16 apply to a MSU. Records are to be kept in the MSU and made available to IPP upon request.

Additional information regarding Sanitation SOPs is available through Commonly Asked Questions from Small and Very Small Plants on Sanitation Standard Operating Procedures (see <http://www.fsis.usda.gov/Help/FAQsSSOP3/index.asp>).

C. Hazard Analysis and Critical Control Point (HACCP) Systems

A written hazard analysis and slaughter HACCP plan tailored to your MSU will need to be developed by an individual trained in HACCP principles before you will be granted Federal inspection (9 CFR 304.3(b) or 381.22(b)), and thereafter you will need to implement and maintain them in order to continue operations.

A hazard analysis is the process used to determine the food safety hazards reasonably likely to occur in the production process and to identify the measures that the establishment can apply to control those hazards. Whenever a hazard analysis identifies a food safety hazard that is reasonably likely to occur, a written HACCP plan must be developed. Typical slaughter hazards might include, but are not limited to: 1) Control of feces, ingesta, or milk contamination; 2) Disease-producing microorganisms (*E. coli* O157:H7; *Salmonella*); and 3) Chemical, pesticide, or drug residues.

Chilling and cold storage of product may occur within the MSU or in an associated fabrication facility, depending upon hazard analysis decisions. The MSU operator is not restricted to producing only whole or partial carcasses, but any further processing activities are to be included in the HACCP plan and associated supporting documents. Additionally, all 9 CFR 417.5 recordkeeping requirements apply to a MSU.

The hazard analysis and HACCP plan for a MSU need not be overly complicated. However, a MSU operator may want to utilize an outside consultant who is not employed by the establishment to develop its food safety system. The FSIS Outreach office (see <http://www.fsis.usda.gov/AboutFSIS/OOEET/index.asp>) can provide information on HACCP workshops, as well as a self-study guide and video. They can also assist in directing you to contacts for the Small Business Regulatory Enforcement Fairness Act (SBREFA). Additionally, each State assigns HACCP Coordinators to assist establishments with the development of HACCP programs (see [http://www.fsis.usda.gov/contact_us/state_haccp_contacts & coordinators/index.asp](http://www.fsis.usda.gov/contact_us/state_haccp_contacts&coordinators/index.asp)).

D. Slaughter Regulatory Concerns

1. Meat (Livestock)—MSU operators are to comply with all livestock slaughter regulations described in 9 CFR Parts 307 through 314. This includes microbiological testing requirements such as generic *E. coli* testing (9 CFR 310.25(a)). Humane Slaughter of Livestock is addressed in 9 CFR Part 313. FSIS recommends that slaughter facilities, including MSUs, use a systematic approach to humane slaughter, with a focus on treating livestock in a way that includes minimizing excitement, discomfort, and accidental injury when unloading or driving animals. The MSU operator is responsible for meeting all regulatory requirements for humane slaughter of livestock and should carefully consider the design of any holding pens, driveways, and ramps available at any specific operational site, as well as the methods used to

adequately restrain animals and produce immediate insensibility upon stunning. In most circumstances, if a firearm is used then the head cannot be saved for edible product, except for the tongue.

FSIS authority for enforcing humane handling requirements commences when animals begin being handled by either the MSU operator or livestock owner as they are staged for slaughter. FSIS Directives 6900.1 and 6900.2 contain additional information on humane handling (see <http://www.fsis.usda.gov/OPPDE/rdad/FSISDirectives/6900.1Rev1.pdf> <http://www.fsis.usda.gov/OPPDE/rdad/FSISDirectives/6900.2Rev1.pdf>)

Each MSU operational site is to provide an ante-mortem pen for IPP to observe live animals at rest and in motion, as well as a holding pen for animals designated as U.S. Suspects. Any diseased or disabled animals requiring further inspection are to be provided a covered pen sufficient to protect them from adverse weather conditions.

Livestock carcasses of varying species, or custom slaughtered carcasses held and transported in the MSU, are to have adequate separation or protective wraps in order to minimize potential cross-contamination caused by carcass-to-carcass contact. Inedible articles are to be denatured and handled in accordance with 9 CFR 325.11 and 325.13.

2. Poultry—MSU operators are to comply with all poultry slaughter regulations in 9 CFR Part 381, including slaughter in accordance with good commercial practices as described in 9 CFR 381.65(b). Generic *E. coli* testing requirements apply in accordance with 9 CFR 381.94(a). Inedible articles are to be denatured and handled in accordance with 9 CFR 381.95 and 381.193.
3. Special labeling claims (such as “all natural”) for meat and poultry products require prior-approval by the Labeling and Policy Development Division (LPDD) (ph: 301-504-0878, FAX: 301-504-0873). You are to submit to this office a copy of the label plus supporting documentation or statements to substantiate any special claims. Links are included in the www.fsis.usda.gov Website for: *Animal Raising Claims, Natural and Organic Claims, and “Certified Organic”*. (see http://www.fsis.usda.gov/Regulations & Policies/claims_guidance/index.asp).
4. Proper carcass and offal disposal may be accomplished in a variety of ways. Please contact your local health regulatory authority for more information about alternatives in your area. For example, denatured meat or poultry offal might be allowed to remain on the farm to be composted for use as a soil amendment when permitted by local regulations. Many producers prefer this practice because soil nutrients will be increased, and the higher cost of rendering will be avoided.

5. If FSIS retained product held for further examination is to be transported in the MSU to an official facility for a Public Health Veterinarian's determination of product disposition, then the establishment needs to obtain FSIS approval of the means used to secure the carcass and parts in accordance with 9 CFR 307.2(h) and 310.3, or 381.77.
6. Exotic animals (e.g., bison, elk) or poultry (e.g., migratory waterfowl, game birds) slaughtered under voluntary Federal inspection are to comply with 9 CFR Part 352 or Part 362, respectively.

E. Additional Information

The Niche Meat Processor Assistance Network, sponsored in part by USDA's Rural Development Agency and the Cooperative State Research, Education, and Extension Service (CSREES) provides additional helpful information about designing a unit, workforce management issues, and other non-regulatory information (see <http://www.extension.org/pages/MobileSlaughter/ProcessingUnits>).

APPENDIX 3—STATE OF CALIFORNIA REGULATORY ENVIRONMENT

California Entry Requirements for Livestock¹³⁶

A. An **Interstate Livestock Entry Permit** is required for the following classes of cattle:

- Intact breeding female cattle
- Beef bulls over 18 months of age
- Dairy bulls over 6 months of age
- Breeding cattle from states that are not tuberculosis or brucellosis “Free”

Requests for permits must be made before movement and are valid for 15 days. A veterinarian from the state of origin may request the permit. Please call the Permit Line at (916) 651-6278 to request an entry permit.

B. A Certificate of Veterinary Inspection (CVI) is required for:

- Female cattle over 4 months of age
- Dairy bulls over 6 months of age
- Beef bulls over 18 months of age
- Breeding cattle from states that are not tuberculosis or brucellosis “Free”
- Any cattle requiring an official test

C. All cattle moving with a CVI require **Official Identification** on the certificate. Below are acceptable methods of ID:

- Official brucellosis calf-hood vaccination tags
- State or federal approved tags
- “Premises Identification Number” tattoos
- Registration tattoos
- Any other device approved for use by CDFA or USDA
- Registered brands may be substituted for official identification under certain circumstances.

D. **Official Brucellosis Calf-hood Vaccination** is required for all female cattle over 4 months. Proof of the Brucellosis vaccination, must be indicated by a legible tattoo.

E. All sexually intact cattle over 18 months of age (or that have calved) from states that are not “Free” require a negative **Brucellosis Blood Test** within 30 days of entry and individual identification on official forms.

Exception:

Cattle originating in Certified Free Herds when the herd number and date of last negative whole herd test are recorded on CVI.

¹³⁶ http://www.cdfa.ca.gov/ahfss/Animal_Health/pdfs/Cattle_livestock%20movement_jan2010.pdf

- F. Bulls over 18 months of age require a negative Trichomonosis Test. The sample must be collected 10 days after last contact with sexually mature cows and within 60 days prior to entry into California.

Exceptions:

- *Bulls for exhibition, confined to location that will return to the state of origin.*
- *Bulls for artificial insemination at a certified collection facility.*

- G. A **Tuberculosis Test** is required for the following classes of cattle:

- Dairy breeding cattle over 6 months of age from any state require a negative TB test within 60 days prior to entry
- Beef breeding cattle over 6 months of age originating from states that are not “Free” require a negative TB test within 60 days prior to entry
- Contact Animal Health Branch for cattle coming from **Michigan** and **Minnesota**.

Exception:

- *Cattle from Accredited Free Herds when the herd number and date of last negative whole herd test are recorded on CVI.*

Identification and Record Requirements for Moving Cattle¹³⁷

Information for Dealers, Saleyards and Owners

Cattle moving within California may be inspected en route or after arrival, and must meet brand inspection requirements. Documents must be presented for inspection upon request of a government official. Female dairy cattle and female beef cattle sold for breeding must be vaccinated for **brucellosis** and be tattooed in the right ear with the official brucellosis tattoo.

California cattle dealers must:

- Be licensed with the California Department of Food and Agriculture, Market Enforcement.
- Maintain records of each animal sufficient to identify the animal, the seller, and the buyer for two (2) years, and be available for examination and copying upon request by the Department.

Cattle moving into California require:

- ***Entry permits***—for all female cattle, dairy bulls more than 6 months and beef bulls more than 18 months of age. No diversion is allowed from the permitted destination. Each load must have a copy of the documents required for entry to present for inspection upon request.
- ***Certificate of Veterinary Inspection***—for dairy females more than 4 months of age, beef females and dairy bulls more than 6 months of age, and beef bulls more than 18 months of age.

¹³⁷ http://www.cdffa.ca.gov/ahfss/Animal_Health/pdfs/Final_Identification_record_keeping_requirements.pdf

- **Approved identification**—for all cattle tested and all cattle two (2) years of age or over, except steers, spayed heifers, and cattle moved during normal ranching operations without change of ownership.
- **Brucellosis vaccination**—for female cattle, unless entering for immediate slaughter or feeding in a registered feedlot before slaughter.
- **Brucellosis test**—for cattle from states that are not brucellosis “Class Free”.
- **Trichomonosis test**—for bulls 18 months of age and over.
- **Tuberculosis test**—for all dairy breeding cattle more than 6 months of age, and beef breeding cattle more than 6 months of age from states not “Class Free”.

Federal interstate requirements for cattle:

- Have approved identification:
 - An approved eartag or backtag
 - A brand registered with an official brand agency and accompanied by an official brand inspection certificate
 - Registered purebred animals not moving to slaughter may be identified in a manner acceptable to the breed association.
- Documents, signed by the owner/shipper, stating:
 - Origin
 - Destination
 - Number of animals
 - Name and address of owner
 - Name and address of previous owner*
 - Name and address of the shipper
 - Identifying numbers. The numbers may be maintained by the approved stockyard if cattle move directly from the yard to a recognized slaughtering establishment.
- Documents shall be delivered with the cattle to the management of the stockyard, slaughtering establishment or consignee, and shall be available for inspection upon request by a government representative at any time within the year from the date of their delivery.

Cattle moved interstate from a farm directly to a recognized slaughtering establishment (or approved stockyard for sale to a recognized slaughtering establishment):

- May be individually identified and the numbers recorded on the establishment’s receiving document **upon arrival**, if accompanied by documents signed by the owner/shipper, stating:
 - Origin
 - Destination
 - Number of animals
 - Name and address of owner
 - Name and owner of previous owner*
 - Name and address of the shipper.
- May be identified by a registered brand and accompanied by a brand inspection certificate.

- Do not require individual identification if the slaughtering establishment maintains records of ownership by lot.
 - Do not require an owner-shipper statement when moved from a farm where they have been for more than four months, and the farm has not had any cattle from any other premises within those four months.
- *If ownership changed in the prior 4 months

Meat and Poultry Inspection¹³⁸

The Meat and Poultry Inspection Branch (MPI) licenses and inspects the following meat and poultry establishments that are exempt from federal (USDA) inspection:

- Meat Processing Establishments that prepare meat and poultry products by curing, smoking, drying, or rendering or who cook pork products for retail sales only, except products of fallow deer, which can be transported and sold in commerce.
- Custom Livestock Slaughterhouses that slaughter cattle, sheep, swine, goats and fallow deer raised or bought live by owners. The meat from cattle, sheep, swine and goats is used by the animal's owner, members of the owner's household, nonpaying guests and employees. It cannot be sold. Fallow deer meat can be transported and sold in commerce.
- Poultry Plants that slaughter species that don't require (non-amenable) federal inspection: rabbits; small game birds such as quail, pheasant, and partridge, or
 - Retail Poultry Plants that sell live poultry and slaughter them for customers or
 - Non-retail Poultry Plants that slaughter or process fewer than 20,000 poultry of all amenable species (chickens, ducks, geese, guineas, squab and ratites) or fewer than 5,000 turkeys a year.

The Branch trains, licenses, and evaluates Poultry Meat Inspectors (PMIs) who inspect poultry and rabbits in licensed poultry plants, Livestock Meat Inspectors (LMIs) who inspect livestock in licensed custom livestock slaughterhouses and Processing Inspectors (PIs) who inspect meat and poultry products in licensed retail meat processing establishments. PMI's, LMI's and PI's also enforce sanitation standards, pest control, humane handling and slaughter, inedible/condemned material control, marking and labeling and record-keeping requirements in licensed plants.

The Meat and Poultry Inspection Branch also licenses and inspects the following:

- Renderers who recycle animal carcasses, packinghouse waste and inedible kitchen grease into animal feed ingredients and inedible industrial fats, oils, and other products.
- Collection Centers used for temporary storage of animal carcasses, packinghouse waste and inedible kitchen grease before transport to a licensed rendering plant.
- Dead Animal Haulers who transport carcasses of dead livestock and horses.
- Pet Food Slaughterers who slaughter animals for use as pet food.
- Pet Food Processors who prepare fresh or frozen raw meat products for pet food.
- Importers of fresh or frozen raw meat, meat by-products, horsemeat, poultry meat or poultry meat by-products for pet food or horsemeat for human food.

The Branch registers transporters of inedible kitchen grease (IKG).

¹³⁸ http://www.cdffa.gov/ahfss/Meat_and_Poultry_Inspection/index.html

The Branch provides Import Inspection of slaughtered non–amenable poultry species shipped to California from other countries and reviews for approval or disapproval inspection systems of other states and foreign countries desiring to ship slaughtered non–amenable poultry species to California.

The Branch reviews sanitation and records at Federally Exempt Establishments (locker plants that cut, wrap and process meat from farm killed livestock; custom livestock slaughterhouses; poultry plants).

The Branch conducts Compliance Investigations into alleged violations of sections of the Food and Agricultural Code pertaining to the above activities.

Inspection Requirements¹³⁹

- Whenever cattle are sold or ownership is transferred.
- Prior to transportation out of any designated modified point-of-origin inspection area, for purposes other than sale or slaughter and no change of ownership is involved.
- Prior to transportation out of state.
- Upon entry into a registered feedlot.
- Prior to slaughter.
- Prior to release or sale from a public saleyard or public or private cattle sales market.
- Prior to transportation or movement from premises designated as quarantine, restricted, or isolated areas pursuant to Section 9565.

Documents Required When Cattle Are Being Transported Must Be Exhibited To Any Brand Inspector Or Peace Officer Upon Request

- When brand inspection is required, an original or supplemental brand inspection certificate must accompany the cattle.
- A Bill of Sale or Consignment (Yellow Slip) must accompany all cattle transported within the state when no brand inspection or saleyard outbidding is required.

¹³⁹ http://www.cdfa.ca.gov/ahfss/Livestock_ID/index.html#Inspection

SECTION III (to be completed for Import Inspection Activities)

21. IMPORT INSPECTION ACTIVITIES

<p>a. CARCASSES</p> <p><input type="checkbox"/> BEEF</p> <p><input type="checkbox"/> MEAL</p> <p><input type="checkbox"/> SWINE</p> <p><input type="checkbox"/> SHEEP</p> <p><input type="checkbox"/> GOATS</p> <p><input type="checkbox"/> EQUINE</p>	<p><input type="checkbox"/> VENISON</p> <p><input type="checkbox"/> OTHER (describe)</p>	<p>b. FRESH</p> <p><input type="checkbox"/> CUTS</p> <p><input type="checkbox"/> BONELESS MFG MEAT</p>	<p>d. COOKED BEEF</p> <p><input type="checkbox"/> RESTRICTED</p> <p><input type="checkbox"/> UNRESTRICTED</p>	<p>f. PROCESSED PRODUCTS</p> <p><input type="checkbox"/> FRESH/FROZEN</p> <p><input type="checkbox"/> HEATED</p> <p><input type="checkbox"/> DRIED/SEMI-DRIED</p>	<p>h. POULTRY (Parts)</p> <p><input type="checkbox"/> RAW</p> <p><input type="checkbox"/> COOKED</p> <p><input type="checkbox"/> OTHER POULTRY (describe)</p>
		<p>c. FROZEN MFG. MEATS</p> <p><input type="checkbox"/> CUTS</p> <p><input type="checkbox"/> BONELESS MFG MEAT</p>	<p>e. CONTAINERS</p> <p><input type="checkbox"/> PERISHABLE</p> <p><input type="checkbox"/> SHELF STABLE</p>	<p>g. POULTRY (Whole Carcass)</p> <p><input type="checkbox"/> RAW</p> <p><input type="checkbox"/> COOKED</p>	

SECTION IV (to be completed for Import and Domestic Inspection Activities)

22. List all persons responsibly connected with the applicant. Include all owners, partners, officers, directors, holders or owners of 10 per centum or more of voting stock, and employees in a managerial or executive capacity in the business. Notify the District Manager of any changes in the listing given.

NAME (TITLE indicates if partner, manager)	SOCIAL SECURITY NO.	DATE OF BIRTH	PLACE OF BIRTH (City and State)	PRESENT HOME ADDRESS (Street and Number, City, State, Zip Code)	HOLDER OF 10% OR MORE VOTING STOCK (If Any)	
					YES	NO
Mark Stetzill President	321-99-8877	12/12/1965	Riverside, CA	100 North State Street Minneapolis, MN 55444	✓	✓
James Morgan Vice-President	453-55-2233	09/01/1970	St. Joseph, MO	30022 Maple Court St. Paul, MN 55322	✓	
Paul Steinwick Treasurer	867-45-6341	02/22/1968	New York, NY	3022 Sunset Drive Ipswich, IA 50321	✓	
Richard Vickers Plant Manager	987-65-4321	05/29/1963	Albia, IA	903 North Vista Lane Newell, IA 50331		✓

23. Enter the name of each person listed under item 22 who has been convicted in any Federal or State court of any felony, or the name of each person listed under item 22 who has been convicted in any Federal or State court of more than one violation of any law, other than a felony, based upon the acquiring, handling, or distributing of unwholesome, mislabeled, or deceptively packaged food or upon the connection with transactions in food. Include the nature of the crime, the date of conviction and the court in which convicted. If none write "None".

None

24. List each conviction against the applicant (person, firm or corporation) in any Federal or State court of any felony. List each conviction against the applicant (person, firm or corporation) in any Federal or State court of more than one violation of any law, other than a felony, based upon the acquiring, handling, or distributing of unwholesome, mislabeled, or deceptively packaged food or upon the connection with transactions in food. Include the nature of the crime, the date of conviction and the court in which convicted. If none write "None".

None

25. SANITATION STANDARD OPERATING PROCEDURES HAVE BEEN DEVELOPED FOR THE ESTABLISHMENT IN ACCORDANCE WITH THE REGULATIONS. (Check) YES NO

26. APPLICANT HAS BEEN PROVIDED WITH A COPY OF THE PRIVACY ACT NOTICE (Check) YES NO

AGREEMENT AND CERTIFICATION: If inspection is granted under the application, I/we expressly agree to conform strictly to the Federal Meat Inspection Act (21 U.S.C. 601 et seq.), the Regulations Governing the Meat Inspection of the United States Department of Agriculture (9 CFR Part 301 et seq.), or the Poultry Products Inspection Act (21 U.S.C. 487 et seq.), and the Poultry Products Inspection Regulations (9 CFR 387 et seq.), or both I CERTIFY that all statements made herein are true to the best of my knowledge and belief.

WARNING: Persons willfully making false, fictitious or fraudulent statements or entries are subject to \$10,000 fine or imprisoned not more than five years or both as prescribed by Title 18 U.S. Code 1001.

This is an Equal Opportunity Program. If you believe you have been discriminated against because of race, color, religion, sex, national origin, age or handicap, write immediately to the Secretary of Agriculture or the Administrator, FSIS, Washington, D.C. 20250.

27. TYPED NAME OF PERSON SIGNING APPLICATION Paul Steinwick	SIGNATURE AND TITLE OF OWNER, PARTNER, OR AUTHORIZED OFFICER MAKING THIS APPLICATION	
	28. SIGNATURE	29. TITLE Treasurer
30. OFFICIAL NUMBER ASSIGNED/RESERVED EST _____ P. _____ I _____	31. IS THIS PLANT PRESENTLY UNDER STATE INSPECTION (Completed by District Office) <input type="checkbox"/> YES <input type="checkbox"/> NO	

TO BE COMPLETED BY USDA

32. DATE RECEIVED	33. DATE REVIEWED	34. THIS PLANT TO BE UNDER TALMADGE-AIKEN ACT <input type="checkbox"/> YES <input type="checkbox"/> NO
35. SIGNATURE OF DISTRICT MANAGER		36. DATE

Complete all sections. If a section is not applicable, enter "N/A" or "none". If additional space is needed for any item, attach a sheet and number the item.

- 1 Date of Application: Shall be the date on which the form is executed.
- 2 Type of Application: Check applicable block.
- 3 Type of Inspection Required: Check applicable block.
- 4 Exempted Activities: There are several possible entries:
 - a. Custom Slaughter (CS)
 - b. Custom Processing (CP)
 - c. Retail Exempt (includes restaurants) (RE)
 - d. Kosher (KO)
 - e. Islamic (IS)
 - f. Buddhist (BU)
 - g. Confucianist (CO)

An applicant can show one or any combination of the seven, if necessary.
- 5 Form of Organization: Check applicable block.
- 6 State Where Incorporated: Self-explanatory.
- 7 Date Incorporated: Show month and year.
- 8 Name and address of Applicant: Show official firm name and address. Enter Federal employee identification number in the space provided.
- 9 Area Code and Telephone Number: Self-explanatory.
- 10a. Location of Plant and Mailing Address if Different From Item 8: If the mailing address of item 8 is a P.O. Box number, show location of the plant by street, number, miles from town or highway, etc.
- 10b. Attach a Description of the Limits of the Establishment Premises that is Requested to be Under Federal Inspection: Self-explanatory.
11. Area Code and Telephone Number: Show plant's actual telephone number(s).
12. Name and Establishment Number(s) of Other Establishments Located in the Same Facility: Name of person(s) or firm name(s) and establishment number(s) which prepare products within the same facilities of the applicant identified in item 8.
13. Other Names Under Which Business will be Conducted: This refers to subsidiaries doing business under a different name than the applicant requesting inspection.

DIRECTIONS FOR COMPLETION OF FSIS FORM 5200.2 (Continued)

- * 14. **Day/Year Plant Will Operate: Self-explanatory.**
 - * 15. **Hours/Week Plant Will Operate: Self-explanatory.**
 - * 16. **Hours/Day Plant Will Operate: Self-explanatory.**
 - * 17. **Month and Year Plant will be Ready to Operate Under Inspection Program: Self-explanatory.**
- * There can be overlapping exempt and non-exempt reporting, e.g., an applicant may have in section 16, 8 hours exempt and 8 hours non-exempt. This does not necessarily mean the plant is scheduled to work 16 hours.
- 18. **Animals Slaughtered: Check applicable block(s).**
 - 19. **Fresh Meat or Ready-to-Cook Poultry to be Disposed of in Commerce: Check, applicable block(s)**
 - 20. **Prepared or Processed When Inspection is Inaugurated: Check applicable block(s) for Meat, Poultry, or Both under type of product. If the "Both" block is checked, indicate whether the activity is for "M", "P", or "B" for entries A through M.**
 - 21. **Import Inspection Activities: Fill in only if requesting for Import Inspection and then the application should be referred to International Programs. (Separate applications are needed for import requests and domestic requests.)**
 - 22. **List of Responsible Persons: Shall include person signing the application, owners, officers, directors, managers, or others in an executive capacity. Be sure to show name, title, social security number, date and place of birth, home address and check in the space provided concerning holding of stock.**
 - 23. **Person(s) Convicted of a Felony: Self-explanatory, if none, write none.**
 - 24. **Convictions Against the Applicants: Self-explanatory.**
 - 25. **Sanitation Standard Operating Procedures have been developed: Check applicable block.**
 - 26. **Privacy Act Notice: Check appropriate block.**
 - 27. **Person Signing Application: Applicant's name should be typed or printed.**
 - 28. **Signature: Applicant needs to sign in ink.**
 - 29. **Title: Title of applicant whose name appears in Blocks 26 and 27.**
 - 30. **Official Number Assigned/Reserved: District Manager will complete.**
 - 31. **Plant Presently Under State Inspection: District Manager will complete.**
- 32 through 36: To be completed by USDA.*

APPENDIX 5—FSIS FORM 7234.1 AND INSTRUCTIONS¹⁴¹

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0583-0092. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This form had been approved by OMB for web distribution. PAGE of

<p style="text-align: center;">U.S. DEPARTMENT OF AGRICULTURE FOOD SAFETY AND INSPECTION SERVICE</p> <p style="text-align: center;">APPLICATION FOR APPROVAL OF LABELS, MARKING OR DEVICE</p> <p>FSIS has determined that information provided in items 8, 9, and 10 is exempt from mandatory disclosure under the Freedom of Information Act 5 U.S.C. 552(b)(4). APPLICANT: See Page 2 for instructions.</p>	<p>1. AGENT NAME, ADDRESS, TELEPHONE NO. <i>(If using an Agent, complete this block; otherwise leave blank.)</i></p>	<p>2. FOR USDA USE ONLY</p>	<p>3. FOR USDA USE ONLY</p>	<p>4. ESTABLISHMENT NO. / FOREIGN COUNTRY <i>(If applicable)</i></p>
<p>5a. NAME OF PRODUCT</p>				<p>5b. HACCP PROCESS CATEGORY</p>
<p>6a. TYPE OF APPROVAL REQUESTED</p> <p><input type="checkbox"/> SKETCH <input type="checkbox"/> TEMPORARY</p> <p><input type="checkbox"/> EXTENSION OF TEMPORARY <i>If Using "Temporary" or "Extension of Temporary" Use Continuation Sheet</i></p>	<p>6d. WAS THE LABEL PREVIOUSLY APPROVED?</p> <p><input type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p>Date of approval: <input style="width: 50px;" type="text"/></p> <p>Prior approval number: <input style="width: 50px;" type="text"/></p> <p>Number of labels on hand: <input style="width: 50px;" type="text"/></p> <p>Number of days requested: <input style="width: 50px;" type="text"/></p>	<p>7a. AREA OF PRINCIPAL DISPLAY PANEL <i>(Square inches)</i>: <input style="width: 100%; height: 20px;" type="text"/></p> <p>7b. TOTAL AVAILABLE LABELING SPACE FOR ENTIRE PACKAGE <i>(Square inches)</i>: <input style="width: 100%; height: 20px;" type="text"/></p>	
<p>8. PRODUCT FORMULA</p>		<p><input type="checkbox"/> PCT <input type="checkbox"/> WEIGHT <i>(No Fractions)</i></p>	<p>9. PROCESSING PROCEDURES <i>(Approval of the sketch does not convey approval of the processing procedures)</i></p>	
<p>TOTAL <i>(Percent must total 100%)</i></p>				
<p>10. NAME AND ADDRESS OF FIRM <i>(Below and between dots)</i></p> <div style="border: 1px solid black; height: 60px; width: 100%;"></div>		<p>11. SIGNATURE OF APPLICANT OR AGENT</p>		<p>DATE</p>
		<p>12. CONDITIONS APPLYING TO USE OF LABELS OR DEVICE (FOR USDA USE ONLY)</p>		

FSIS FORM 7234-1 (09/01/2009)

REPLACES FSIS FORM 7234-1 (01/08/2008), WHICH MAY BE USED UNTIL EXHAUSTED.

¹⁴¹ <http://www.fsis.usda.gov/FSISForms/7234-1.pdf>

**CONTINUATION SHEET FOR APPLICATION FOR APPROVAL OF LABELS,
MARKING OR DEVICE (FSIS 7234-1)**

PRODUCT NAME

This sheet is being used for additional information required in Block:

INSTRUCTIONS FOR PREPARATION OF FSIS FORM 7234-1

Note: The following instructions should be typed unless otherwise noted.

A. PREPARATION OF APPLICATION

Submit two copies for each label application. One additional copy is needed for Foreign, Child Nutrition, Animal Production, or Organic Claims.

B. SUBMISSION OF LABELS

Sketches: Self Explanatory. (See 9 CFR 317.4 & 381.132)

Temporaries and Request for Extension. Actual label or color litho take off to be used. Quantity to Submit: Same as application (See above).

C. FOREIGN LANGUAGE

Labels printed in foreign languages must be accompanied by English language translation.

D. ASSEMBLY OF APPLICATION

Staple, with 1 staple only, page 1, page 2, etc., one copy each. Staple all copies of label to the back of application forms. If only page 1 is used, staple all copies together. Use as few staples as possible. (*Do not use paper clips*).

E. MAIL COMPLETE APPLICATION TO:

USDA, FSIS, OPPD, Labeling and Program Delivery Division Labeling Distribution Unit
5601 Sunnyside Ave., Stop 5273
Beltsville, MD 20705-5273

The following instructions relate to numbered items on form.

1. If using an Agent, provide the company name, address, and telephone number, otherwise leave blank.
- 2 & 3. Leave blank, for USDA use only.
4. Establishment No./Foreign Country (if applicable) - Self Explanatory.
- 5a. Name of Product. Use common or descriptive product name, i.e., "Frankfurter ,Cereal Added" or "Meat Patties in Gravy. (*Do not use trade brand names or coined names, such as "Joe's Corn Dogs" or "Joe's Sloppy Joes."*) If coined names such as "Corn Dogs" are used, also show true product name, such as "Batter wrapped Wiener."
- 5b. Provide HACCP process category for the product. See 9 CFR417.2(b) (1), Example, Heat Treated - shelf stable, Not heat treated-shelf stable etc.
- 6a & b. Type of Approval Requested. If temporary approval or extension, insert number of days requested and number of labels on hand. If previous approval, attach copy of application and label. Include specific reason(s) why requesting a temporary or extension and include information required in 9 CFR 317.4(f) (1) or 381.132(f) (1) on a separate sheet of paper. If using the electronic version of this form, use the continuation sheet. Be sure to include product name and block item.
- 7a. Area of Principal Display Panel (PDP). The PDP is the entire side of the package to which the label is affixed. See 9 CFR 317.2 (d) and 381 .116 (b).
- 7b. Total available labeling space in square inches for entire package.
8. Product Formula. List the ingredients by percent or weight in order of their predominance. If product consists of several components, e.g., a frozen dinner, list each component separately and indicate the percentage or amount of each component in the product. If additional space is needed, complete a separate sheet of paper. If using the electronic version of this form, use the continuation sheet. Be sure to include the

product name and number of the block item. Express all ingredients in the same units, i.e., do not list some in pounds and others in ounces.

Check whether weight or percent is used. *It is preferred percentages be used, and the total must equal 100 percent. If weights are used, show in pounds, kilograms or grams. (No gallons, pints, cups, teaspoons, etc.) The total must equal the weights of the individual units. (Example: Crust + Cheese + Sauce + Meat = Total new weight of unit.)*

DO NOT use fractions. Express as decimals carried to two places, Example: 1-1/4 lbs., show as 1.25 lbs. Example: 3/4 lbs., show as .75 lbs.

9. Processing Procedures. Poultry Products provide complete processing procedures as required in 9 CFR 381.134. Meat Products provide complete processing procedures as required. Note: Approval of the sketch does not convey approval of the processing procedures. If additional space is needed, complete a separate sheet of paper. If using the electronic version of this form, use the continuation sheet. Be sure to include the product name and number of the block item.
10. Name and Address of Firm. Insert Firm's name and mailing address. Use 2 letter symbol for State. Show postal zip code.
11. Signature and Date of Applicant or Agent. To be signed and dated by the applicant or agent representing the official.
12. Conditions Applying to Use of Label or Device. Leave blank, for USDA use only. (*Any condition, modification or remarks applied to the application when approved are conditions governing use of the approved devices.*)

Effective July 13, all correspondence, including comments and label applications should be sent to these new addresses:

FSIS Docket Room via U.S. Postal Service (including U.S. Priority Mail and U.S. Overnight Mail) or via shipping couriers (e.g., Federal Express):

FSIS Docket Room
USDA, FSIS, OPPD
Docket Clearance Unit
5601 Sunnyside Avenue, Stop 5272
Beltsville, MD 20705

Label Applications via U.S. Postal Service (including regular mail, U.S. Priority Mail and U.S. Overnight Mail) should be mailed to:

USDA, FSIS, OPPD, LPDD
Labeling Distribution Unit
5601 Sunnyside Ave., Stop 5273
Beltsville, MD 20705-5476

Label Applications sent via UPS, FedEx should be shipped to:

USDA, FSIS, OPPD, LPDD
Labeling Distribution Unit
5601 Sunnyside Ave., Stop 5273
Beltsville, MD 20705

Individuals may also fax label applications to LPDD at (301) 504-0873 (301) 504-0873 or (301) 504-0875 (301) 504-0875 beginning July 13.

APPENDIX 6—ADDITIONAL FSIS RESOURCES FOR ASSISTANCE

Additional FSIS Contacts for Assistance

Interactive Knowledge Exchange (IKE)

http://www.fsis.usda.gov/FSIS_Employees/IKE/index.asp

Small Business Regulatory Enforcement Fairness Act (SBREFA) <http://www.sba.gov/advo/laws/sbrefa.html>

FSIS Web Pages

FSIS Home Page

<http://www.fsis.usda.gov>

FSIS Code of Federal Regulations

<http://www.gpoaccess.gov/cfr/index.html>

FSIS Directive 5000.1 – Verifying an Establishment’s Food Safety System – Revision 1 (95 pp)

http://www.fsis.usda.gov/regulations_&_policies/5000_SeriesProgram_Services/index.asp

HACCP Contacts and Coordinators

http://www.fsis.usda.gov/contact_us_/state_haccp_contacts_&_coordinators/index.asp

Small and Very Small Plants Page

http://www.fsis.usda.gov/Small_Very_Small_Plants/index.asp

Business and Partners Page

<http://www.fsis.usda.gov/business/index.asp>

Labeling and Consumer Protection Staff (LARC)

http://www.fsis.usda.gov/About_Fsis/labeling_&_consumer_protection/index.asp

Sign up for the FSIS e-mail alert service for up-to-date information at

http://www.fsis.usda.gov/news_&_events/email_subscription/index.asp

APPENDIX 7—SAMPLE LETTER FOR APPROVED MUNICIPAL WATER SUPPLY

To: Inspector in Charge
XYZ Meat Packers, Inc. 1001 Main Street
Florence, Mississippi 39073

Dear Sir:

I certify that XYZ Meat Packers, Inc., located at 1001 Main Street, Florence, Mississippi, is supplied water from the City of Florence Municipal Water Co., which is approved by the Mississippi State Public Health Service. This water is potable, and meets tests prescribed by the Environmental Protection Agency in its “Drinking Water Standards”.

Attached please find a current water potability certification and laboratory sample report from the Mississippi State Public Health Service Laboratory, Jackson, Mississippi.

Sincerely,

Mr. A. B. Clean

Mr. A. B. Clean
State Sanitarian

APPENDIX 8—SAMPLE LETTER FOR APPROVED SEWAGE SYSTEM

To: Inspector in Charge
XYZ Meat Packers, Inc. 1001 Main Street
Florence, Mississippi 39073

Dear Sir:

I certify that XYZ Meat Packers, Inc., located at 1001 Main Street, Florence, Mississippi, is connected to the City of Florence Municipal Sewage System. I have inspected the plant disposal system and have found them to be acceptable to this department.

Sincerely,

Mr. A. B. Clean

Mr. A. B. Clean
State Sanitarian

APPENDIX 9—SAMPLE SANITATION STANDARD OPERATING PROCEDURE (SSOP)

XYZ Meat Packers, Inc. is a red meat processing establishment. This plant receives beef and pork for further processing. This plant cuts and grinds product and also packages it.

MANAGEMENT STRUCTURE

Owner –

Plant Manager –

Team Captains –

The Team Captains are responsible for implementing and daily monitoring of Sanitation SOP and recording the findings and any corrective actions. The Team Captains are responsible for training and assigning specific duties to other employees and monitoring their performance within the Sanitation SOP. All records, data, checklists, and other information pertaining to the Sanitation SOP will be maintained on file and made available to inspection personnel.

I. Preoperational Sanitation—Equipment and Facility Cleaning Objective

A. All equipment will be disassembled, cleaned, and sanitized before starting production.

1. Establishment sanitary procedure for cleaning and sanitizing equipment.
 - a. All equipment will have product debris removed.
 - b. Equipment will be rinsed with water to remove remaining debris.
 - c. An approved cleaner will be applied to equipment and properly cleaned.
 - d. Equipment will be sanitized with approved sanitizer and rinsed with potable water.
 - e. The equipment is reassembled.

2. Implementing, Monitoring and Recordkeeping

Team Captains perform daily organoleptic sanitation inspection after preoperational equipment cleaning and sanitizing. The results will be recorded on a Preoperational sanitation form. If found to be acceptable, the appropriate line will be checked. If corrective actions are needed, such actions will be documented.

3. Corrective Actions

The Team Captains determines that the equipment on hand does not pass organoleptic examination, the cleaning procedure and inspections are repeated. The Team Captains monitor the cleaning of the equipment on hand and retrains employees if necessary. Corrective actions are recorded on Pre-Operational sanitation forms.

B. Cleaning of Facilities including floors, walls, and ceilings.

1. Cleaning procedures:

- a. Debris is swept up and discarded.
- b. Facilities are rinsed with potable water.
- c. Facilities are cleaned with approved cleaner.

- d. Facilities are rinsed with potable water.
2. Cleaning of floors and walls are done at the end of each production day. Ceilings are cleaned as needed.
3. Establishment monitoring
The Team Captain performs daily organoleptic inspection before operation begins. Results are recorded on a preoperational sanitation form.
4. Corrective action
When the Team Captain finds that the facilities do not pass organoleptic inspection, the cleaning procedures and inspections are repeated. The Team Captain inspects the cleaning of the facilities and retrain employees as needed. Corrective action to prevent direct product contamination or adulteration are Recorded on Pre-operational sanitation forms.

II. OPERATIONAL SANITATION—EQUIPMENT AND FACILITY CLEANING OBJECTIVE

- A. Processing is performed under sanitary conditions to prevent direct and cross contamination of the product.
 1. Sanitary procedures for processing.
 - a. Employees clean and sanitize hands, gloves, knives, other hand tools, cutting boards, etc., as necessary during processing to prevent contamination of products.
 - b. All equipment tables and other product contact surfaces are cleaned and sanitized throughout the day as needed.
 - c. Outer garments such as aprons and gloves are hung in designed areas when employees leave processing area. Outer garments are maintained in a clean and sanitary manner and are changed at least daily and more often if necessary.
 2. Monitoring and Recordkeeping
The Team Captains are responsible for ensuring that employees' hygiene practices, sanitary handling procedures and cleaning procedures are maintained. The Team Captain monitors the sanitation procedures during the day. Results are recorded on an Operational Sanitation Form daily.
 3. Corrective Action
The Team Captain identifies sanitation problems and stops production if necessary and notifies processing employees to take appropriate action to correct sanitation problems. If necessary, processing employees are retrained and corrective actions are recorded on Operational Sanitation form.

APPENDIX 10—TWO SMALL PLANT DESIGNS

Small Plant Design—2,500 square feet
 Small Plant, Floor plan

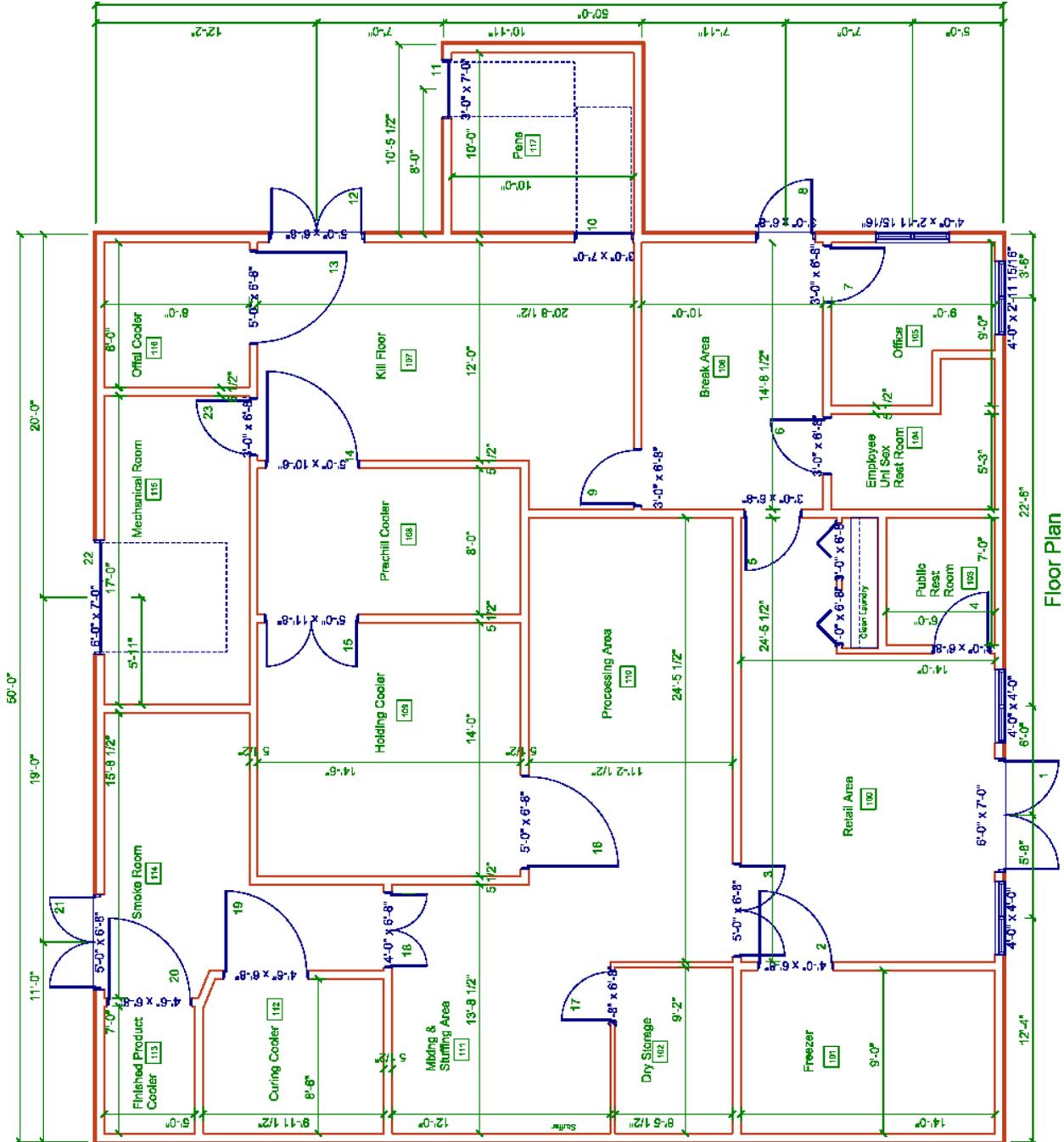


Figure 53—Small Plant Design—2,500 square feet

Plumbing Symbol Key Plan

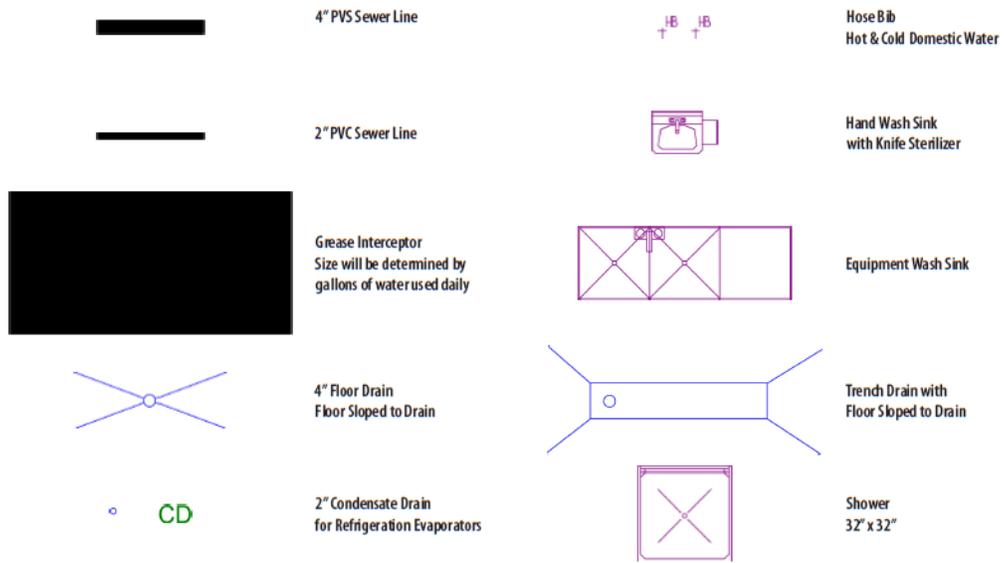


Figure 54—Plumbing Symbol Key

Small Plant, Plumbing Plan

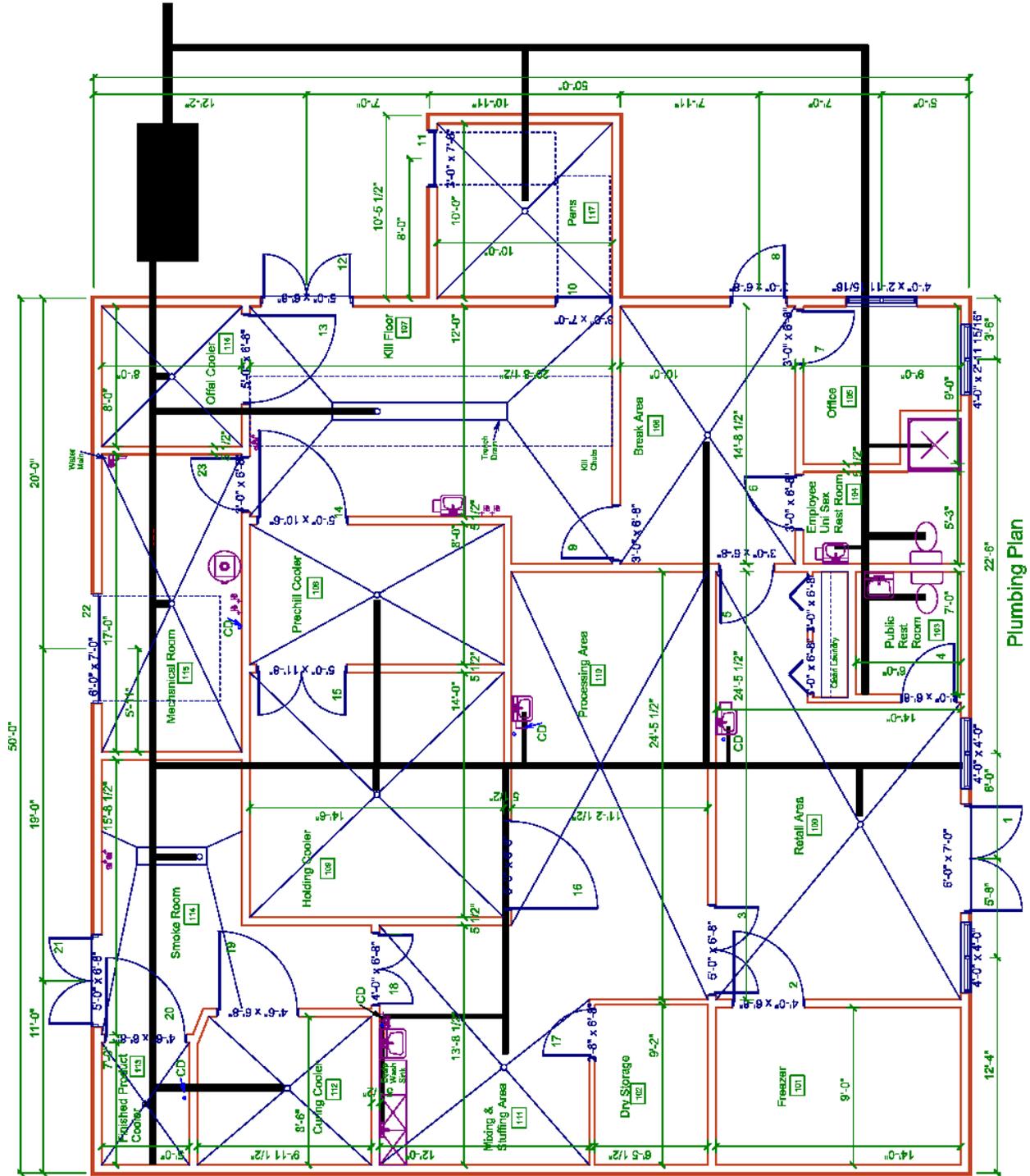


Figure 55—Small Plant, Plumbing Plan

Electrical Symbol Key Plan

	Flourescent Light (8' Vapor Tight, High Output, T-8)
	Fluorescent Light (4' Vapor Tight, High Output, T-8)
	Emergency Lights
	Lighted Exit Signs
	Incandescent Jar Lights
	GFI Outlet 115v
	Regular Outlet 115v
	208, 220, 230v outlet
	Light Switch
	Light Switch 3-Way
	Rest Room Exhaust Fan
	Electrical Panel
	Exhaust Fan

Figure 56—Electrical Symbol Key Plan

Small Plant, Electrical Plan

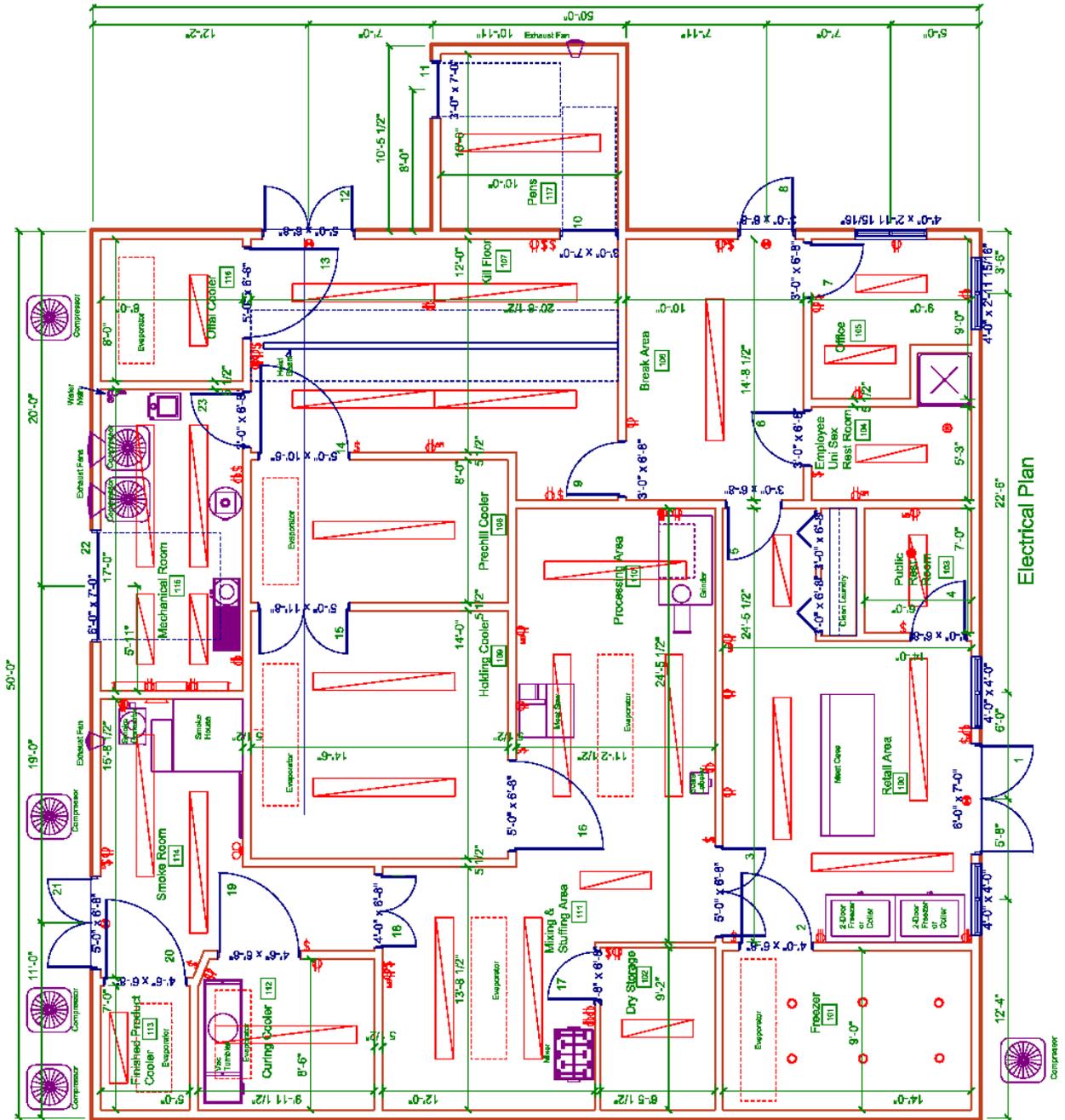


Figure 57—Small Plant, Electrical Plan

Refrigeration Symbol Key Plan

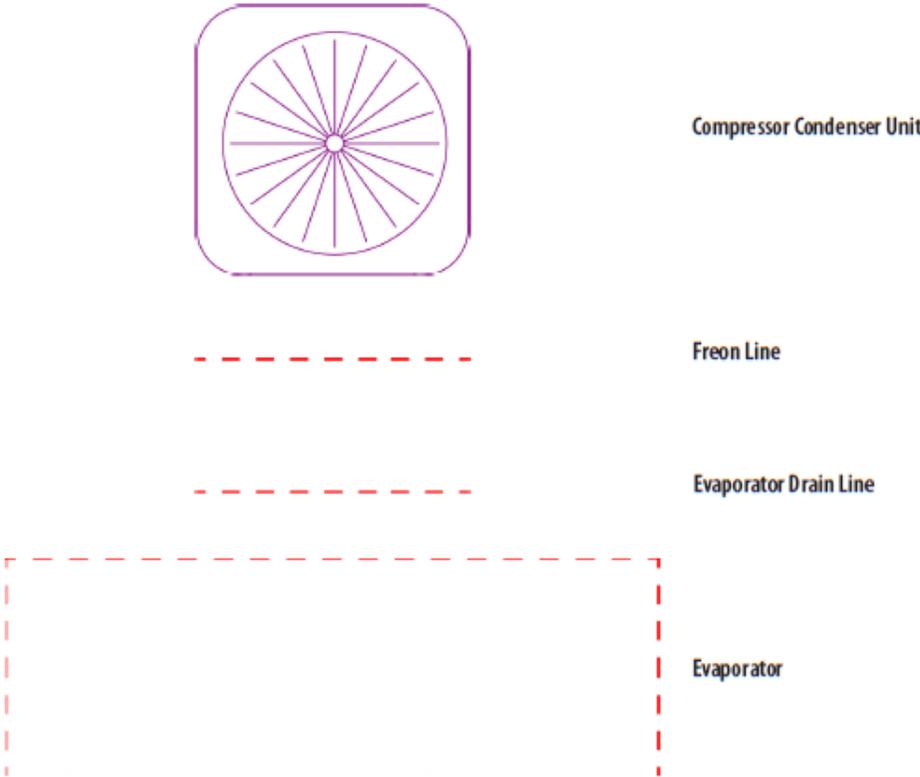


Figure 58—Refrigeration Symbol Key Plan

Small Plant, Refrigeration Plan

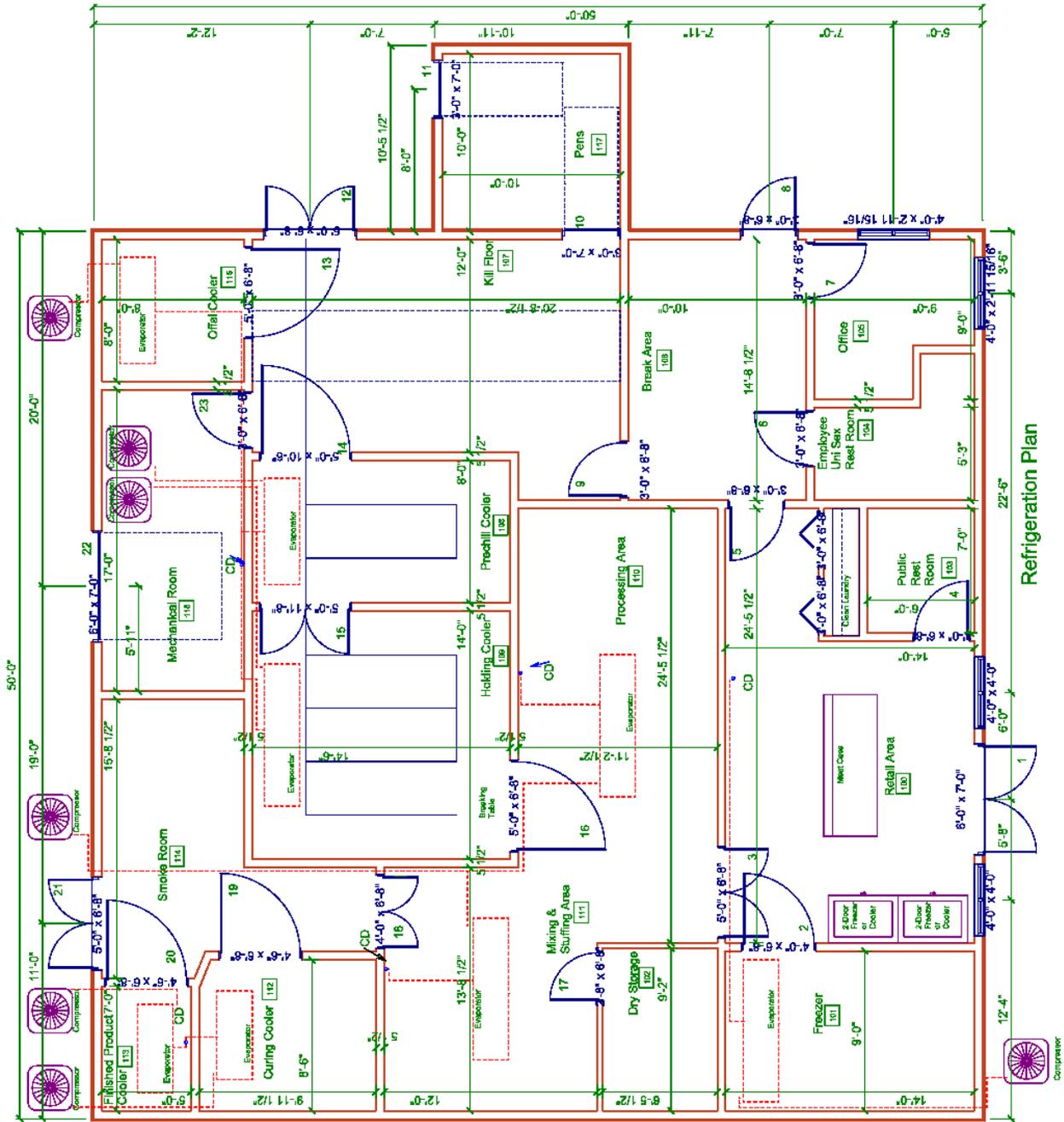


Figure 59—Small Plant, Refrigeration Plan

Equipment Symbol Key Plan

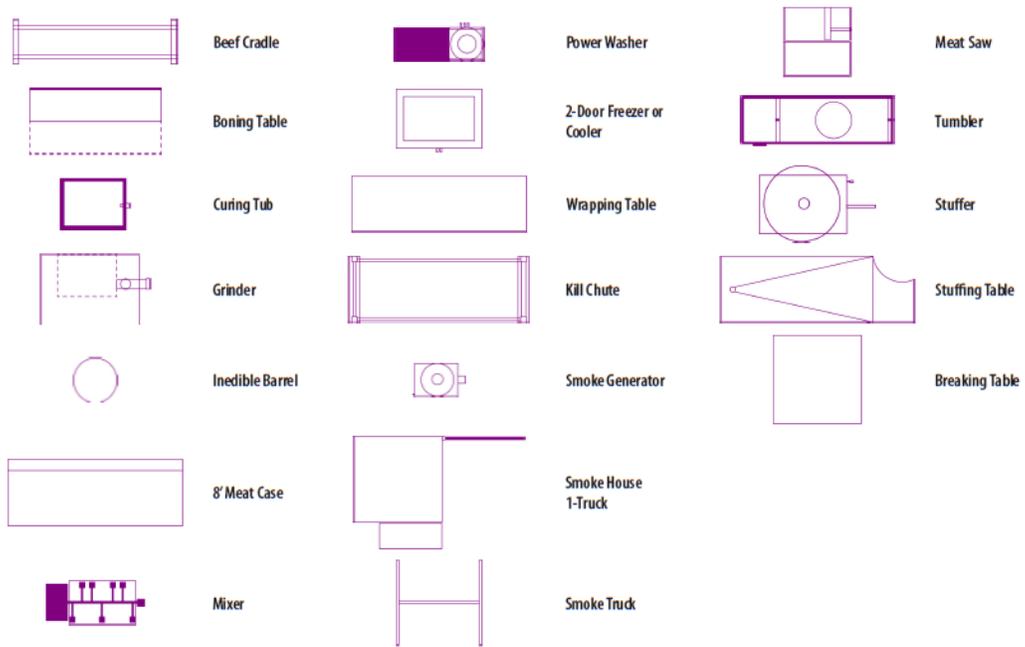


Figure 60—Equipment Symbol Key Plan

Small Plant, Equipment Plan

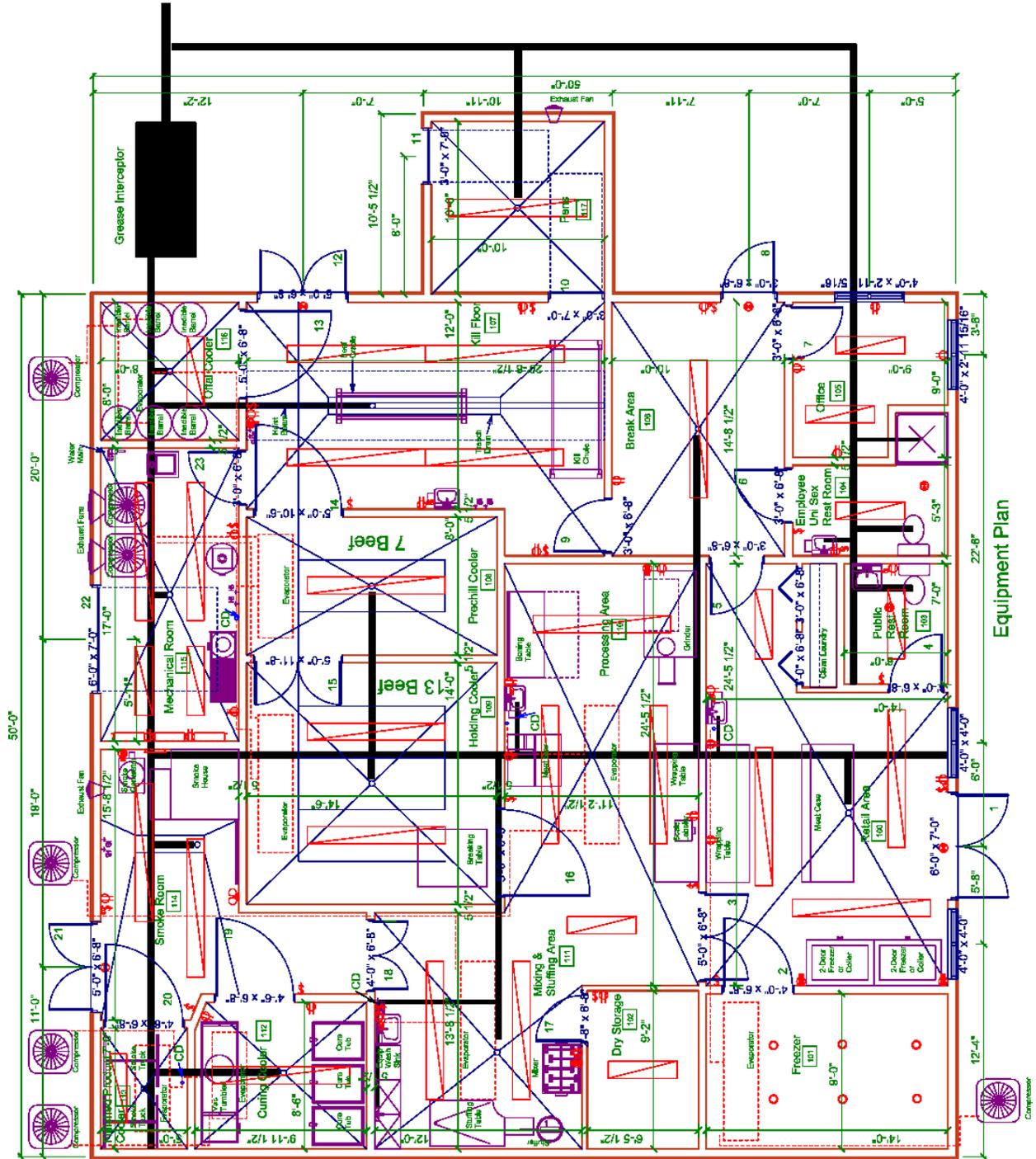


Figure 61—Small Plant, Equipment Plan

Small Plant, Front Elevation

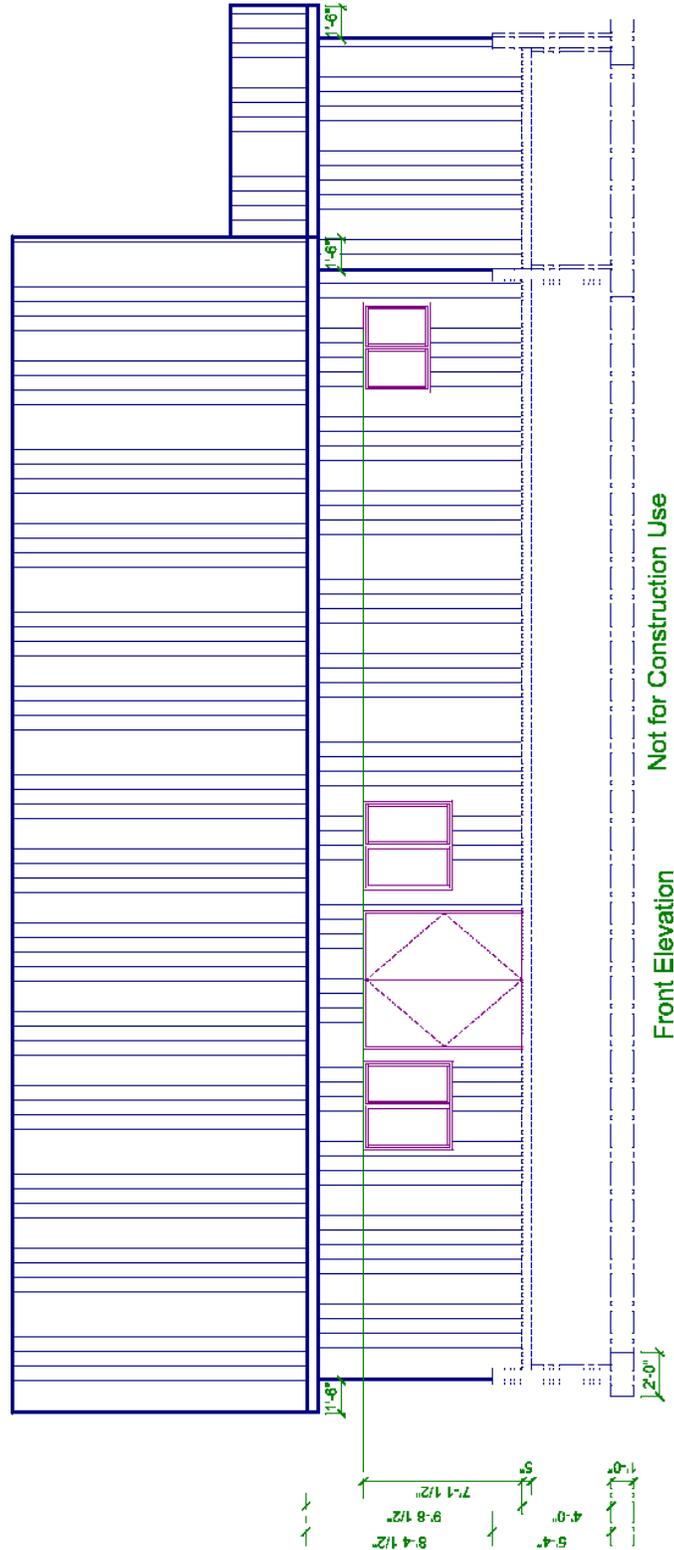


Figure 62—Small Plant, Front Elevation

Small Plant, Back Elevation

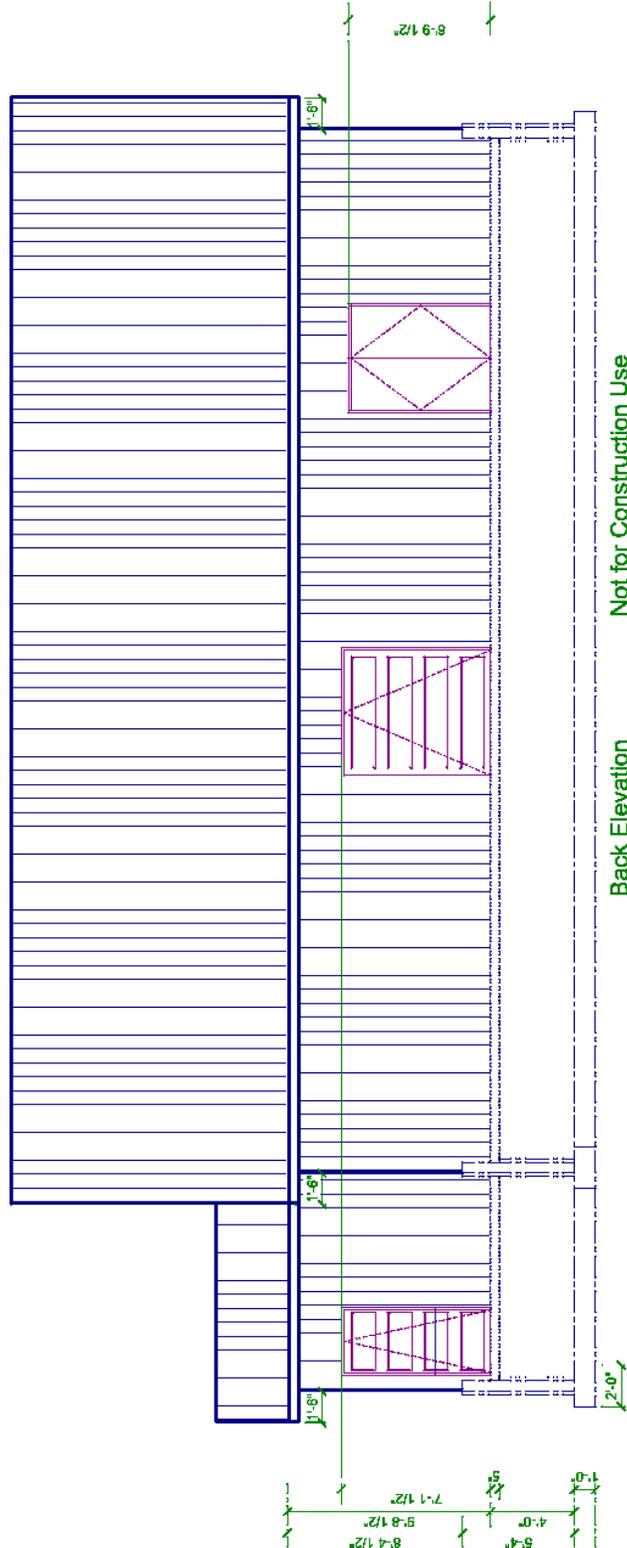


Figure 63—Small Plant, Back Elevation

Small Plant, Right Elevation

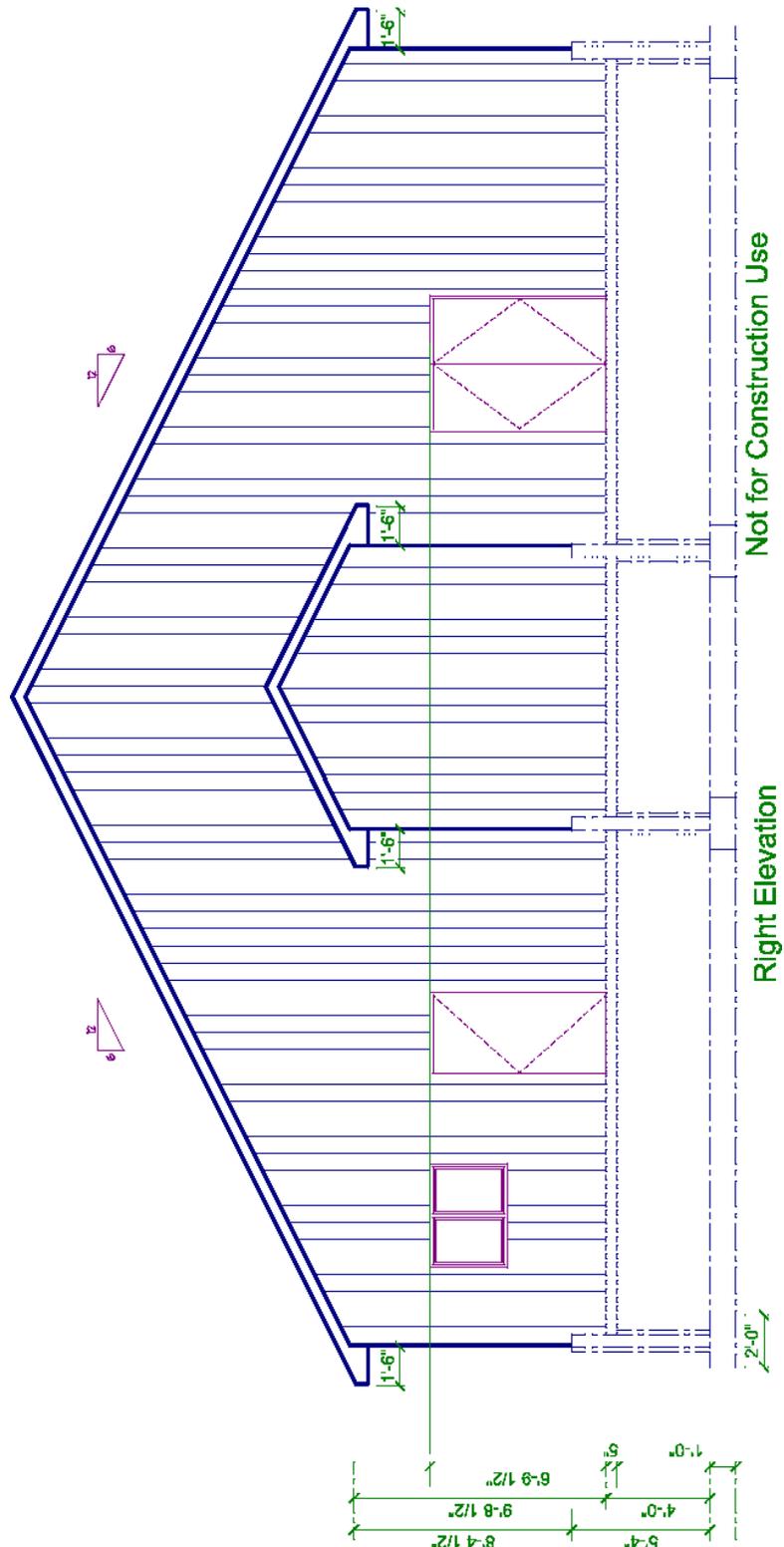


Figure 64—Small Plant, Right Elevation

Small Plant, Left Elevation

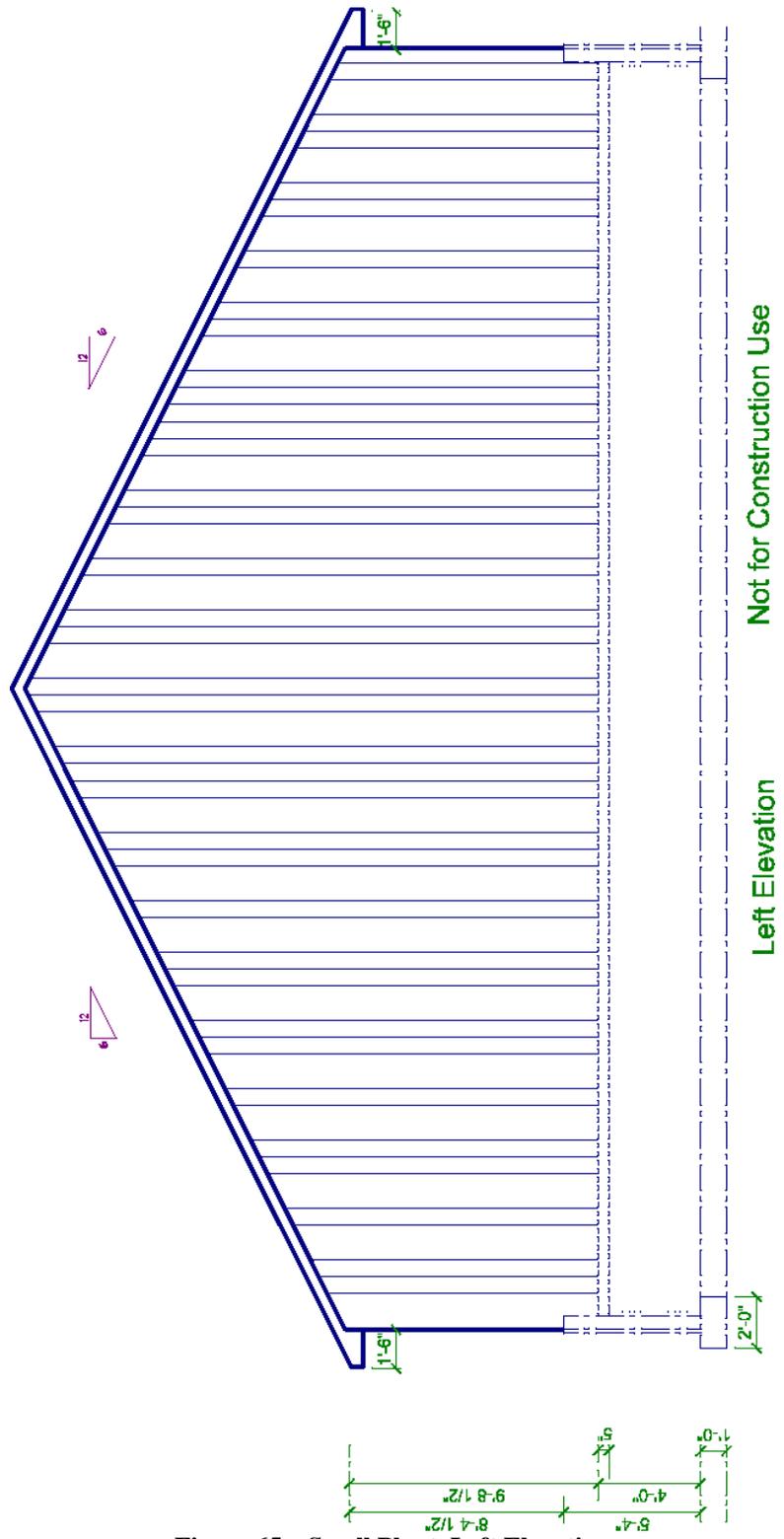


Figure 65—Small Plant, Left Elevation

Building Specifications Small Plant Design

Room Finish Schedule

Room No.	Room Name	Floor	Base	Walls N	Walls E	Walls S	Walls W	Ceiling	Ceiling Height
100	Retail Area	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
101	Freezer	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
102	Dry Storage	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
103	Public Rest Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
104	Employee Rest Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
105	Office	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
106	Break Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
107	Kill Floor	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	14'
107	Kill Floor Cupola	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	18'
108	Prechill Cooler	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	14'
109	Holding Cooler	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	14'
110	Processing Area	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
111	Mixing & Stuffing Area	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
112	Curing Cooler	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
113	Finished Product Cooler	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
114	Smoke Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
115	Mechanical Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
116	Offal Cooler	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
117	Pens	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'

Table 29—Room Finish Schedule

Notes:

Laminated Product:

- Fluted Polypropylene .400" back
- .05" sealed fiberglass reinforced plastic (FRP) panel, single sided skin FRP
- (Glasbord is a tradename for FRP)

PVC Trim Boards:

- 1/2" thick x 3" wide
- 22.5° angle cut on top (minimum) PVC cove

Door Schedule

Door No	Room	Size Width	Size Height	Material Type	Finish	Remarks
1	Entry	6'-0"	7'-0"	Glass	Factory	Lockable
2	Freezer	4'-0"	6'-8"	Wood	Factory	Insulated Freezer Door
3	Retail Area	5'-0"	6'-8"	Wood	SS	Double Swing
4	Public Rest Room	3'-0"	6'-8"	Steel	Painted	Lockable Inside
5	Retail Area	3'-0"	6'-8"	Steel	Painted	No Knob (Push & Pull handle)
6	Employee Rest Room	3'-0"	6'-8"	Steel	Painted	Lockable Inside
7	Office	3'-0"	6'-8"	Steel	Painted	Lockable w/Dead bolt
8	Break Room	3'-0"	6'-8"	Steel	Painted	Steel Insulated (Lockable)
9	Kill Floor	3'-0"	6'-8"	Steel	Painted	No Knob (Push & Pull handle)
10	Pens	3'-0"	7'-0"	Steel	Painted	Insulated Roll up Door (Lockable)
11	Pens	3'-0"	7'-0"	Steel	Painted	Insulated Roll up Door (Lockable)
12	Kill Floor	5'-0"	6'-8"	Steel	Painted	Steel Insulated (Lockable)
13	Offal Cooler	5'-0"	6'-8"	Wood	Factory	Insulated Cooler Door
14	Pre chill Cooler	5'-0"	10'-6"	Wood	Factory	Insulated Cooler Door
15	Holding Cooler	5'-0"	11'-8"	Steel	Clear	Double Swing
16	Holding Cooler	5'-0"	6'-8"	Wood	Factory	Insulated Cooler Door
17	Dry Storage	2'-8"	6'-8"	Wood	SS	Double Swing
18	Mixing & Stuffing	4'-0"	6'-8"	Wood	SS	Double Swing
19	Curing Cooler	4'-6"	6'-8"	Wood	Factory	Insulated Cooler Door
20	Finished Product Cooler	4'-6"	6'-8"	Wood	Factory	Insulated Cooler Door
21	Smoke Room	5'-0"	6'-8"	Steel	Painted	Steel Insulated (Lockable)
22	Mechanical Room	6'-0"	7'-0"	Steel	Painted	Overhead Steel Insulated (Lockable)

Table 30—Door Schedule

NOTE: Owner may need to furnish cooler doors, freezer door, and double swing doors to contractor.

Concrete Finish Schedule

Room No.	Room Name		Floor Drains	Insulation Thickness Under floor	Remarks
100	Retail Area		1		
101	Freezer		0	8"	
102	Dry Storage		0		
103	Public Rest Room		0		
104	Employee Rest Room		0		
105	Office		0		
106	Break Area		1		
107	Kill Floor		1		Trench Drain
108	Pre chill Cooler		1	2"	
109	Holding Cooler		1	2"	
110	Processing room		1	2"	
111	Mixing & Stuffing		1	2"	
112	Curing Cooler		1	2"	
113	Finished Product		1	2"	
114	Smoke Room		1		Trench Drain
115	Mechanical Room		1		
116	Offal Cooler		1	2"	
117	Pens		1		

Table 31—Concrete Finish Schedule

NOTES:

- All Floors will be concrete with a non-slip finish (4000#).
- All floors 5" thick with rebar spaced at 2' on center and places on 2-1/2" chairs.
- Floor slopes to drains have to be 3/16" per foot or greater (no standing water on floors).
- Under floor insulation must have a density of 2.5 lbs. per cubic foot or 2" thick equals R-value of R-10.
- Ground under insulated floors must be properly bedded with gravel and/or sand for proper ventilation to avoid ice heaving.

Plumbing Specifications

Room No.	Room Name	Room Size	Remarks
100	Retail Area	17'x14'x10'	1 Floor Drain 1 Wall-mount handwash sink
103	Public Rest Room	7'x6'x10'	1 Toilet 1 Wall-mount handwash sink
104	Employee Rest Room	5'x9'x10'	1 Toilet 1 Wall-mount handwash sink Enclosed Shower
106	Break Area	15'x10'x10'	1 Floor Drain
107	Kill Floor	21'x12'x14'	1 Floor Drain (Trench Drain) 1 Wall-mount handwash sink 2 sets of Hose Bibs (Hot & Cold domestic water)
108	Pre chill Cooler	8'x14'6"x14'	1 Floor Drain
109	Holding Cooler	14'x14'6"x14'	1 Floor Drain
110	Processing room	25'x11'x10'	1 Floor Drain 1 Wall-mount handwash sink 1 Condensate Drain (On sink drain)
111	Mixing & Stuffing Area	14'x12'x10'	1 Floor Drain 1 Equipment wash sink (3 compartment) 1 Wall-mount handwash sink 1 Condensate Drain (On sink drain)
112	Curing Cooler	8'6"x10'x10'	1 Floor Drain
113	Finished Product Cooler	5'x7'x10'	1 Floor Drain 1 Condensate Drain
114	Smoke Room	8'x16'x10'	1 Floor Drain (Trench Drain) 1 Set of Hose Bibs (Hot & Cold Domestic water) Cold domestic water hook-up to smokehouse
115	Mechanical Room	8'x17'x10'	1 Floor Drain Water Main 1 Set of Hose Bibs (Hot & Cold Domestic water) 1 Condensate Drain Water Heater Power washer hook-up
116	Offal Cooler	8'x8'x10'	1 Floor Drain
117	Pens	10'x10'x10'	1 Floor Drain

Table 32—Plumbing Specifications

Owner may need to supply wall mount hand wash sinks & equipment wash sinks to contractor.

NOTES:

- All plumbing to meet state and local codes.
- All floor drain and risers to be 4" diameter.
- Condensate drains for refrigeration need to be 2" diameter lines.
- Public and employee rest rooms must be a separate drain line out of building. All water lines surface mounted in plant.
- All water lines 1/2" or larger diameter.
- All floor drains need covers and must have deep seal trap and properly vented.

Electrical Specifications

Room No.	Room Name	Lighting Type	Lighting FCP	Switches	Outlets 115V	Outlets 220V	Fan	Remarks
100	Retail Area	8"VT, HO T8 4"VT, HO	50	1 1-3way	3 1 GFI	2		Needs a night light
101	Freezer	Incandescen	30					Light switch in Retail
102	Dry Storage	4"VT, HO	30	1	1			
103	Public Rest Room	4"VT, HO T8	30	1	1 GFI		1	Exhaust fan on with light
104	Employee Rest Room	4"VT, HO T8	30	1	1 GFI		1	Exhaust fan on with light
105	Office	4"VT, HO	50	1	4			
106	Break Area	4"VT, HO	30	1 -3way	2			
107	Kill Floor	8"VT, HO T8	50	4	3 1 GFI	2		
108	Pre chill Cooler	8"VT, HO T8	30					Light switch in Kill Floor
109	Holding Cooler	8"VT, HO T8	30					Light switch in Process Room
110	Processing Room	8"VT, HO T8	50	2	2 1 GFI	2		
111	Mixing & Stuffing Area	8"VT, HO T8	50		1 1 GFI	1		Lights on with Process Room lights
112	Curing Cooler	8"VT, HO T8	30	1	2			Light switch in hallway
113	Finished Product Cooler	4"VT, HO T8	30	1				Light switch in hallway
114	Smoke Room	8"VT, HO T8	50	1-3way	1	2	1	
115	Mechanical Room	8"VT, HO T8 4"VT, HO T8	50	1	3	1	2	
116	Offal Cooler	4"VT, HO T8	30					Light switch in Kill Floor
117	Pens	8"VT, HO T8	30					Light switch in Kill Floor

Table 33—Electrical Specifications

NOTES:

- Lights shown on drawing are only showing placement between rails, beams, etc. (may need more or less lights).
- Owner may change lighting type, but lighting foot candle power (FCP) must be at least what is shown on specifications. Need lighted exit signs wherever needed by code.
- Need emergency lighting wherever needed by code.
- All pvc conduit used in all rooms (metal conduit can be used in mechanical room and above ceilings only). No #14 wire used.
- Must bid Square D equipment only.
- GFI outlets must have lighted trip light.
- This specification sheet does not include any refrigeration electrical needs (will be provided by refrigeration supplier).

Refrigeration Room Specifications

Room No.	Room Name	Room Size	Ceiling R-value	Walls R-value	Floor R-value	Workers in Room	Product Temp In	Product Temp Out	Remarks
101	Freezer	14'x9'x10'	30	23	40	0	50 ⁰ F	0 ⁰ F	Run room temp at 0 - 10 ⁰ F Freezer 2000# in 24 hours
108	Pre chill Cooler	8'x14'6"x14'	30	23	10	0	100 ⁰ F	36 ⁰ F	Cool 5000# product in 24 hours
109	Holding Cooler	14'x14'6"x14'	30	23	10	0	40 ⁰ F	34 ⁰ F	Hold product at 34 ⁰ F Up to 15000# product
110	Processing Room	24'x11'x10'	30	23	10	5	40 ⁰ F	40 ⁰ F	Run room temp at 55 ⁰ F
111	Mixing & Stuffing Area	14'x12'x10'	30	23	10	3	40 ⁰ F	50 ⁰ F	Run room temp at 55 ⁰ F
112	Curing Cooler	8'6"x10'x10'	30	23	10	0	50 ⁰ F	36 ⁰ F	Hold product at 34-36 ⁰ F
113	Finished Product	5'x7'x10'	30	23	10	0	120 ⁰ F	40 ⁰ F	2000# product in 12 hours
116	Offal Cooler	8'x8'x10'	30	23	10	0	100 ⁰ F	50-60 ⁰ F	Run room temp at 50 ⁰ F 3000# product in 48 hours

Table 34—Refrigeration Room Specifications

NOTES:

- Need to supply electrical needs for refrigeration to electrical contractor.
- Refrigeration lines should be insulated and covered with PVC or other sealed vapor barrier to avoid condensation.

Large Plant Design—5,250 square feet

Large Plant, Floor Plan

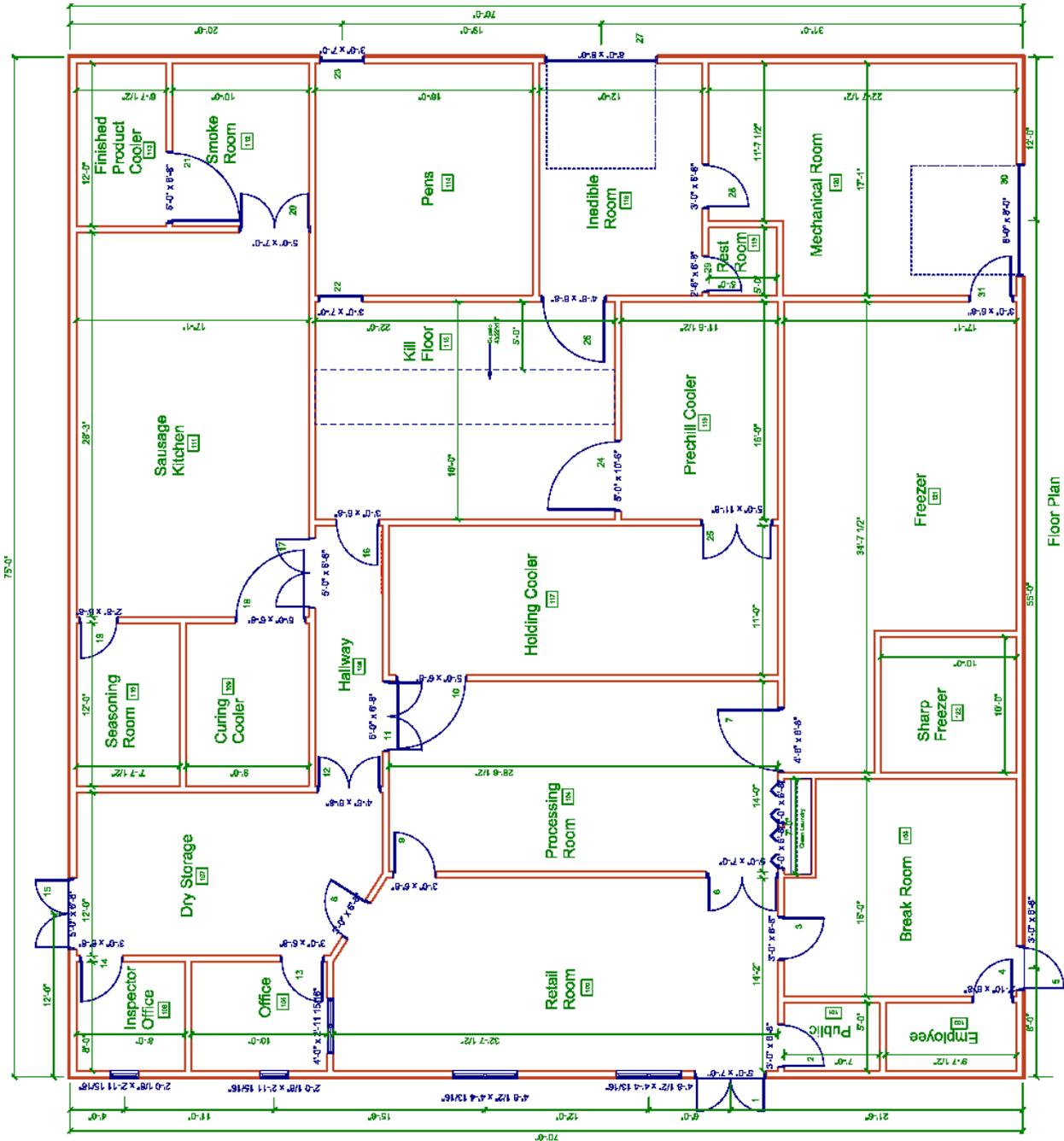


Figure 66—Large Plant, Floor Plan

Plumbing Symbol Key Plan

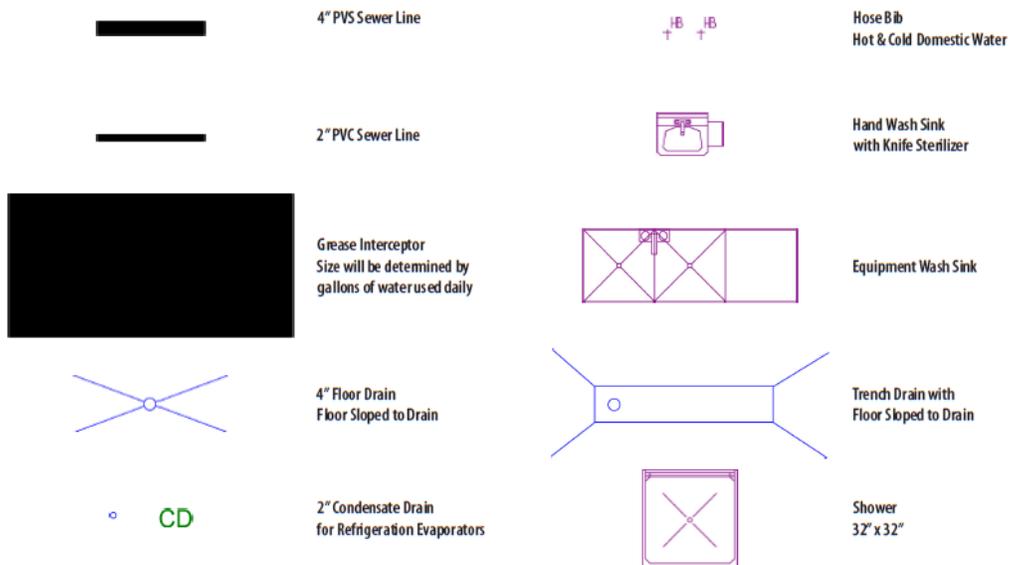


Figure 67—Plumbing Symbol Key Plan

Large Plant, Plumbing Plan

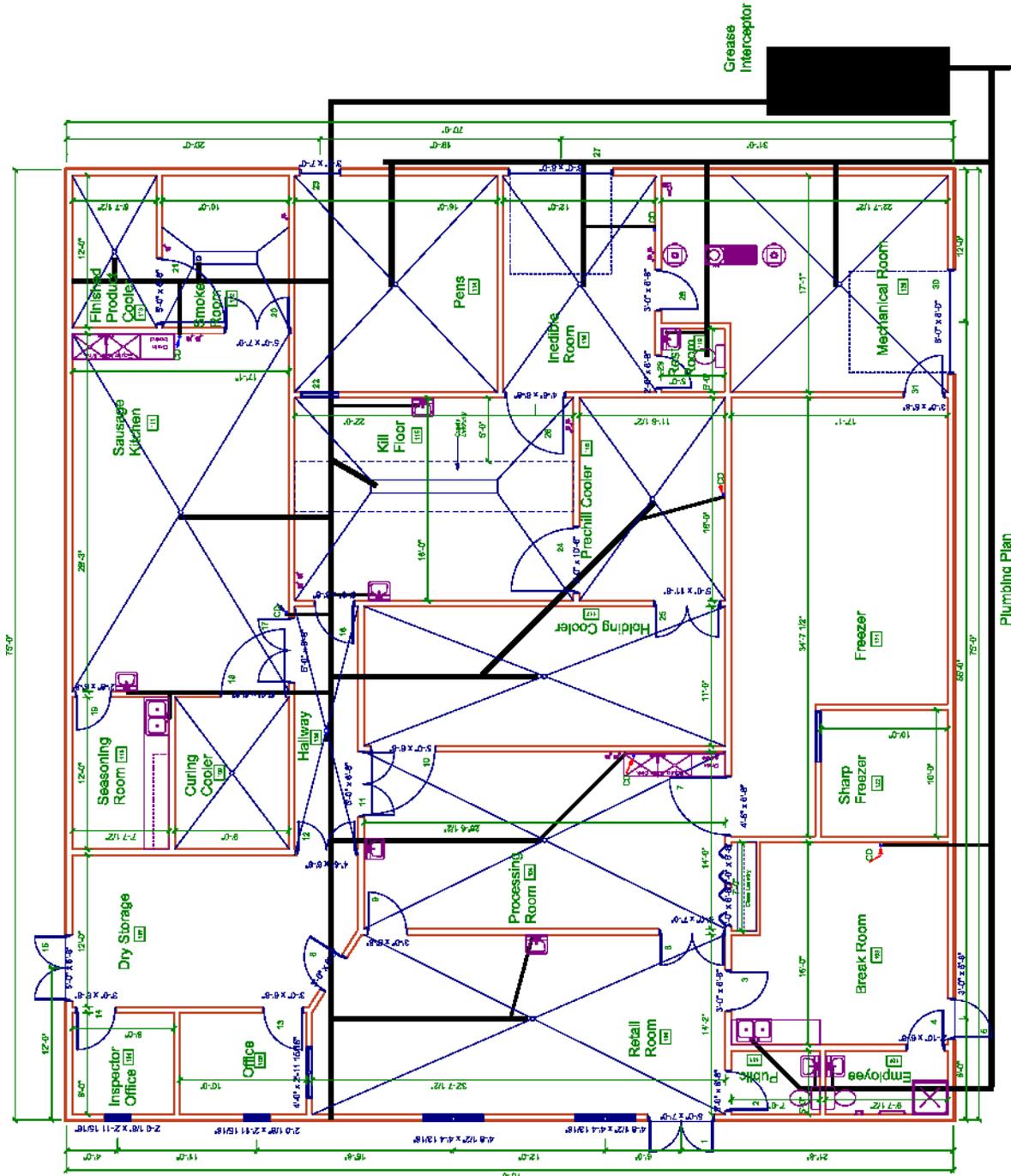


Figure 68—Large Plant, Plumbing Plan

Electrical Symbol Key Plan

	Fluorescent Light (8; Vapor Tight, High Output, T-8)
	Fluorescent Light (4; Vapor Tight, High Output, T-8)
	Emergency Lights
	Lighted Exit Signs
	Incandescent Jar Lights
	GFI Outlet 115v
	Regular Outlet 115v
	208, 220, 230 v outlet
	Light Switch
	Light Switch 3-Way
	Rest Room Exhaust Fan
	Electrical Panel
	Exhaust Fan

Figure 69—Electrical Symbol Key Plan

Large Plant, Electrical Plan

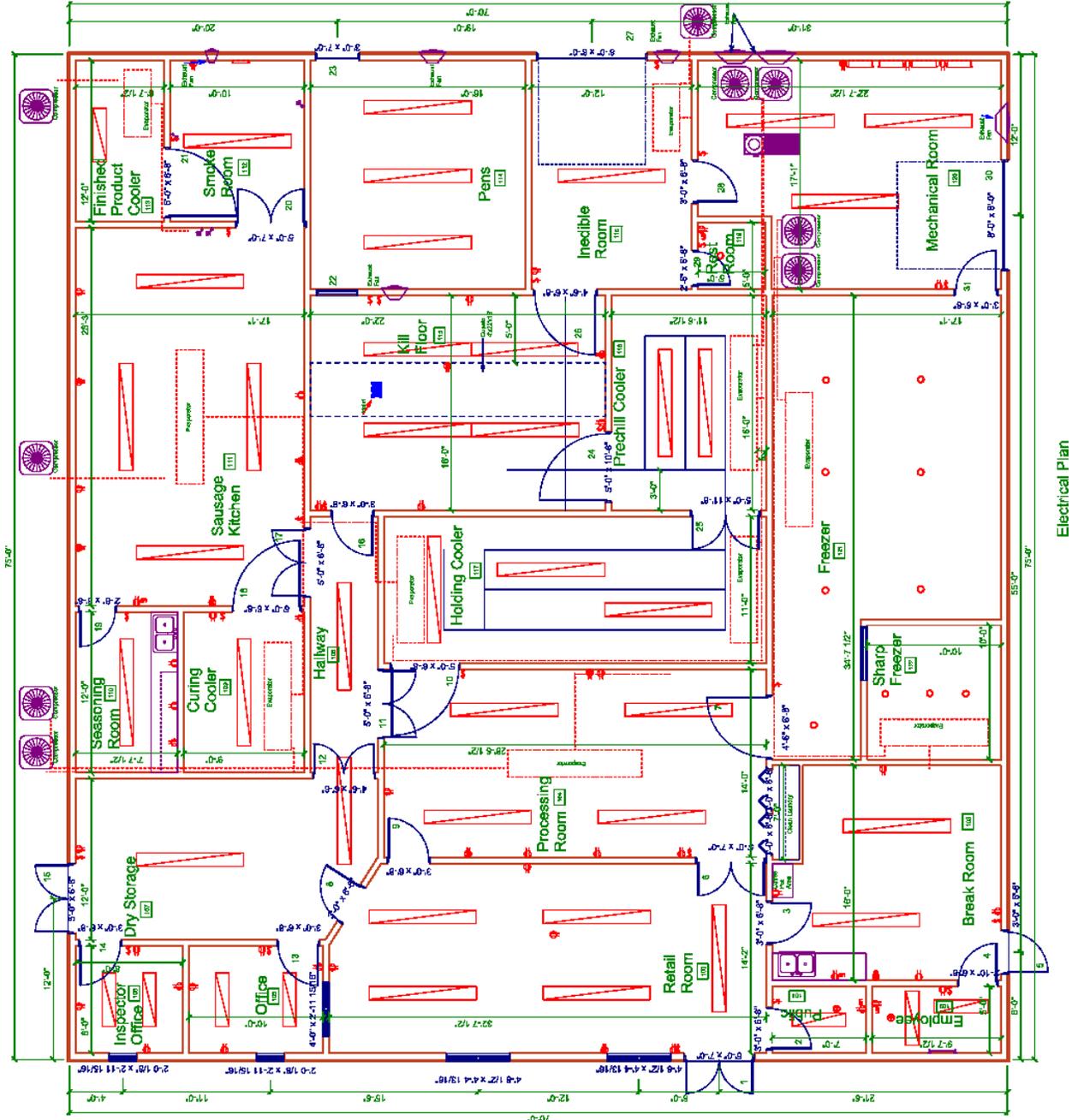


Figure 70—Large Plant, Electrical Plan

Refrigeration Symbol Key Plan

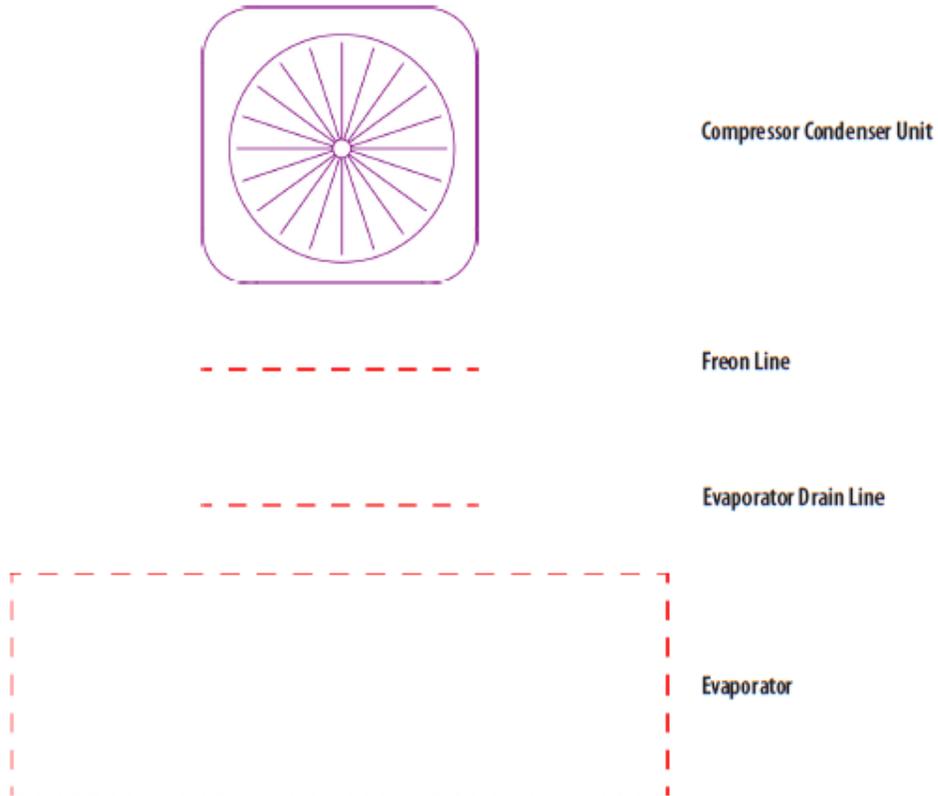


Figure 71—Refrigeration Symbol Key Plan

Large Plant, Refrigeration Plan

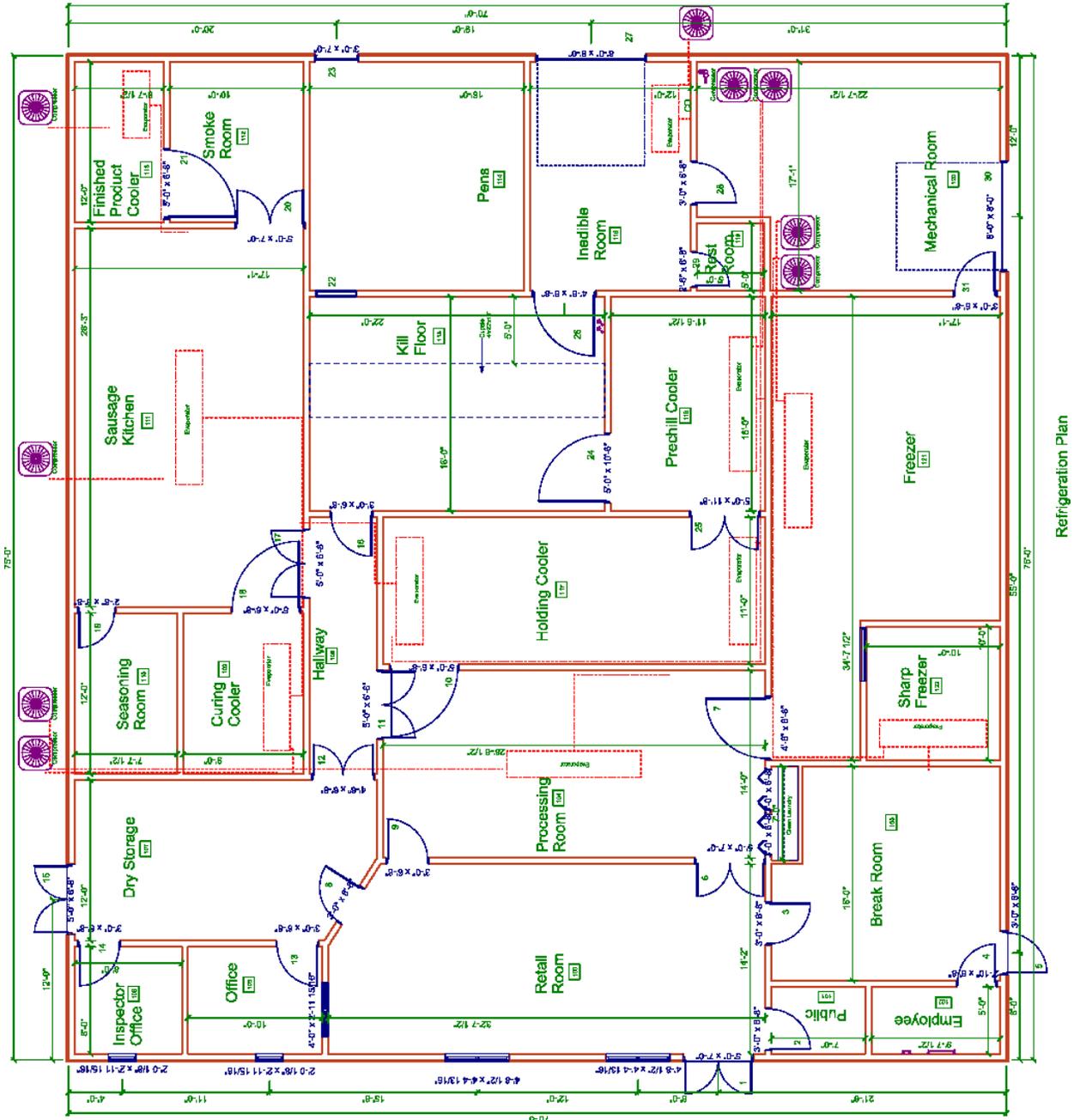


Figure 72—Large Plant, Refrigeration Plan

Equipment Symbol Key Plan

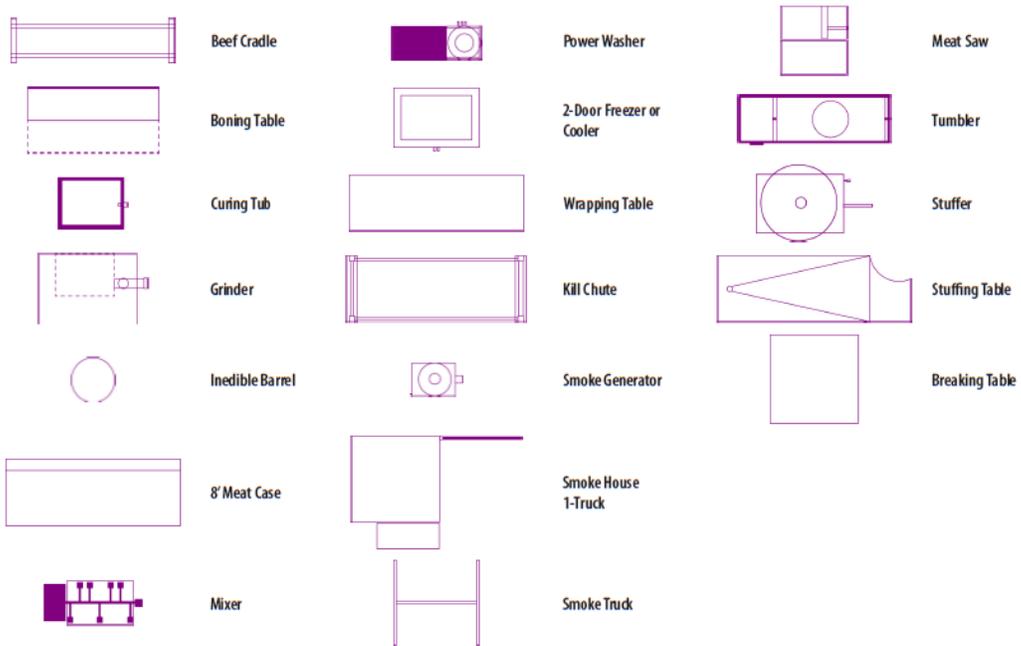


Figure 73—Equipment Symbol Key Plan

Large Plant, Equipment Plan

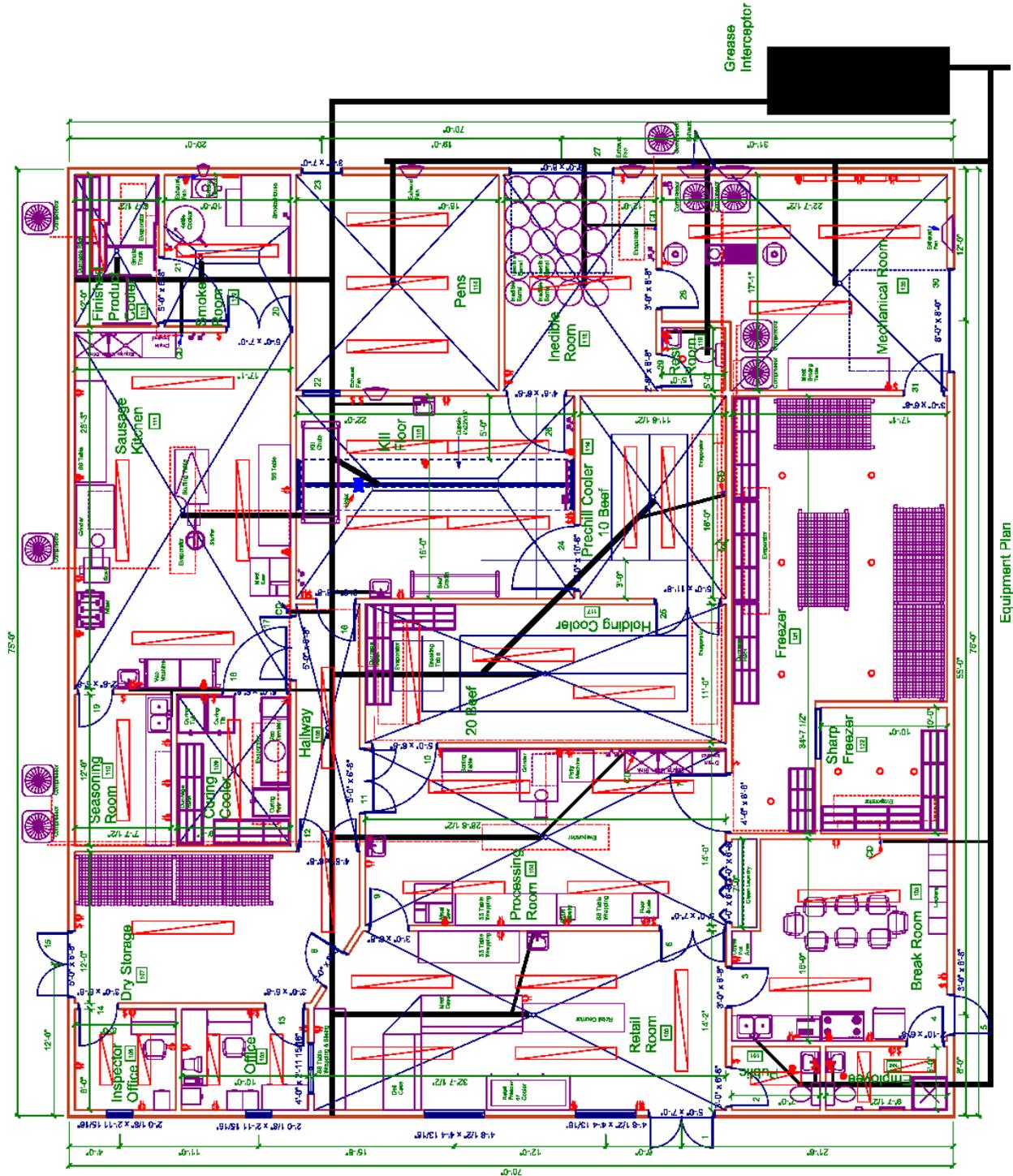


Figure 74—Large Plant, Equipment Plan

Large Plant, Front Elevation

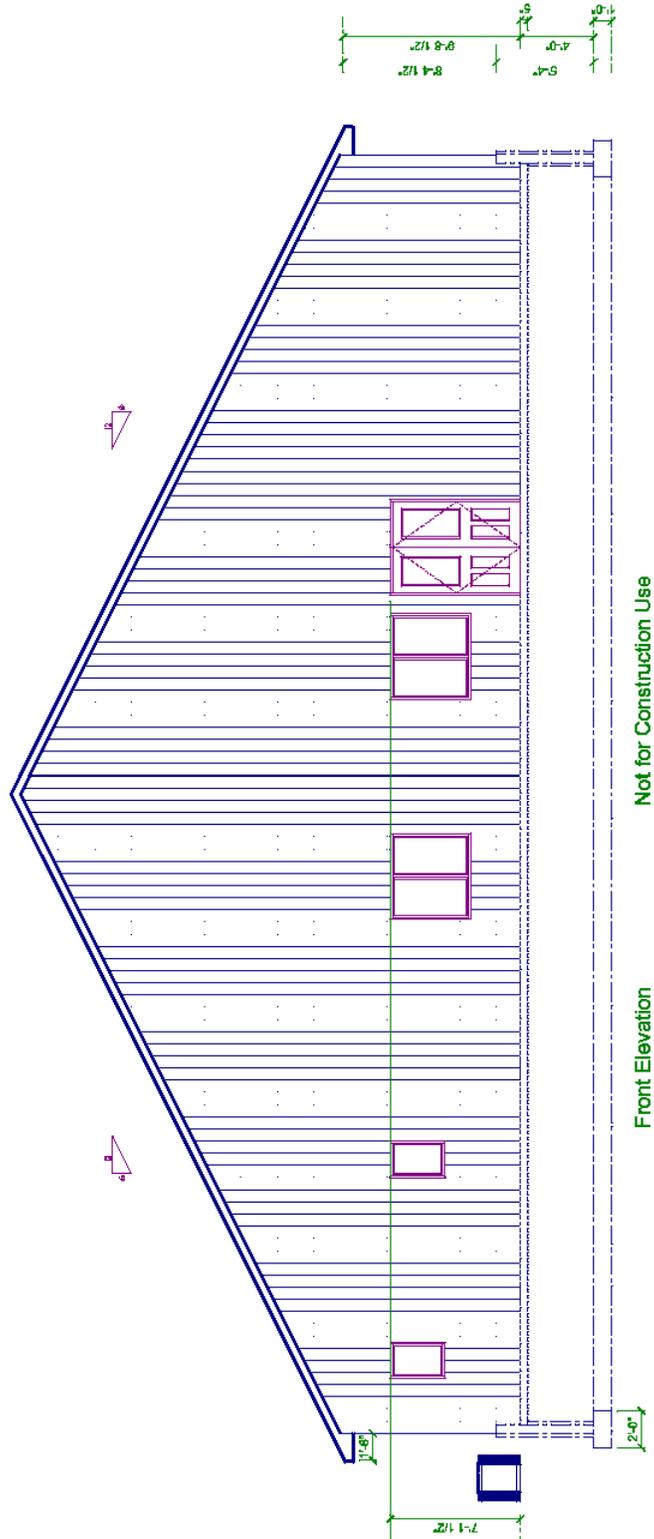


Figure 75—Large Plant, Front Elevation

Large Plant, Back Elevation

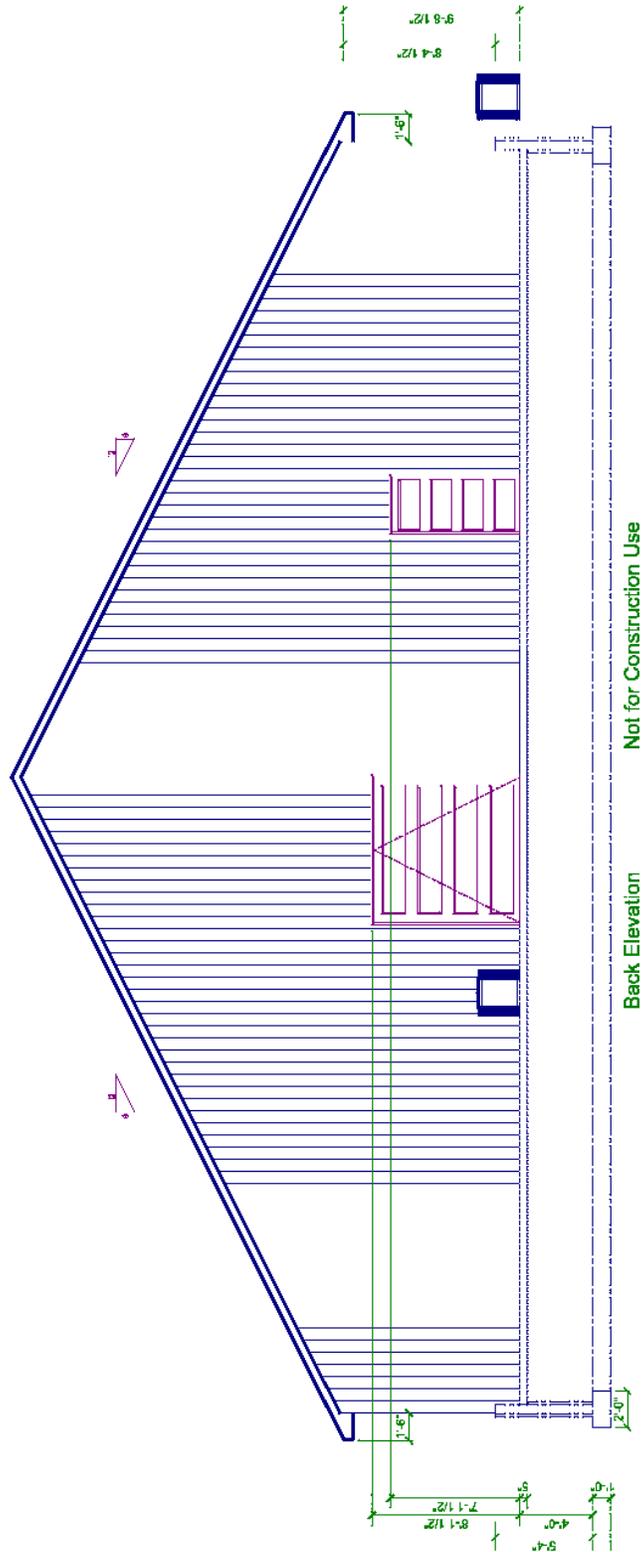


Figure 76—Large Plant, Back Elevation

Large Plant, Left Elevation

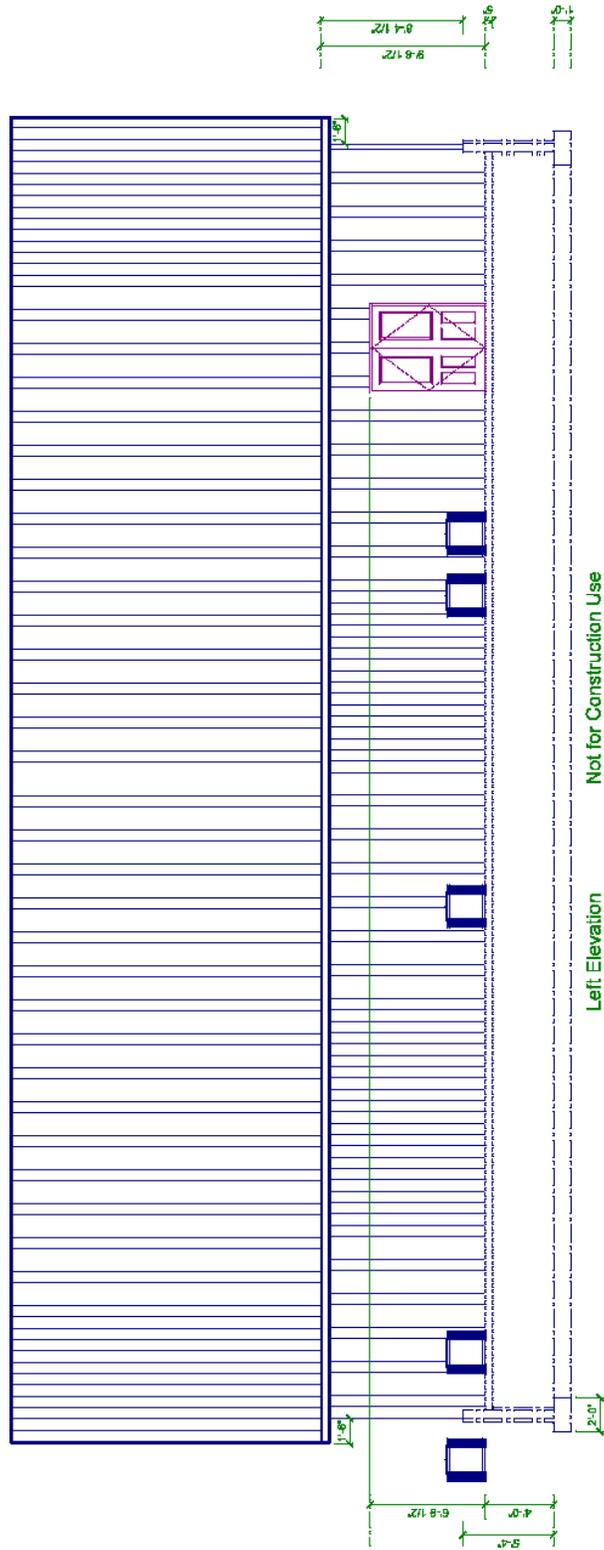


Figure 78—Large Plant, Left Elevation

Building Specifications Large Plant Design

Room Finish Schedule

Room No.	Room Name	Floor	Base	Walls N	Walls E	Walls S	Walls W	Ceiling	Ceiling Height
100	Retail Area	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
101	Public Rest Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
102	Employee Rest Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
103	Break Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
104	Processing Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
105	Office	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
106	Inspection Office	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
107	Dry Storage	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	14'
108	Hallway	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	14'
109	Curing Cooler	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	14'
110	Seasoning Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
111	Sausage Kitchen	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
112	Smoke Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
113	Finished Product Cooler	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
114	Pens	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
115	Kill Floor	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	14'
115	Kill Floor Cupalo	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	18'
116	Pre chill Cooler	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	14'
117	Holding Cooler	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	14'
118	Inedible Cooler	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
119	Rest Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
120	Mechanical Room	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
121	Freezer	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'
122	Sharp Freezer	concrete	PVC cove	FRP	FRP	FRP	FRP	FRP	10'

Table 35—Room Finish Schedule

Notes:

Laminated Product:

- Fluted Polypropylene .400" back
- .05" sealed fiberglass reinforced plastic (FRP) panel, single sided skin FRP
- (Glasbord is a tradename for FRP)

PVC Trim Boards:

- 1/2" thick x 3" wide
- 22.5° angle cut on top (minimum) PVC cove

Door Schedule

Door No	Room	Size Width	Size Height	Material Type	Finish	Remarks
1	Entry	6'-0"	7'-0"	Glass	Factory	Lockable/Dead bolt
2	Public Rest Room	3'-0"	6'-8"	Steel	Painted	Lockable Inside
3	Break room	3'-0"	6'-8"	Steel	Painted	No Knob (Push & Pull handle)
4	Employee Rest Room	3'-0"	6'-8"	Steel	Painted	Lockable Inside
5	Break Room	3'-0"	6'-8"	Steel	Painted	Lockable/Dead bolt
6	Retail Room	5'-0"	6'-8"	Wood	SS	Double Swing
7	Freezer	5'-6"	6'-8"	Wood	Factory	Insulated Freezer Door
8	Retail Room	3'-0"	6'-8"	Steel	Painted	No Knob (Push & Pull handle)
9	Retail Room	3'-0"	6'-8"	Wood	SS	Double Swing
10	Processing Room	5'-0"	7'-0"	Wood	Factory	Insulated Cooler Door
11	Processing Room	5'-0"	6'-8"	Wood	Factory	Double Swing
12	Hallway	4'-6"	6'-8"	Wood	Factory	Double Swing
13	Office	3'-0"	6'-8"	Steel	Painted	Lockable/Dead bolt
14	Inspection Office	3'-0"	6'-8"	Steel	Painted	Lockable
15	Dry Storage	5'-0"	6'-8"	Steel	Painted	Lockable/Dead bolt
16	Kill Floor	3'-0"	6'-8"	Steel	Painted	No Knob (Push & Pull handle)
17	Sausage Kitchen	5'-0"	6'-8"	Wood	SS	Double Swing
18	Curing Cooler	5'-0"	6'-8"	Wood	Factory	Insulated Cooler Door
19	Seasoning Room	2'-8"	6'-8"	Steel	Painted	No Knob (Push & Pull handle)
20	Smoke Room	5'-0"	6'-8"	Wood	SS	Double Swing
21	Finished Product Cooler	5'-0"	6'-8"	Wood	Factory	Insulated Cooler Door
22	Pens	3'-0"	7'-0"	Steel	Painted	Roll up Steel Insulated (Lockable)
23	Pens	3'-0"	7'-0"	Steel	Painted	Roll up Steel Insulated (Lockable)
24	Pre chill Cooler	5'-0"	10'-6"	Wood	Factory	Insulated Cooler Door
25	Holding Cooler	5'-0"	11'-8"	Steel	Clear	Double Swing
26	Inedible Cooler	4'-6"	6'-8"	Wood	Factory	Insulated Cooler Door
27	Inedible Cooler	8'-0"	8'-0"	Steel	Factory	Overhead Steel Insulated (Lockable)
28	Mechanical Room	3'-0"	6'-8"	Steel	Painted	No Knob (Push & Pull handle)
29	Rest Room	2'-6"	6'-8"	Steel	Painted	Lockable Inside
30	Mechanical Room	8'-0"	8'-0"	Steel	Factory	Overhead Steel Insulated (Lockable)
31	Freezer	3'-0"	6'-8"	Wood	Factory	Insulated Freezer Door

Table 36—Door Schedule

NOTE: Owner may need to furnish cooler doors, freezer door, and double swing doors to contractor.

Concrete Finish Schedule

Room No.	Room Name		Floor Drains	Insulation Thickness Under floor	Remarks
100	Retail Area		1		
101	Public Rest Room		0		
102	Employee Rest Room		0		
103	Break Area		0		
104	Processing Room		1	2"	
105	Office		0		
106	Inspection Office		0		
107	Dry Storage		0		
108	Hallway		1		
109	Curing Cooler		1	2"	
110	Seasoning Room		0		
111	Sausage Kitchen		1	2"	
112	Smoke Room		1		Trench Drain
113	Finished Product Cooler		1	2"	
114	Pens		1		
115	Kill Floor		1		Trench Drain
116	Pre chill Cooler		1	2"	
117	Holding Cooler		1	2"	
118	Inedible Cooler		1	2"	
119	Rest Room		0		
120	Mechanical Room		1		
121	Freezer		0	8"	
122	Sharp Freezer		0	8"	

Table 37—Concrete Finish Schedule

NOTES:

- All Floors will be concrete with a non-slip finish (4000#).
- All floors 5" thick with rebar spaced at 2' on center and places on 2-1/2" chairs.
- Floor slopes to drains have to be 3/16" per foot or greater (no standing water on floors).
- Under floor insulation must have a density of 2.5 lbs. per cubic foot or 2" thick equals R-value of R-10.
- Ground under insulated floors must be properly bedded with gravel and/or sand for proper ventilation to avoid ice heaving.

Plumbing Specifications

Room No.	Room Name	Room Size	Remarks
100	Retail Area	14'x32'x10'	1 Floor Drain and 1 Wall-mount handwash sink
101	Public Rest Room	7'x5'x10'	1 Toilet and 1 Wall-mount handwash sink
102	Employee Rest Room	9'8"x5'x10'	1 Toilet 1 Wall-mount handwash sink Enclosed Shower
103	Break Room	16'x17'x10'	Kitchen Sink and 1 Condensate Drain
104	Processing Room	14'x28'x10'	1 Wall-mount handwash sink 1 set of Hose Bibs (Hot & Cold domestic water) 1 Equipment Wash Sink 1 Floor Drain
108	Hallway	5'x17'x10'	1 Floor Drain
109	Curing Cooler	9'x12'x10'	1 Floor Drain
111	Sausage Kitchen	17'x28'x10'	1 set of Hose Bibs (Hot & Cold domestic water) 1 Floor Drain 1 Equipment Wash Sink (3 compartment) 1 Wall-mount handwash sink 1 Condensate Drain (On equipment sink drain)
112	Smoke Rooms	10'x12'x10'	1 Floor Drain (Trench) 1 Cold water hookup for smokehouse 1 Cold water hookup for kettle
113	Finished Product Cooler	6'8"x12'x10'	1 Floor Drain
114	Pens	16'x17'x10'	1 Floor Drain
115	Kill Floor Kill Floor Cupalo	16'x22'x14' 4'x22'x18'	1 Floor Drain (Trench) 2 Wall-mount handwash sinks 2 sets of Hose Bibs (Hot & Cold domestic water)
116	Pre chill Cooler	11'6"x16'x14'	1 Floor Drain and 1 Condensate Drain
117	Holding Cooler	11'x18'x14'	1 Floor Drain
118	Inedible Cooler	12'17'x10'	1 Floor Drain 1 Condensate Drain 1 sets of Hose Bibs (Hot & Cold domestic water)
119	Rest Room	5'x5'x10'	1 Toilet and 1 Wall-mount handwash sink
120	Mechanical Room	17'x22'7'x10'	1 Floor Drain Water Main & Water Heater hookups Power washer hookup

Table 38—Plumbing Specifications

Owner may need to supply wall mount hand wash sinks & equipment wash sinks to contractor.

NOTES:

- All plumbing to meet state and local codes.
- All floor drain and risers to be 4" diameter.
- Condensate drains for refrigeration need to be 2" diameter lines.
- Public and employee rest rooms must be a separate drain line out of building. All water lines surface mounted in plant.
- All water lines 1/2" or larger diameter.
- All floor drains need covers and must have deep seal trap and properly vented.

Electrical Specifications

Room No.	Room Name	Lighting Type	Lighting FCP	Switches	Outlets 115V	Outlets 220V	Fan	Remarks
100	Retail Area	8'VT, HO T8	50	1	4	1		Needs a night light
101	Public Rest Room	4'VT, HO	30	1	1 GFI		1	Fan on with light
102	Employee Rest	4'VT, HO	30	1	1 GFI		1	Fan on with light
103	Break Room	8'VT, HO T8	30	1	4 1 GFI	1		
104	Processing Room	8'VT, HO T8	50	2	4	2		
105	Office	4'VT, HO	50	1	4			
106	Inspection Office	4'VT, HO	50	1	4			
107	Dry Storage	8'VT, HO T8	30	1	1			
108	Hallway	8'VT, HO T8	30					Lights on with Dry Storage light
109	Curing Cooler	8'VT, HO T8	30	1	2			
110	Seasoning Room	8'VT, HO T8	50	1	3			Outlets on separate circuits
111	Sausage Kitchen	8'VT, HO T8	50	2	4	4		
112	Smoke Room	8'VT, HO T8	50	1		2	1	Smoke house needs disconnect box
113	Finished Product	4'VT, HO T8	30					Light switch in Smoke Room
114	Pens	8'VT, HO T8	50				1	Light & Fan switch in Kill Floor
115	Kill Floor	8'VT, HO T8	50	4	4	2	1	
116	Pre chill Cooler	8'VT, HO T8	30					Light switch in Kill Floor
117	Holding Cooler	8'VT, HO T8	30					Light switch in Processing Room
118	Inedible Cooler	8'VT, HO T8	30	2	1		1	
119	Rest Room	Incandescent	30	1	1 GFI			
120	Mechanical Room	8'VT, HO T8	50	2	4	2	3	Main Power and Panels
121	Freezer	Incandescent	30	1				1 switch in Mechanical Room
122	Sharp Freezer	Incandescent	50					Lights on with Freezer lights

Table 39—Electrical Specifications

NOTES:

- Lights shown on drawing are only showing placement between rails, beams, etc. (may need more or less lights).
- Owner may change lighting type, but lighting foot candle power (FCP) must be at least what is shown on specifications. Need lighted exit signs wherever needed by code.
- Need emergency lighting wherever needed by code.
- All pvc conduit used in all rooms (metal conduit can be used in mechanical room and above ceilings only). No #14 wire used.
- Must bid Square D equipment only.
- GFI outlets must have lighted trip light.
- This specification sheet does not include any refrigeration electrical needs (will be provided by refrigeration supplier).

Refrigeration Room Specifications

Room No.	Room Name	Room Size	Ceiling R-value	Walls R-value	Floor R-value	Workers in Room	Product Temp In	Product Temp Out	Remarks
104	Processing Room	14'x28'x10'	30	23	40	6	40 ⁰ F	45 ⁰ F	Run room temp at 55 ⁰ F
109	Curing Cooler	9'x12'x10'	30	23	10	0	50 ⁰ F	36 ⁰ F	Cool 1500# product in 24 hours
111	Sausage Kitchen	17'x28'x10'	30	23	10	3	40 ⁰ F	55 ⁰ F	Run room temp at 55 ⁰ F
113	Finished Product Cooler	6'7"x12'x10'	30	23	10	0	120 ⁰ F	40 ⁰ F	Cool 1000# product in 12 hours
116	Pre chill Cooler	11'6"x16'x14'	30	23	10	0	100 ⁰ F	40 ⁰ F	Cool 6000# in 24 hours
117	Holding Cooler	11'x28'x14'	30	23	10	0	40 ⁰ F	34 ⁰ F	Hold 20000# at 34-36 ⁰ F
118	Inedible Cooler	12'x17'x10'	30	23	10	0	100 ⁰ F	50-60 ⁰ F	Run room temp at 50 ⁰ F 6000# product in 48 hours
121	Freezer	23'x35'x10'	30	23	40	0	0 ⁰ F	0 ⁰ F	Hold frozen product 30000#
122	Sharp Freezer	10'x10'x10'	30	23	40	0	50 ⁰ F	-20 ⁰ F	3000# in 12 hours

Table 40—Refrigeration Room Specifications

NOTES:

- Need to supply electrical needs for refrigeration to electrical contractor.
- Refrigeration lines should be insulated and covered with PVC or other sealed vapor barrier to avoid condensation.

APPENDIX 12—FINANCIAL PRO FORMAS FOR 4 ALTERNATIVES

Financial Forecasts

On the following pages are financial pro formas for the 4 alternatives. There are quite literally a near infinite number of variable inputs to drive an analysis for each alternative. As such, we took the 4 alternatives and used somewhat conservative numbers for the automatic calculations. No doubt there are other takes on what these numbers might be. On the following pages, those inputs are shown in blue.

The pro formas were generated using an Excel workbook with integrated worksheets. This utility is provided on the included CD and on the consultant's website at <http://www.jirwinconsulting.com/delnortessmallscalemeatprocessing.htm>.

Alternative 1— Large Plant, 5,250 sq. ft

NOTE: Areas in blue are inputs.

Revenue & Direct Costs										
Alternative 1	% of			quantity/	revenue/	Production Assumptions for 1 Shift				
Revenue Assumptions	production	fee	unit	shift/year	shift/year	rate	unit	quantity	hang wt	beef equiv
Slaughter (beef)		\$100.00	hd	800	\$80,000	9	hrs/animal	800	550	800
Slaughter (sheep/goat)		\$50.00	hd	400	\$20,000	2.5	hrs/animal	400	42	111
Slaughter (pig)		\$70.00	hd	400	\$28,000	3	hrs/animal	400	210	133
Processing (beef)		\$0.70	lb	440,000	\$308,000		Total	1600		1044
Processing (sheep/goat)		\$0.70	lb	16800	\$11,760					
Processing (pig)		\$0.70	lb	84000	\$58,800					
Beef patty charges	8.00%	\$0.20	lb	440,000	\$7,040					
Sausage charges			lb	84000	\$0					
Other processing					\$0					
Drop (hides)		\$15.00	steer	800	\$12,000					
Total Revenue/Shift/Year					\$525,600					
Direct Costs										
Labor (FTE = 2000 hrs/year)		% FTE	#hrs		rate	annual cost				
Manager/Cutter		100%	2000		\$25	\$50,000				
Asst Mgr/Cutter		0%	0		\$19	\$0				
Assistant Cutters		200%	4000		\$14	\$56,000				
Other		0%	0			\$0				
Total			6000			\$106,000				
Employer taxes & workers comp					15%	\$15,900				
Employee benefits					15%	\$15,900				
Total Annual Direct Labor Cost						\$137,800				
Supplies			unit		rate					
			hd		\$10	\$16,000				
Waste			beef equiv		\$8	\$8,356				
Laundry			month		\$200	\$2,400				
Total Direct Costs						\$164,556				

Operating (non-production) Costs				
Alternative 1				
Admin Labor (FTE = 2000 hrs/year)	% FTE	#hrs	rate	annual cost
Scheduler/Bookkeeper	50%	1000	\$19	\$19,000
Other	0%	0		\$0
Other	0%	0		\$0
Total		1000		\$19,000
Employer taxes & workers comp			15%	\$2,850
Employee benefits			15%	\$2,850
Total Admin Labor Cost				\$24,700
Other Operating Costs				
		#months	rate	
Transportation/trucking		12	\$500	\$6,000
Utilities		12	\$1,000	\$12,000
Telephone/Office Expense		12	\$200	\$2,400
Rent		12	\$0	\$0
Insurance		12	\$1,250	\$15,000
Property Taxes		12		\$0
Professional fees		12	\$150	\$1,800

Start-up Capital Costs, Loans & Depreciation							
Alternative 1							
Start-up Capital Costs	#Years Depr.			Non-capital Start-up Costs			
Property acquisition:				Recruitment			\$500
Land	0	\$80,000		Training			\$5,000
Buildings	27.5			HACCP			\$5,000
Construction costs:				SSOP development			\$1,000
New construction	27.5	\$525,000		Legal			\$3,000
Building Improvements	15			Accounting			\$1,500
Equipment purchases	7	\$100,000		Label set-up			\$400
Contingency				Misc. small equip.			\$5,000
Total Capital Costs		\$705,000		Total Non-capital Start-up Costs			\$21,400
Financing & Equity							
Grants		\$500,000	<i>Caution: grants may be treated as income</i>				
Owner Capital		\$50,000					
Loan #1		\$100,000					
Loan #2		\$0					
Total Financing & Equity		\$650,000					
NOTE: Working capital loans are entered on Total Operating Worksheet - See Instructions							
Loans	Loan #1	\$100,000		Loan #2	\$0	Total Loans	\$100,000
	Interest Rate	8%		Interest Rate	0%		
	Term (#Yrs)	7		Term (#Yrs)	1		
	Ann. Debt Serv.	(\$19,207.24)		Ann. Debt Serv.	\$0.00		
Loan #1 Schedule	2012	2013	2014	2015	2016	2017	2014
interest	\$8,000	\$7,103	\$6,135	\$5,089	\$3,960	\$2,740	\$1,423
principal	\$11,207	\$12,104	\$13,072	\$14,118	\$15,247	\$16,467	\$17,784
loan balance	\$88,793	\$76,689	\$63,617	\$49,499	\$34,252	\$17,784	\$0
Loan #2 Schedule	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
interest	\$0	\$0	\$0	\$0	\$0	\$0	\$0
principal	\$0	0	0	0	0	0	0
loan balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Total Annual Interest	\$8,000	\$7,103	\$6,135	\$5,089	\$3,960	\$2,740	\$1,423
Total Annual Principal	\$11,207	\$12,104	\$13,072	\$14,118	\$15,247	\$16,467	\$17,784
Depreciation							
Buildings	\$0	\$0	\$0	\$0	\$0	\$0	\$0
New Construction	\$19,091	\$19,091	\$19,091	\$19,091	\$19,091	\$19,091	\$19,091
Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment	\$14,286	\$14,286	\$14,286	\$14,286	\$14,286	\$14,286	\$14,286
Total Depreciation	\$33,377						

Profit & Loss and Cash Flow Projections								
Alternative 1								
Gross Revenue		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
#shifts/year		0.5	1	1	1	1	1	1
Slaughter (beef)		\$40,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000
Slaughter (sheep/goat)		\$10,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Slaughter (pig)		\$14,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000
Processing (beef)		\$154,000	\$308,000	\$308,000	\$308,000	\$308,000	\$308,000	\$308,000
Processing (sheep/goat)		\$5,880	\$11,760	\$11,760	\$11,760	\$11,760	\$11,760	\$11,760
Processing (pig)		\$29,400	\$58,800	\$58,800	\$58,800	\$58,800	\$58,800	\$58,800
Beef patties		\$3,520	\$7,040	\$7,040	\$7,040	\$7,040	\$7,040	\$7,040
Sausage		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other processing		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Drop (hides)		\$6,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
Total Gross Revenue		\$262,800	\$525,600	\$525,600	\$525,600	\$525,600	\$525,600	\$525,600
Less Direct Costs								
Labor - Direct		\$68,900	\$137,800	\$137,800	\$137,800	\$137,800	\$137,800	\$137,800
Supplies		\$8,000	\$16,000	\$16,000	\$16,000	\$16,000	\$16,000	\$16,000
Waste Removal		\$4,178	\$8,356	\$8,356	\$8,356	\$8,356	\$8,356	\$8,356
Laundry		\$1,200	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400
Net Revenue		\$181,722	\$363,444	\$363,444	\$363,444	\$363,444	\$363,444	\$363,444
Other Income: _____								
Total Revenue		\$181,722	\$363,444	\$363,444	\$363,444	\$363,444	\$363,444	\$363,444
Operating Costs								
Labor - Admin		\$24,700	\$24,700	\$24,700	\$24,700	\$24,700	\$24,700	\$24,700
Transportation/trucking		\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
Utilities		\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
Telephone/Office Expense		\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400
Rent		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Insurance		\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Property Taxes		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Professional fees		\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800
Maint./contingency (% of total income)	7%	\$12,721	\$25,441	\$25,441	\$25,441	\$25,441	\$25,441	\$25,441
Interest on term debt		\$8,000	\$7,103	\$6,135	\$5,089	\$3,960	\$2,740	\$1,423
Interest on line of credit (%)	10%	////////////////	\$11,000	\$14,000	\$2,500	\$0	\$0	\$0
Start Up Costs		\$21,400	////////////////	////////////////	////////////////	////////////////	////////////////	////////////////

Total Operating Costs		\$104,021	\$105,445	\$107,476	\$94,930	\$91,301	\$90,081	\$88,764
Net Operating Income Before Depreciation		\$77,702	\$258,000	\$255,968	\$268,514	\$272,143	\$273,363	\$274,681
Depreciation		\$33,377	\$33,377	\$33,377	\$33,377	\$33,377	\$33,377	\$33,377
Profit before Taxes (NBT)		\$44,325	\$224,623	\$222,592	\$235,137	\$238,767	\$239,987	\$241,304
Income Taxes (%)	40%	\$17,730	\$89,849	\$89,037	\$94,055	\$95,507	\$95,995	\$96,522
Profit after Taxes (NAT)		\$26,595	\$134,774	\$133,555	\$141,082	\$143,260	\$143,992	\$144,782
Annual Cash Flow								
Beginning Cash Balance		0	\$103,764	\$289,811	\$360,858	\$425,658	\$515,417	\$604,323
Cash In During the Year								
Owners Capital		\$50,000						
Grants		\$500,000						
Term loans		\$100,000						
Working Capital Line of credit		\$110,000	140,000	25,000				
Operating Income		\$181,722	\$363,444	\$363,444	\$363,444	\$363,444	\$363,444	\$363,444
Other cash in								
Total Cash In		\$941,722	\$503,444	\$388,444	\$363,444	\$363,444	\$363,444	\$363,444
Cash Out During the Year								
Capital Expenditures		\$705,000						
Repayment of loan principal		\$11,207	\$12,104	\$13,072	\$14,118	\$15,247	\$16,467	\$17,784
Repayment of credit line principal		////////////////////	\$110,000	\$140,000	\$25,000	\$0	\$0	\$0
Operating Expenses (before depr & taxes)		\$104,021	\$105,445	\$107,476	\$94,930	\$91,301	\$90,081	\$88,764
Income Taxes paid		\$17,730	\$89,849	\$89,037	\$94,055	\$95,507	\$95,995	\$96,522
Owner's withdrawals					\$70,541	\$71,630	\$71,996	\$72,391
Other cash out								
Total Cash Out		\$837,958	\$317,398	\$349,585	\$298,645	\$273,685	\$274,539	\$275,461
Ending Cash Balance		\$103,764	\$289,811	\$360,858	\$425,658	\$515,417	\$604,323	\$692,306

Alternative 2—Small Plant, 2,600 sq. ft

Revenue & Direct Costs										
Alternative 2										
	% of			quantity/	revenue/	Production Assumptions for 1 Shift				
Revenue Assumptions	production	fee	unit	shift/year	shift/year	rate	unit	quantity	hang wt	beef equiv
Slaughter (beef)		\$100.00	hd	500	\$50,000	9	hrs/animal	500	550	500
Slaughter (sheep/goat)		\$50.00	hd	300	\$15,000	2.5	hrs/animal	300	42	83
Slaughter (pig)		\$70.00	hd	300	\$21,000	3	hrs/animal	300	210	100
Processing (beef)		\$0.70	lb	275,000	\$192,500		Total	1100		683
Processing (sheep/goat)		\$0.70	lb	12600	\$8,820					
Processing (pig)		\$0.70	lb	63000	\$44,100					
Beef patty charges	8.00%	\$0.20	lb	275,000	\$4,400					
Sausage charges			lb	63000	\$0					
Other processing					\$0					
Drop (hides)		\$15.00	steer	500	\$7,500					
Total Revenue/Shift/Year					\$343,320					
Direct Costs										
Labor (FTE = 2000 hrs/year)		% FTE	#hrs		rate	annual cost				
Manager/Cutter		100%	2000		\$25	\$50,000				
Asst Mgr/Cutter		0%	0		\$19	\$0				
Assistant Cutters		200%	4000		\$14	\$56,000				
Other		0%	0			\$0				
Total			6000			\$106,000				
Employer taxes & workers comp					15%	\$15,900				
Employee benefits					15%	\$15,900				
Total Annual Direct Labor Cost						\$137,800				
			unit		rate					
Supplies			hd		\$10	\$11,000				
Waste			beef equiv		\$8	\$5,467				
Laundry			month		\$200	\$2,400				
Total Direct Costs						\$156,667				

Operating (non-production) Costs				
Alternative 2				
Admin Labor (FTE = 2000 hrs/year)	% FTE	#hrs	rate	annual cost
Scheduler/Bookkeeper	50%	1000	\$19	\$19,000
Other	0%	0		\$0
Other	0%	0		\$0
Total		1000		\$19,000
Employer taxes & workers comp			15%	\$2,850
Employee benefits			15%	\$2,850
Total Admin Labor Cost				\$24,700
Other Operating Costs				
		#months	rate	
Transportation/trucking		12	\$500	\$6,000
Utilities		12	\$800	\$9,600
Telephone/Office Expense		12	\$200	\$2,400
Rent		12	\$0	\$0
Insurance		12	\$1,250	\$15,000
Property Taxes		12		\$0
Professional fees		12	\$150	\$1,800

Start-up Capital Costs, Loans & Depreciation							
Alternative 2							
Start-up Capital Costs	#Years Depr.			Non-capital Start-up Costs			
Property acquisition:				Recruitment			\$500
Land	0	\$80,000		Training			\$5,000
Buildings	27.5			HACCP			\$5,000
Construction costs:				SSOP development			\$1,000
New construction	27.5	\$260,000		Legal			\$3,000
Building Improvements	15			Accounting			\$1,500
Equipment purchases	7	\$100,000		Label set-up			\$400
Contingency				Misc. small equip.			\$5,000
Total Capital Costs		\$440,000		Total Non-capital Start-up Costs			\$21,400
Financing & Equity							
Grants		\$300,000	<i>Caution: grants may be treated as income</i>				
Owner Capital		\$50,000					
Loan #1		\$100,000					
Loan #2		\$0					
Total Financing & Equity		\$450,000					
NOTE: Working capital loans are entered on Total Operating Worksheet - See Instructions							
Loans	Loan #1	\$100,000		Loan #2	\$0	Total Loans	\$100,000
	Interest Rate	8%		Interest Rate	0%		
	Term (#Yrs)	7		Term (#Yrs)	1		
	Ann. Debt Serv.	(\$19,207.24)		Ann. Debt Serv.	\$0.00		
Loan #1 Schedule	2012	2013	2014	2015	2016	2017	2018
interest	\$8,000	\$7,103	\$6,135	\$5,089	\$3,960	\$2,740	\$1,423
principal	\$11,207	\$12,104	\$13,072	\$14,118	\$15,247	\$16,467	\$17,784
loan balance	\$88,793	\$76,689	\$63,617	\$49,499	\$34,252	\$17,784	\$0
Loan #2 Schedule	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
interest	\$0	\$0	\$0	\$0	\$0	\$0	\$0
principal	\$0	0	0	0	0	0	0
loan balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Total Annual Interest	\$8,000	\$7,103	\$6,135	\$5,089	\$3,960	\$2,740	\$1,423
Total Annual Principal	\$11,207	\$12,104	\$13,072	\$14,118	\$15,247	\$16,467	\$17,784
Depreciation							
Buildings	\$0	\$0	\$0	\$0	\$0	\$0	\$0
New Construction	\$9,455	\$9,455	\$9,455	\$9,455	\$9,455	\$9,455	\$9,455
Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment	\$14,286	\$14,286	\$14,286	\$14,286	\$14,286	\$14,286	\$14,286
Total Depreciation	\$23,740						

Profit & Loss and Cash Flow Projections								
Alternative 2								
Gross Revenue		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
#shifts/year		0.5	1	1	1	1	1	1
Slaughter (beef)		\$25,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Slaughter (sheep/goat)		\$7,500	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Slaughter (pig)		\$10,500	\$21,000	\$21,000	\$21,000	\$21,000	\$21,000	\$21,000
Processing (beef)		\$96,250	\$192,500	\$192,500	\$192,500	\$192,500	\$192,500	\$192,500
Processing (sheep/goat)		\$4,410	\$8,820	\$8,820	\$8,820	\$8,820	\$8,820	\$8,820
Processing (pig)		\$22,050	\$44,100	\$44,100	\$44,100	\$44,100	\$44,100	\$44,100
Beef patties		\$2,200	\$4,400	\$4,400	\$4,400	\$4,400	\$4,400	\$4,400
Sausage		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other processing		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Drop (hides)		\$3,750	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500
Total Gross Revenue		\$171,660	\$343,320	\$343,320	\$343,320	\$343,320	\$343,320	\$343,320
Less Direct Costs								
Labor - Direct		\$68,900	\$137,800	\$137,800	\$137,800	\$137,800	\$137,800	\$137,800
Supplies		\$5,500	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000
Waste Removal		\$2,733	\$5,467	\$5,467	\$5,467	\$5,467	\$5,467	\$5,467
Laundry		\$1,200	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400
Net Revenue		\$94,527	\$189,053	\$189,053	\$189,053	\$189,053	\$189,053	\$189,053
Other Income: _____								
Total Revenue		\$94,527	\$189,053	\$189,053	\$189,053	\$189,053	\$189,053	\$189,053
Operating Costs								
Labor - Admin		\$24,700	\$24,700	\$24,700	\$24,700	\$24,700	\$24,700	\$24,700
Transportation/trucking		\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
Utilities		\$9,600	\$9,600	\$9,600	\$9,600	\$9,600	\$9,600	\$9,600
Telephone/Office Expense		\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400
Rent		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Insurance		\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Property Taxes		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Professional fees		\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800
Maint./contingency (% of total income)	7%	\$6,617	\$13,234	\$13,234	\$13,234	\$13,234	\$13,234	\$13,234
Interest on term debt		\$8,000	\$7,103	\$6,135	\$5,089	\$3,960	\$2,740	\$1,423
Interest on line of credit (%)	10%	////////////////	\$11,000	\$14,000	\$2,500	\$0	\$0	\$0
Start Up Costs		\$21,400	////////////////	////////////////	////////////////	////////////////	////////////////	////////////////

Total Operating Costs		\$95,517	\$90,837	\$92,869	\$80,323	\$76,694	\$75,474	\$74,156
Net Operating Income Before Depreciation		-\$990	\$98,216	\$96,184	\$108,730	\$112,360	\$113,579	\$114,897
Depreciation		\$23,740	\$23,740	\$23,740	\$23,740	\$23,740	\$23,740	\$23,740
Profit before Taxes (NBT)		-\$24,730	\$74,476	\$72,444	\$84,990	\$88,619	\$89,839	\$91,157
Income Taxes (%)	40%	\$0	\$29,790	\$28,978	\$33,996	\$35,448	\$35,936	\$36,463
Profit after Taxes (NAT)		-\$24,730	\$44,686	\$43,467	\$50,994	\$53,172	\$53,904	\$54,694
Annual Cash Flow								
Beginning Cash Balance		0	\$107,803	\$194,125	\$165,447	\$175,566	\$210,645	\$244,870
Cash In During the Year								
Owners Capital		\$50,000						
Grants		\$300,000						
Term loans		\$100,000						
Working Capital Line of credit		\$110,000	140,000	25,000				
Operating Income		\$94,527	\$189,053	\$189,053	\$189,053	\$189,053	\$189,053	\$189,053
Other cash in								
Total Cash In		\$654,527	\$329,053	\$214,053	\$189,053	\$189,053	\$189,053	\$189,053
Cash Out During the Year								
Capital Expenditures		\$440,000						
Repayment of loan principal		\$11,207	\$12,104	\$13,072	\$14,118	\$15,247	\$16,467	\$17,784
Repayment of credit line principal		////////////////////	\$110,000	\$140,000	\$25,000	\$0	\$0	\$0
Operating Expenses (before depr & taxes)		\$95,517	\$90,837	\$92,869	\$80,323	\$76,694	\$75,474	\$74,156
Income Taxes paid		\$0	\$29,790	\$28,978	\$33,996	\$35,448	\$35,936	\$36,463
Owner's withdrawals					\$25,497	\$26,586	\$26,952	\$27,347
Other cash out								
Total Cash Out		\$546,724	\$242,731	\$274,919	\$178,934	\$153,975	\$154,828	\$155,751
Ending Cash Balance		\$107,803	\$194,125	\$165,447	\$175,566	\$210,645	\$244,870	\$278,172

Alternative 3—MSU

Revenue & Direct Costs										
Alternative 3										
	% of			quantity/	revenue/	Production Assumptions for 1 Shift				
Revenue Assumptions	production	fee	unit	shift/year	shift/year	rate	unit	quantity	hang wt	beef equiv
Slaughter (beef)		\$100.00	hd	500	\$50,000	9	hrs/animal	500	550	500
Slaughter (sheep/goat)		\$50.00	hd	250	\$12,500	2.5	hrs/animal	250	42	69
Slaughter (pig)		\$70.00	hd	250	\$17,500	3	hrs/animal	250	210	83
Processing (beef)		\$0.70	lb	275,000	\$192,500		Total	1000		653
Processing (sheep/goat)		\$0.70	lb	10500	\$7,350					
Processing (pig)		\$0.70	lb	52500	\$36,750					
Beef patty charges	8.00%	\$0.20	lb	275,000	\$4,400					
Sausage charges			lb	52500	\$0					
Other processing					\$0					
Drop (hides)		\$15.00	steer	500	\$7,500					
Total Revenue/Shift/Year					\$328,500					
Direct Costs										
Labor (FTE = 2000 hrs/year)		% FTE	#hrs	rate	annual cost					
Manager/Cutter		100%	2000	\$25	\$50,000					
Asst Mgr/Cutter		0%	0	\$19	\$0					
Assistant Cutters		200%	4000	\$14	\$56,000					
Other		0%	0		\$0					
Total			6000		\$106,000					
Employer taxes & workers comp				15%	\$15,900					
Employee benefits				15%	\$15,900					
Total Annual Direct Labor Cost					\$137,800					
Supplies			unit	rate						
			hd	\$10	\$10,000					
Waste			beef equiv	\$8	\$5,222					
Laundry			month	\$200	\$2,400					
Total Direct Costs					\$155,422					

Operating (non-production) Costs				
Alternative 3				
Admin Labor (FTE = 2000 hrs/year)	% FTE	#hrs	rate	annual cost
Scheduler/Bookkeeper	0%	0	\$19	\$0
Other	0%	0		\$0
Other	0%	0		\$0
Total		0		\$0
Employer taxes & workers comp			15%	\$0
Employee benefits			15%	\$0
Total Admin Labor Cost				\$0
Other Operating Costs				
		#months	rate	
Transportation/trucking		12	\$1,000	\$12,000
Utilities		12	\$750	\$9,000
Telephone/Office Expense		12	\$200	\$2,400
Rent		12	\$0	\$0
Insurance		12	\$1,250	\$15,000
Property Taxes		12		\$0
Professional fees		12	\$150	\$1,800

Start-up Capital Costs, Loans & Depreciation							
Alternative 3							
Start-up Capital Costs	#Years Depr.			Non-capital Start-up Costs			
Property acquisition:				Recruitment			\$500
Land	0	\$40,000		Training			\$5,000
Buildings	27.5			HACCP			\$5,000
Construction costs:				SSOP development			\$1,000
New construction	27.5	\$115,000		Legal			\$3,000
Building Improvements	15			Accounting			\$1,500
Equipment purchases	7	\$188,000		Label set-up			\$400
Contingency				Misc. small equip.			\$5,000
Total Capital Costs		\$343,000		Total Non-capital Start-up Costs			\$21,400
Financing & Equity							
Grants		\$250,000	<i>Caution: grants may be treated as income</i>				
Owner Capital		\$50,000					
Loan #1		\$75,000					
Loan #2		\$0					
Total Financing & Equity		\$375,000					
NOTE: Working capital loans are entered on Total Operating Worksheet - See Instructions							
Loans	Loan #1	\$75,000		Loan #2	\$0	Total Loans	\$75,000
	Interest Rate	8%		Interest Rate	0%		
	Term (#Yrs)	7		Term (#Yrs)	1		
	Ann. Debt Serv.	(\$14,405.43)		Ann. Debt Serv.	\$0.00		
Loan #1 Schedule	2008	2009	2010	2011	2012	2013	2014
interest	\$6,000	\$5,328	\$4,601	\$3,817	\$2,970	\$2,055	\$1,067
principal	\$8,405	\$9,078	\$9,804	\$10,588	\$11,435	\$12,350	\$13,338
loan balance	\$66,595	\$57,517	\$47,713	\$37,124	\$25,689	\$13,338	\$0
Loan #2 Schedule	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
interest	\$0	\$0	\$0	\$0	\$0	\$0	\$0
principal	\$0	0	0	0	0	0	0
loan balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Total Annual Interest	\$6,000	\$5,328	\$4,601	\$3,817	\$2,970	\$2,055	\$1,067
Total Annual Principal	\$8,405	\$9,078	\$9,804	\$10,588	\$11,435	\$12,350	\$13,338
Depreciation							
Buildings	\$0	\$0	\$0	\$0	\$0	\$0	\$0
New Construction	\$4,182	\$4,182	\$4,182	\$4,182	\$4,182	\$4,182	\$4,182
Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment	\$26,857	\$26,857	\$26,857	\$26,857	\$26,857	\$26,857	\$26,857
Total Depreciation	\$31,039						

Profit & Loss and Cash Flow Projections								
Alternative 3								
Gross Revenue		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
#shifts/year		0.5	1	1	1	1	1	1
Slaughter (beef)		\$25,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Slaughter (sheep/goat)		\$6,250	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500
Slaughter (pig)		\$8,750	\$17,500	\$17,500	\$17,500	\$17,500	\$17,500	\$17,500
Processing (beef)		\$96,250	\$192,500	\$192,500	\$192,500	\$192,500	\$192,500	\$192,500
Processing (sheep/goat)		\$3,675	\$7,350	\$7,350	\$7,350	\$7,350	\$7,350	\$7,350
Processing (pig)		\$18,375	\$36,750	\$36,750	\$36,750	\$36,750	\$36,750	\$36,750
Beef patties		\$2,200	\$4,400	\$4,400	\$4,400	\$4,400	\$4,400	\$4,400
Sausage		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other processing		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Drop (hides)		\$3,750	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500
Total Gross Revenue		\$164,250	\$328,500	\$328,500	\$328,500	\$328,500	\$328,500	\$328,500
Less Direct Costs								
Labor - Direct		\$68,900	\$137,800	\$137,800	\$137,800	\$137,800	\$137,800	\$137,800
Supplies		\$5,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Waste Removal		\$2,611	\$5,222	\$5,222	\$5,222	\$5,222	\$5,222	\$5,222
Laundry		\$1,200	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400
Net Revenue		\$87,739	\$175,478	\$175,478	\$175,478	\$175,478	\$175,478	\$175,478
Other Income: _____								
Total Revenue		\$87,739	\$175,478	\$175,478	\$175,478	\$175,478	\$175,478	\$175,478
Operating Costs								
Labor - Admin		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transportation/trucking		\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
Utilities		\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
Telephone/Office Expense		\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400
Rent		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Insurance		\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Property Taxes		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Professional fees		\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800
Maint./contingency (% of total income)	7%	\$6,142	\$12,283	\$12,283	\$12,283	\$12,283	\$12,283	\$12,283
Interest on term debt		\$6,000	\$5,328	\$4,601	\$3,817	\$2,970	\$2,055	\$1,067
Interest on line of credit (%)	10%	////////////////	\$11,000	\$14,000	\$2,500	\$0	\$0	\$0
Start Up Costs		\$21,400	////////////////	////////////////	////////////////	////////////////	////////////////	////////////////

Total Operating Costs		\$73,742	\$68,811	\$71,085	\$58,800	\$55,453	\$54,539	\$53,551
Net Operating Income Before Depreciation		\$13,997	\$106,667	\$104,393	\$116,677	\$120,024	\$120,939	\$121,927
Depreciation		\$31,039	\$31,039	\$31,039	\$31,039	\$31,039	\$31,039	\$31,039
Profit before Taxes (NBT)		-\$17,042	\$75,628	\$73,354	\$85,638	\$88,985	\$89,900	\$90,888
Income Taxes (%)	40%	\$0	\$30,251	\$29,342	\$34,255	\$35,594	\$35,960	\$36,355
Profit after Taxes (NAT)		-\$17,042	\$45,377	\$44,012	\$51,383	\$53,391	\$53,940	\$54,533
Annual Cash Flow								
Beginning Cash Balance		0	\$147,592	\$244,930	\$227,267	\$248,409	\$294,708	\$340,367
Cash In During the Year								
Owners Capital		\$50,000						
Grants		\$250,000						
Term loans		\$75,000						
Working Capital Line of credit		\$110,000	140,000	25,000				
Operating Income		\$87,739	\$175,478	\$175,478	\$175,478	\$175,478	\$175,478	\$175,478
Other cash in								
Total Cash In		\$572,739	\$315,478	\$200,478	\$175,478	\$175,478	\$175,478	\$175,478
Cash Out During the Year								
Capital Expenditures		\$343,000						
Repayment of loan principal		\$8,405	\$9,078	\$9,804	\$10,588	\$11,435	\$12,350	\$13,338
Repayment of credit line principal		////////////////////	\$110,000	\$140,000	\$25,000	\$0	\$0	\$0
Operating Expenses (before depr & taxes)		\$73,742	\$68,811	\$71,085	\$58,800	\$55,453	\$54,539	\$53,551
Income Taxes paid		\$0	\$30,251	\$29,342	\$34,255	\$35,594	\$35,960	\$36,355
Owner's withdrawals					\$25,692	\$26,696	\$26,970	\$27,266
Other cash out								
Total Cash Out		\$425,147	\$218,140	\$250,230	\$154,336	\$129,179	\$129,819	\$130,511
Ending Cash Balance		\$147,592	\$244,930	\$227,267	\$248,409	\$294,708	\$340,367	\$385,334

Alternative 4—Custom

Revenue Assumptions / Alternative 4	production	fee	unit	shift/year	shift/year	rate	unit	quantity	hang wt	beef equiv
Slaughter (beef)		\$105.00	hd	300	\$31,500	9	hrs/animal	300	550	300
Slaughter (sheep/goat)		\$70.00	hd	75	\$5,250	2.5	hrs/animal	75	42	21
Slaughter (pig)		\$70.00	hd	75	\$5,250	3	hrs/animal	75	210	25
Processing (beef)		\$0.70	lb	165,000	\$115,500		Total	450		346
Processing (sheep/goat)		\$0.70	lb	3150	\$2,205					
Processing (pig)		\$0.70	lb	15750	\$11,025					
Beef patty charges	8.00%	\$0.20	lb	165,000	\$2,640					
Sausage charges			lb	15750	\$0					
Other processing					\$0					
Drop (hides)		\$15.00	steer	300	\$4,500					
Total Revenue/Shift/Year					\$177,870					
Direct Costs										
Labor (FTE = 2000 hrs/year)		% FTE	#hrs	rate	annual cost					
Manager/Cutter		100%	2000	\$25	\$50,000					
Asst Mgr/Cutter		0%	0	\$19	\$0					
Assistant Cutters		100%	2000	\$14	\$28,000					
Other		0%	0		\$0					
Total			4000		\$78,000					
Employer taxes & workers comp				15%	\$11,700					
Employee benefits				15%	\$11,700					
Total Annual Direct Labor Cost					\$101,400					
Supplies			unit	rate						
			hd	\$10	\$4,500					
Waste			beef equiv	\$8	\$2,767					
Laundry			month	\$200	\$2,400					
Total Direct Costs					\$111,067					

Operating (non-production) Costs				
Alternative 4				
Admin Labor (FTE = 2000 hrs/year)	% FTE	#hrs	rate	annual cost
Scheduler/Bookkeeper	0%	0	\$19	\$0
Other	0%	0		\$0
Other	0%	0		\$0
Total		0		\$0
Employer taxes & workers comp			15%	\$0
Employee benefits			15%	\$0
Total Admin Labor Cost				\$0
Other Operating Costs				
		#months	rate	
Transportation/trucking		12	\$750	\$9,000
Utilities		12	\$400	\$4,800
Telephone/Office Expense		12	\$200	\$2,400
Rent		12	\$0	\$0
Insurance		12	\$1,000	\$12,000
Property Taxes		12		\$0
Professional fees		12	\$150	\$1,800

Start-up Capital Costs, Loans & Depreciation							
Alternative 4							
Start-up Capital Costs	#Years Depr.			Non-capital Start-up Costs			
Property acquisition:				Recruitment			\$500
Land	0	\$40,000		Training			\$5,000
Buildings	27.5			HACCP			
Construction costs:				SSOP development			
New construction	27.5	\$115,000		Legal			\$1,500
Building Improvements	15			Accounting			\$1,500
Equipment purchases	7	\$15,000		Label set-up			\$200
Contingency				Misc. small equip.			\$5,000
Total Capital Costs		\$170,000		Total Non-capital Start-up Costs			\$13,700
Financing & Equity							
Grants		\$150,000	<i>Caution: grants may be treated as income</i>				
Owner Capital		\$10,000					
Loan #1		\$50,000					
Loan #2		\$0					
Total Financing & Equity		\$210,000					
NOTE: Working capital loans are entered on Total Operating Worksheet - See Instructions							
Loans	Loan #1	\$50,000		Loan #2	\$0	Total Loans	\$50,000
	Interest Rate	8%		Interest Rate	0%		
	Term (#Yrs)	7		Term (#Yrs)	1		
	Ann. Debt Serv.	(\$9,603.62)		Ann. Debt Serv.	\$0.00		
Loan #1 Schedule	2012	2013	2014	2015	2016	2017	2018
interest	\$4,000	\$3,552	\$3,068	\$2,545	\$1,980	\$1,370	\$711
principal	\$5,604	\$6,052	\$6,536	\$7,059	\$7,624	\$8,234	\$8,892
loan balance	\$44,396	\$38,344	\$31,808	\$24,749	\$17,126	\$8,892	\$0
Loan #2 Schedule	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
interest	\$0	\$0	\$0	\$0	\$0	\$0	\$0
principal	\$0	0	0	0	0	0	0
loan balance	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Total Annual Interest	\$4,000	\$3,552	\$3,068	\$2,545	\$1,980	\$1,370	\$711
Total Annual Principal	\$5,604	\$6,052	\$6,536	\$7,059	\$7,624	\$8,234	\$8,892
Depreciation							
Buildings	\$0	\$0	\$0	\$0	\$0	\$0	\$0
New Construction	\$4,182	\$4,182	\$4,182	\$4,182	\$4,182	\$4,182	\$4,182
Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment	\$2,143	\$2,143	\$2,143	\$2,143	\$2,143	\$2,143	\$2,143
Total Depreciation	\$6,325						

Profit & Loss and Cash Flow Projections								
Alternative 4								
Gross Revenue		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
#shifts/year		0.5	1	1	1	1	1	1
Slaughter (beef)		\$15,750	\$31,500	\$31,500	\$31,500	\$31,500	\$31,500	\$31,500
Slaughter (sheep/goat)		\$2,625	\$5,250	\$5,250	\$5,250	\$5,250	\$5,250	\$5,250
Slaughter (pig)		\$2,625	\$5,250	\$5,250	\$5,250	\$5,250	\$5,250	\$5,250
Processing (beef)		\$57,750	\$115,500	\$115,500	\$115,500	\$115,500	\$115,500	\$115,500
Processing (sheep/goat)		\$1,103	\$2,205	\$2,205	\$2,205	\$2,205	\$2,205	\$2,205
Processing (pig)		\$5,513	\$11,025	\$11,025	\$11,025	\$11,025	\$11,025	\$11,025
Beef patties		\$1,320	\$2,640	\$2,640	\$2,640	\$2,640	\$2,640	\$2,640
Sausage		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other processing		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Drop (hides)		\$2,250	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500
Total Gross Revenue		\$88,935	\$177,870	\$177,870	\$177,870	\$177,870	\$177,870	\$177,870
Less Direct Costs								
Labor - Direct		\$50,700	\$101,400	\$101,400	\$101,400	\$101,400	\$101,400	\$101,400
Supplies		\$2,250	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500
Waste Removal		\$1,383	\$2,767	\$2,767	\$2,767	\$2,767	\$2,767	\$2,767
Laundry		\$1,200	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400
Net Revenue		\$34,602	\$69,203	\$69,203	\$69,203	\$69,203	\$69,203	\$69,203
Other Income: _____								
Total Revenue		\$34,602	\$69,203	\$69,203	\$69,203	\$69,203	\$69,203	\$69,203
Operating Costs								
Labor - Admin		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transportation/trucking		\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
Utilities		\$4,800	\$4,800	\$4,800	\$4,800	\$4,800	\$4,800	\$4,800
Telephone/Office Expense		\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400	\$2,400
Rent		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Insurance		\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
Property Taxes		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Professional fees		\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800
Maint./contingency (% of total income)	7%	\$2,422	\$4,844	\$4,844	\$4,844	\$4,844	\$4,844	\$4,844
Interest on term debt		\$4,000	\$3,552	\$3,068	\$2,545	\$1,980	\$1,370	\$711
Interest on line of credit (%)	10%	////////////////	\$11,000	\$14,000	\$2,500	\$0	\$0	\$0
Start Up Costs		\$13,700	////////////////	////////////////	////////////////	////////////////	////////////////	////////////////

Total Operating Costs		\$50,122	\$49,396	\$51,912	\$39,889	\$36,824	\$36,214	\$35,556
Net Operating Income Before Depreciation		-\$15,520	\$19,807	\$17,292	\$29,314	\$32,379	\$32,989	\$33,648
Depreciation		\$6,325	\$6,325	\$6,325	\$6,325	\$6,325	\$6,325	\$6,325
Profit before Taxes (NBT)		-\$21,845	\$13,483	\$10,967	\$22,990	\$26,054	\$26,664	\$27,323
Income Taxes (%)	40%	\$0	\$5,393	\$4,387	\$9,196	\$10,422	\$10,666	\$10,929
Profit after Taxes (NAT)		-\$21,845	\$8,090	\$6,580	\$13,794	\$15,633	\$15,999	\$16,394
Annual Cash Flow								
Beginning Cash Balance		0	\$128,876	\$167,238	\$90,601	\$71,763	\$78,281	\$84,371
Cash In During the Year								
Owners Capital		\$10,000						
Grants		\$150,000						
Term loans		\$50,000						
Working Capital Line of credit		\$110,000	140,000	25,000				
Operating Income		\$34,602	\$69,203	\$69,203	\$69,203	\$69,203	\$69,203	\$69,203
Other cash in								
Total Cash In		\$354,602	\$209,203	\$94,203	\$69,203	\$69,203	\$69,203	\$69,203
Cash Out During the Year								
Capital Expenditures		\$170,000						
Repayment of loan principal		\$5,604	\$6,052	\$6,536	\$7,059	\$7,624	\$8,234	\$8,892
Repayment of credit line principal		////////////////////	\$110,000	\$140,000	\$25,000	\$0	\$0	\$0
Operating Expenses (before depr & taxes)		\$50,122	\$49,396	\$51,912	\$39,889	\$36,824	\$36,214	\$35,556
Income Taxes paid		\$0	\$5,393	\$4,387	\$9,196	\$10,422	\$10,666	\$10,929
Owner's withdrawals					\$6,897	\$7,816	\$7,999	\$8,197
Other cash out								
Total Cash Out		\$225,726	\$170,841	\$202,835	\$88,041	\$62,686	\$63,113	\$63,574
Ending Cash Balance		\$128,876	\$167,238	\$90,601	\$71,763	\$78,281	\$84,371	\$90,000

APPENDIX 12—DEMAND FOR SLAUGHTER AND PROCESSING SERVICES SURVEY

DEMAND FOR SLAUGHTER AND PROCESSING SERVICES SURVEY
 DEL NORTE RURAL CONSERVATION DISTRICT

ZIP code: _____ Nearest cross-roads: _____

1. Currently, I raise livestock and arrange for slaughter/processing :
 Yes No

2. How long have you been in the livestock industry (*check one*)?
 1-5 years 6-10 years 11-20 years 21 years or more

3. I have the potential and interest to raise livestock and arrange for slaughter/processing:
 Yes No

HARVEST CAPACITY

4. Please complete the table (below) with answers to the following questions:
Column A: How many animals do you harvest per year?
Column B: How many animals do you harvest in each 3-month period?
Column C: How many animals could you harvest in the future with better access to a reliable
 USDA- inspected facility?

	A.	B.				C.
		Current Quarterly Harvest				
	Current Annual Harvest (#)	Jan-Mar	Apr-June	Jul-Sept	Oct-Dec	Anticipated Annual Harvest with convenient facility (#)
Beef Cattle						
Dairy Culls						
Veal						
Goat						
Pigs						
Turkey						
Chicken						
Lamb						
Geese / Duck						
Other						

5. If a viable market exists for your products, what would encourage or inhibit you from expanding production beyond your current operating capacity? (apart from access to slaughter and processing services?)

Please return to J. Irwin at 6570 Old Stage Road, Central Point, OR 97502—Questions? call (541)-664-2456
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DEMAND FOR SLAUGHTER AND PROCESSING SERVICES SURVEY
DEL NORTE RURAL CONSERVATION DISTRICT

SLAUGHTER

6. Where do you currently have your animals slaughtered? (Name, Town & State)

Name: _____

Town: _____ State: _____

7. If applicable, how many miles do you have to travel ONE WAY to deliver your livestock?
_____miles

8. What is the estimated cost per animal for slaughter? (Specify species)

<i>Species</i>	<i>Cost</i>
Beef Cattle	
Dairy Culls	
Veal	
Goat	
Pigs	
Turkey	
Chicken	
Lamb	
Geese / Duck	
Other	

Please list other species:

9. If a new slaughter facility were to be established, what qualities would it need for you to choose to bring your animals there? (for example: Better scheduling? Better communication? Located closer to your farm? Other?)

DEMAND FOR SLAUGHTER AND PROCESSING SERVICES SURVEY
DEL NORTE RURAL CONSERVATION DISTRICT

PROCESSING

10. Where do you currently have your meat processed?

Name: _____

Town: _____ State: _____

11. If applicable, how many miles do you have to travel ONE WAY for processing?
_____ miles

12. What is the estimated cost per animal for processing? (Specify species)

<i>Species</i>	<i>Cost</i>
Beef Cattle	
Dairy Culls	
Veal	
Goat	
Pigs	
Turkey	
Chicken	
Lamb	
Geese / Duck	
Other	

Please list other species:

13. If a new processing facility were to be established, what qualities would it need for you bring your animals there? (for example: Better scheduling? Better communication? Located closer to your farm? Other?)

DEMAND FOR SLAUGHTER AND PROCESSING SERVICES SURVEY
DEL NORTE RURAL CONSERVATION DISTRICT

MARKETING & DISTRIBUTION

14. Where do you currently sell your finished meat? (for example: to processing plant, direct retail, farmers' market, on-farm store, wholesaler/distributor, restaurants, institutions)
15. What characteristics do you use to market your product? (for example: grass-fed, specialty breed, organic)
16. If a new slaughter/processing facility were to develop and market a brand(s) of meat, would you be interested in selling your meat to the facility? (*check all that apply*)
- specific cuts whole animals

ADDITIONAL ISSUES

17. If the slaughter/processing facility were to manage the transportation of live animals from farm to facility, would you find this helpful?
- Yes No
18. Would you be interested in investing in a slaughter/processing facility?
- Yes No
19. If a cooperative or other form of business entity of local producers was established to slaughter/process and/or market livestock products, what functions would you want this entity to do for your farm/ranch? (*check all that apply*)
- Slaughtering Aging Packaging/wrapping Marketing
20. Any other comments?

Please provide the information below:

Name: _____
Street/PO Box: _____ State: _____ Zip Code _____
Phone: (____) _____
Email: _____
Farm Name: _____

Do you wish to receive email updates on the project?

Yes No

Please return to J. Irwin at 6570 Old Stage Road, Central Point, OR 97502—Questions? call (541)-664-2456
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APPENDIX 13—PRICES: CARTWRIGHT’S CUSTOM CUTTING AND GAME

Beef	
Cut & Wrap	\$.58 LB
Corning	\$10.00
Hand Wrapped Burger	\$.10 per pound extra on trim weight (\$10.00 minimum)
1 steak per package	\$.10 per pound extra

Hog	
Cut & Wrap	\$.60 LB
Curing Hams and Bacon	\$.70 LB

Curing	
Cure Only	\$.80 LB
Cure Cut and Wrap	\$1.20 LB
Pepper Bacon	Add \$4.00 per Slab

Lamb	
Cut an Wrap	\$60.00 Minimum or \$.60 LB

Emus	\$.60 LB
-------------	----------

Hang Only	
Beef	\$35.00 (14 Days, \$2.00 each day thereafter)
Hogs	\$20.00
Elk	\$35.00 (Maximum 2 weeks)
Deer	\$25.00 (Maximum 2 weeks)
Bear	\$25.00 (Maximum 1 week)

Game Processing	Cut and Wrap (All Boneless)
Deer	\$80.00 Minimum/\$.80 per LB
Elk	\$.75 LB
Bear	\$.75 LB (50% Deposit Required)

Skinning	
Deer	\$35.00
Elk	\$50.00
Bear	\$50.00

Grinding	
Grind Only	\$.55 LB (\$10.00 Minimum)
Grind and Wrap	\$.80 LB (\$15.00 Minimum)
Beef Fat Added	\$.95 LB
Pork Fat Added	\$.95 LB

Sausage Seasoning Added	\$.60 LB (\$10.00 Min.)
50/50 Beef or Pork Added	\$1.49 LB
80% Beef Added	\$2.29 LB
80% Pork Added	\$1.69 LB
Bull Meat Added	\$2.49 LB

All Carcass to Sausage	
Deer or Elk	\$.60 LB Plus Sausage Price

Sausage	MINIMUM 10# to EACH KIND
Hunter Sausage (Sausage Dogs)	\$2.75 LB Apx 30% Gain
Game Salami (Like Summer Sausage)	\$2.75 LB Apx 30% Gain

Jerky	MINIMUM 10# to EACH KIND
Regular Jerky	\$3.00 LB Raw Weight Approximately 50% Yield (Chopped and Formed in one great flavor Sweet Garlic Pepper)
Strip Jerky	\$5.00 LB Raw Weight Approximately 50% Yield (Rounds used only 10 LB Minimum to each flavor—Choose Brown Sugar, Teriyaki, Sweet Hot or Peppered)
Pepperstix	\$3.00 LB Raw Wt. Approximately 70% Yield (Choose Regular or Teriyaki)

APPENDIX 14—PRICES: TAYLOR'S SAUSAGE

Wild Game Sausage Processing

Let the professionals at Taylor's help get the most out of your game or farm grown meats to be made into sausage. Your order is always processed as an individual batch from start to finish! Our entire sausage kitchen is federally inspected and with the experience of four generations of sausage makers, we strive to process your game and farm meats to the highest standards. Your meats to be processed into sausage are handled on an individual batch basis from start to finished product. We do not mix your batch with some other person's meat. This is a very important feature to the conscientious hunter and you should demand this wherever you have meat processed.

Because of the size of our machinery we require twenty five pound batches of meat per type of seasoning. If your batch doesn't weigh out to twenty five pounds, we will add wholesale priced beef or pork to bring your batch up to twenty five pounds so that we can get a good seasoning mix and grind on your meats.

Taylor's custom processes game and farm grown meats into sausage all year long. It is a large segment of our sausage business. We prefer the meats brought in to us to be boned in chunks and very clean. Boning is done by us at extra cost. Do your own skinning and boning and save.

Fall Sausage making is done on a first come first serve basis. We have many hunters freeze their meats and bring them to us in January, February and March. Others clear out meat from their freezers the rest of the year to be made into useable sausage products.

Products Made at Taylor's Sausage from *your* Game or Farm Animals

Fresh Uncooked & Uncured Products

- Pork Sausage (regular, mild, sage & hot maple)
- Pork Sausage Links (regular & sage)
- Hot Italian Links
- Sweet Italian Bulk
- Hot Italian Bulk

Smoked & Cooked Products

- Pepper Sausage (snack size)
- Teriyaki Sticks (snack size)
- Taylor's Beef Stick (snack size)
- German Beef Stick (snack size)
- Smoked Links (regular, hot & extra hot)
- Polish Kielbasa Sausage
- Bratwurst
- German Sausage
- Linguica
- Pepper Sausage (dinner size)
- Hungarian Sausage
- Chorizo

- Knackwurst (dinner size)
- Garlic Franks
- Fancy Wieners
- Salami (chub)
- Summer Sausage (chub)
- Beef Stick (chub)
- Pepper Sausage (chub)
- Pork Sausage Roll
- Thuringer (chub)
- German Beef Stick (chub)
- Pressed and Formed Jerky Strips

Pricing	Sausage Processed from Boneless Meat (Calculated on raw weight)
Salami/Summer Sausage-2# Chub	\$1.59/lb
1# Chubs	\$2.39/lb
Pepper Sticks	\$1.99/lb
Polish, German, Bratwurst	\$2.19/lb
Teriyaki, Black Pepper Jerky	\$2.49/lb
Teriyaki Sticks	\$2.49/lb
Jalapena & Cheddar Pepper Sticks	\$2.59/lb
Weiners	\$2.69/lb
Knife-cut Trailbusters or Jerky	\$5.00/lb
Trailbuster Sticks	\$3.00/lb
Honey Ham & Cheese Sticks	\$2.49/lb
Dried Pepperoni	\$3.00/lb
Extra Cheese	\$.40/lb
Extra Jalapeno	\$.20/lb

Fresh Sausage Products	
Fresh Italian Links (hot or sweet)	\$1.49/lb
Fresh Breakfast Links	\$1.69/lb
Bulk Sausage (1 lb. pkg.)	\$.89/lb
with Maple	\$1.09/lb
Burger Grinding (1 or 2 lb. pkg.)	\$.69/lb

Custom Cutting & Wrapping	
Farm Animals	\$.59/lb - \$59. Min
Game Animals	\$.69/lb - \$69. Min
Hang Only	\$.25/lb. - \$25 min. charge
Extra Wrapping	\$.30/pkg.
Boning for Sausage	\$.49 cents/lb.

Cure and Smoke	
Hams, Bacon, Turkeys, etc	\$.49/lb (Cure & smoke only. No slicing or wrapping.)
With Slicing & Wrapping	\$.90/lb

APPENDIX 15—PRICES: SALANT FAMILY RANCH

<i>Item</i>	<i>Price/Lb</i>	<i>Ave. Lbs/Pkg</i>
Steaks		
Whole Tenderloin (Filet Mignon)	20.45	5
New York Steak—Bulk Slab	13.45	10-12
Beef Rib Steak—2/pkg	13.45	2.1
Boneless Top Sirloin Steak—2” thick	12.45	2-3
Beef Tri-tip & Flat Iron Steak	10.35	1
Boneless Chuck Steak & Flank Steak	9.65	1.5-2
7 Bone Chuck Steak	8.45	3-4
Beef Sirloin Tip Steak	7.55	1.5
Ribs		
Beef Short Ribs—2 to 3/pkg	8.50	3
Roasts		
Beef Chuck Arm Roast, O-bone	5.55	3-4
Beef Cross-rib Roast	6.05	5.5
Beef Chuck Roast, Boneless	7.15	5
Beef Rump Roast, Boneless	7.15	5
Beef Brisket	7.85	5-7
Ground Beef		
Ground Beef, 1 lb pkgs—1 to 5 each	4.50	1
Ground Beef, 1 lb pkgs—6 or more	4.25	1
Ground Beef, 5 lb pkgs	4.00	5

** All cuts come frozen in individual cryovac packages for easy use

Peter Salant, who has raised beef cattle on the Salant Family Ranch in the Little Applegate area for 15 years, revamped his approach in 2005. Until then he sold beef through traditional channels. Now his natural, grain-finished, Angus cross and dairy steers are sold to local restaurants and individual buyers. His 10 restaurant customers, accounting for half of his sales, command the best cuts. But he's learned to market the ground beef, roasts, short ribs and brisket.

"Because there is no middleman, I can sell for a higher price and they're buying for a lower price," Salant said. "Plus, the transportation costs are minimal."

Like many of his peers dealing directly with end users, Salant said there's a learning curve in marketing.

"It's a matter of getting the word out," he said. "Marketing is a key challenge, but I'm getting a website and Facebook page in the next month."¹⁴²

¹⁴² "Conference speakers praise buy-local push: They say there is large potential market here beyond restaurants", Greg Stiles, Mail Tribune, <http://www.mailtribune.com/apps/pbcs.dll/article?AID=/20110210/BIZ/102100316> February 10, 2011

APPENDIX 16—CASE STUDY: CENTRAL COAST AGRICULTURAL COOPERATIVE¹⁴³

Note: As of Spring 2010, the Coast Grown Mobile Processing Unit (MPU) is not in operation, due to financial constraints; the Central Coast Agricultural Cooperative is currently evaluating its options for the future of the MSU, including a potential shift in ownership.

Basic information

Capacity per day: 5 beef 1200-1400lbs; 6 if 700-800 lbs; 10 lambs, goats, or hogs

Hours/day of operation: Up to 12, incl. travel/off-loading

Days/week: 2

Weeks/year: On demand, year-round.

Species: all four-legs

Services: slaughter only

Square feet: 208

#/type of employees: 3: managing butcher, ass't butcher, truck driver

Annual revenues: projecting \$99,000

Price of services: Beef=\$238; Lamb, hog, goat=\$80

Operational costs: \$750/day, direct + indirect (insurance, coordinator, admin., reserves, maintenance)

Retail on-site: no

Wholesale: no

Inspection: USDA

Certified organic: no

Certification agency: n/a

Custom work: All is custom (fee for service). May offer custom-exempt slaughter Saturdays for producers who don't sell the meat.

Source verification on label: done by fabricator; all meat labeled with ranch name

The market opportunity

The Central Coast region of California has a vibrant local food system, with a strong consumer base and marketing infrastructure developed in large part by the “Buy Fresh, Buy Local” public education program created by Central Coast Ag Network (trade name “Central Coast Grown”), a regional non-profit.

By 2007, regional demand for locally raised meat had become large and loud enough to warrant the significant financial and human resources needed to bring that meat from ranch to table – in particular, figuring out processing.

Ranchers in the region were willing to supply the meat, but the closest USDA-inspected slaughter facility (California has no state meat inspection program) was many hours’ drive away. In addition, the closest processing facility had capacity and quality problems.

The people/organizations involved

¹⁴³ http://www.extension.org/pages/Coast_Grown_Mobile_Harvest_Unit

- George Work, a Monterey County rancher who first conceived of the project;
- Central Coast Homegrown Meat Alliance, formed by George, Rex Swan, and other ranchers in the region;
- Sam Farr, Congressman from CA's 17th district, strong supporter of local, sustainable agriculture;
- Monterey County Agricultural & Historical Land Conservancy, owned the unit;
- Deb Garrison, food entrepreneur, organizer, & coordinator of Central Coast Ag Network (trade name "Central Coast Grown"), a non-profit 501c3 established in 2004 primarily to create demand for regionally produced food;
- Central Coast Agricultural Cooperative, incorporated in August '08, trade name "Coast Grown." Members must be located within a 100 mile radius: Santa Barbara, San Luis Obispo, and southern Monterey counties. As of summer '09, the co-op had 7 ranchers.

History and development

The mobile processing unit itself has been around since 2002. Monterey County rancher George Work started a "farm-stay" program on his ranch, then found he couldn't legally serve meat from his ranch to his guests. The closest USDA-inspected slaughter plant was hundreds of miles away, making it extremely cost prohibitive to haul a few animals at a time.

George found out that the first USDA-inspected mobile processing unit was just getting up & running in Washington state: he did his homework and told his Congressman, Sam Farr, about it. Without much warning, Farr was able to redirect \$138,750 in unspent federal Economic Development funds to build an MPU for Central California. George quickly hired Bruce Dunlop, who built the WA unit, and he and Farr arranged for the funding to be run through the Monterey County Agricultural and Historical Land Conservancy (now Ag Land Trust), which would own the unit to be leased by the ranchers. Bruce delivered the new MPU in 2002. George and other ranchers formed the Central Coast Homegrown Meat Alliance, to get the unit up and running under USDA inspection.

At that point, the project stalled. Though they now had a mobile unit, the Alliance had not aligned themselves with a USDA processing establishment. The closest USDA cut and wrap facility – an essential partner for a mobile slaughter unit – was close by but didn't have a good reputation for quality. A couple of ranchers tried to sort out the regulatory requirements – from USDA, the state, the regional water quality board, and the county – but they became overwhelmed and frustrated by what seemed insurmountable obstacles and little or no support for their vision. It also didn't help that few of the ranchers had had a chance to develop markets for their meat. After an energetic but ultimately fruitless push in 2005, the Alliance parked the mobile unit at the Work Ranch, and there it sat.

Two years later, enter Deb Garrison, a local food entrepreneur and the coordinator of Central Coast Ag Network, a non-profit educational organization for local foods. She and others had started the "Buy Fresh Buy Local" campaign in the Central Coast area in 2004. The project included public events where farmers and ranchers teamed with chefs "to cook a fabulous meal" showcasing local foods. "We built the demand. That helped tremendously."

Deb explains, "It was easy for me to get fruits and vegetables into the local foodshed, but not

meat.” Demand for local meat was growing, and ranchers were willing to supply it, but they had no way to get it USDA processed without driving hundreds of miles for inspected slaughter, then taking it to a local USDA inspected fabricator that was already maxxed out on capacity. “That’s when I got interested in making that unit go again.”

Deb had been working with George Work for quite some time with Central Coast Ag Network. “He said, gosh, Deb, you’re so passionate about this local food initiative... I have an abattoir sitting in my yard, not being used, it was so difficult, we lost interest... would you be interested in getting it going?”

In September of 2007, Deb partnered with the San Luis Obispo Farm Bureau and Central Coast Resource Conservation and Development Council and won a USDA Rural Business Enterprise Grant to do three things. First, the market research – with chefs, local grocery chains, and consumers – proved and described the demand for local meats, hence the need for the mobile unit. “We really did our homework.” Second, developing the supply side by creating the Central Coast Agricultural Cooperative and the website for product sales. Third, research on how to get the mobile unit up & running.

Because the abattoir was purchased with federal funds, the organizational shuffle was complex: first, the Central Coast Homegrown Meat Alliance dissolved, which meant it had to donate its assets to another nonprofit. Its key asset was the lease on the mobile unit, which was owned by the Monterey Agricultural and Historical Land Conservancy. When the Alliance dissolved, the Land Conservancy – at a big media event – donated the unit to the new Central Coast Agricultural Cooperative.

The actual transfer was more straightforward: “I went to George’s ranch, charged up the battery, and drove it away.”

From September 2007 to September 2008, they researched compliance issues for both the unit and all ranch sites, wrote the unit’s operational standards, HACCP plan, and Sanitation Standard Operating Procedures, and drew up the site plan.

Funding sources

- The funding to build the mobile unit came from the federal Economic Development Department; the funds had been returned by the original grantee, and Congressman Sam Farr managed to redirect it for this project;
- A USDA Rural Business Enterprise Grant paid for the market research, formation of the Central Coast cooperative including writing a business plan, and regulatory compliance research for the mobile unit;
- The Co-op is currently operating on a bank loan and is working hard to boost product sales to bring in operating capital.

Business plan - How it works

Deb Garrison wrote the business plan for the unit and the cooperative as a whole. She has been a business plan consultant for years, writing plans for agricultural operations.

Starting out, the MPU – which, for marketing reasons, they call an “MHU,” H = Harvest – slaughters two days per week. Coast Grown (CG), without its own cut & wrap, uses a local fabricator. His shop is closed by the time the slaughter day ends, so the carcasses are stored overnight in coolers at the ranches, and are off-loaded at the fabricator the next day. They can do this two-day cycle – slaughter one day, offload the next & park – twice a week. If the fabricator decides to open on Saturdays (possible), they’ll have another cycle.

Carcasses are hung for 14-21 days, then cut and packaged. The producer pays the fabricator directly. CG picks up the packaged meat, to store in freezers at the CG storage facility in Oceana, for just-in-time sales. A couple of ranchers store their own meat on the ranch, to sell there or at farmer’s markets.

Website sales—www.coastgrown.com—began in mid-June. When Deb gets a website order, her system sends an invoice to the rancher with order specifics, and the rancher must then get the meat to the CG storage facility two days before delivery, which CG handles. The cooperative is also planning on starting neighborhood meat buying clubs.

The co-op never owns the meat—the marketing is provided as a service to the co-op members—but retains 15% of the sale price to cover costs.

As of summer ’09, sales are limited to the tri-counties, to keep delivery miles manageable. Deb hopes to start national sales soon, via FedEx.

Ranchers control how they sell, and all sell differently: some will sell you one steak, others have order minimums or only sell 50 and 25 lb packages. CCG requires a minimum order of \$150 for delivery, though shoppers can buy less and pick it up at the CCG Oceana facility. Some producers sell through their own websites, at farmers’ markets, and to restaurants.

Deciphering regulations and complying

This process, which began in 2002, continues to this day, even though the unit is already operational. In large part, this is due to this abattoir being the first of its kind in California, which has its own USDA district: it has been a huge challenge to figure out which regulatory agencies have jurisdiction and over what, and what the specific requirements are.

George Work and the Alliance had started down this path, and when Deb took over, she started wading through his records to find names of people he’d already talked to, such as the state’s meat and poultry inspection agency (despite the agency’s name, CA doesn’t have a state inspection program per se). She called two people at USDA’s Alameda District to verify information in Alliance records and found that much of the information they’d originally been given was wrong, even down to the forms. “Just finding the right application form was a challenge ... even the front line inspectors didn’t have the form number right.”

After six months of confusion, mixed signals, and very little help, Deb finally heard – and not even from the USDA inspectors themselves – about FSIS’s Small/Very Small Plant Guide: Applying for a Federal Grant of Inspection for Meat and Poultry Establishments. Finally, she had

real information. “Everyone has to start with that guide.”
[NMPAN has developed an [online version](#) of this guide.]

Waste water disposal was a challenge. The animals had to be slaughtered on cement pads on the farm. Then the butchers would rinse the blood off the cement pad. The county required that the unit have a set of guidelines for how to dispose of that rinse water, and that the Natural Resource Conservation Service write the guidelines which then had to be approved by the California Regional Water Quality Control Board. Jeff Rodriguez, with NRCS in Morro Bay, helped navigate this labyrinth and wrote the guidelines. The county then waived the permit & monitoring requirements.

The offal was – and remains – the larger challenge. Unlike Washington state, California is not willing to let offal be composted on farm. But Deb found, through her local Resource Conservation District, the CA Integrated Waste Management Code of Regulations for dealing with offal on farm, which state that in CA, you can neither bury any animal products on your property nor compost them. Deb thought she saw an opening: “It doesn’t say anything about not putting it on the ground and letting wildlife eat it, as long as it’s not near a water source. So let’s just leave it here as if it the cow had died on the farm. I will admit, I was in a gray area.” After a couple of weeks, they were shut down by the state’s Meat and Poultry Inspection Agency (MPIA), which required them to take the offal to a rendering plant.

MPIA also said that the MPU wasn’t under the Integrated Waste Code but under MPIA jurisdiction and CA’s Food and Agriculture Code. In those regulations, Deb found a provision for owners of cattle that die on their property to bury them there – which seemed to conflict with the Integrated Waste Code. She also found a provision for the chief of CA Food and Agriculture to approve other methods of disposal for inedibles. So, Deb reasoned, MPIA could give them a permit to bury the offal, in the same way they permit the burial of a dead cow. She is still trying to sort this out, with the help of her local Farm Bureau, and hopes the state will someday accept on-ranch offal composting.

In the meantime, the MPU has to carry out the offal in 44 gallon Rubbermaid tubs and offload them at the cut and wrap facility, then sanitize the MPU before off loading the carcasses. The local rendering company picks them up for a fee that amounts to \$6/animal. That may be fairly cheap, but the whole process requires extra staff time, and more weight/wear on the trailer.

Ranch slaughter sites have also been challenging, and under the current requirements, a rancher must spend up to \$5000 for infrastructure, which includes a covered cement slab, an ante-mortem inspection pen with shade for waiting animals, a suspect pen, an slip proof alley way that leads to a welded metal stun box where the animal is held still during slaughter, and a door off that box for the animal to fall out afterward, onto the slab.

The cost of compliance with these extensive requirements – which go far beyond what USDA has required for MPUs in other states – has meant that only a few of the larger, wealthier ranchers are using the MPU. With a \$238/head kill fee, and the cost of building a ranch site, small growers in the region, who originally wanted to finish and direct market a few animals from their cow-calf herd, can’t make it pencil out.

And it kept getting harder. “Every single time we slaughter, they have another thing they want us to do.” For example, they were using a hose to rinse the head and variety meats. Their inspector decided this wasn’t safe for the butchers to be walking over the hose and gave them 90 days to extend permanent plumbing, and restaurant sprays, to the other side of the unit where the variety meat and head inspection trays are mounted.

Fortunately, Deb has a good relationship not just with her inspector (who is tour-of-duty, inspecting other plants also) but with the top-line inspector at the district office. She appealed to him about the new plumbing requirement. “We can’t keep adding all of this plumbing and different trays,” with all the additional expense. Each new such requirement seems to make the mobile unit less and less mobile, less and less what they had originally envisioned.

A few weeks later, the situation began to turn around. “Our inspector said he finally sees what we’re trying to do – we’re trying to save ranches, the meat is so traceable.” He asked for video of the Island Grown Farmers Cooperative MPU in Washington, in order to go back to his own district and make the case that federal rules should be applied evenly across districts, i.e. Alameda should follow Denver’s lead. (The video, which will be filmed by Washington State University extension, will be available on the Niche Meat Processor Assistance Network website.)

Determined to make it easier for future MPUs to navigate regulatory waters, Deb is now training a graduate from California Polytechnical University, now an intern with Coast Grown, as an expert in HACCP plans for mobile units. With assistance from their inspector and professors at Cal-Poly, they will create generic plans (which will also be posted on the NMPAN website) and will offer their expertise on a consulting basis, as an extra source of revenue for CG.

Plant design

The MPU was built by Bruce Dunlop, based on the same design as the [Island Grown Farmers Cooperative MPU](#) in Washington.

Central Coast MPU Inside and Out



Big Glitches and how they were solved

The biggest, to start, was that the MPU had to be tied to a cut & wrap facility. When George Work and Rex Swan started out, they just focused on the unit itself. But not every cut and wrap facility has a docking station to receive carcasses from a mobile unit.

The second glitch was the county requirements for wastewater management and needing NRCS to write the guidelines and the Regional Water Quality Board to approve them to get a permit waiver from the counties.

The third has been the seemingly excessive USDA requirements – at least before the recent turnaround.

At the start, Deb says, “it was me trying to figure out what the heck I’m supposed to do to get this figured out!” Until she found the above-mentioned FSIS guide, it was impossible to find all the information she needed to get started. While there were plenty of directives and categories on the FSIS website, they were not presented in a useable way for new plants: “a person who has never been in the business before would have no idea. And most people starting up these mobile units have NOT been in this business.”

Even when they had their temporary grant of inspection, getting an actual USDA inspector was a challenge. They were assigned a tour of duty inspector in the beginning, who had only limited hours for them.

Maintenance fees are huge. “I can’t tell you how much this thing breaks down.” It was only the second such unit built, and it sat idle for seven years. Recently, for example, they’ve had problems with the generator, the cooler condenser switch, the brake system, and the tractor that pulls the trailer. And any new USDA requirements, such as a new sink or additional plumbing, adds new costs.

Equipment required

- The MPU set-up and equipment are standard (except the offal tubs). The ranch sites have so far had to have a concrete pad, stun box, several pens, and more.
- CG just bought a delivery truck to deliver meat.
- Rather than buy a \$43,000 walk-in freezer, they spent \$3000 for six 20 cubic foot chest freezers which are so far enough for their just-in-time sales but may not suffice in the future if they have to carry much inventory.

Staff needed, how they were found and trained, and what they cost

Deb is the coordinator of the Central Coast Ag Cooperative, and the MPU is just one piece of her job. She has handled all compliance issues and communications with USDA. She also spends a day each month with the MPU to make sure the HACCP plan is in order and being followed correctly and to check on ranch sites and make any needed changes.

Jenny, the intern from Cal-Poly, will take off some HACCP/SSOP review burden. Deb suggests every MPU have a separate person – not the rancher or MPU employees but someone impartial –

whose only job is to assure the regs are being followed.

They found Steve, their lead butcher, who used to have his own custom-exempt shop, through word of mouth. He's highly skilled, very quick and precise, and a good teacher. He has two helpers, one of which is his son, Clayton.

Their truck driver/operations manager is the ranch manager of one of the participating ranches. He also washes the pad, barrels up the offal, monitors the coolers, maintains the truck and trailer, and takes care of other on-site needs.

Pay: in this start-up phase, trying to reach the break-even point, wages are initially somewhat low. Deb earns \$3100/month (for her entire job, of which the MPU is a part), the butcher earns \$15/hr, the others are \$10/hr, and the intern is free. None receives benefits.

Financial sustainability plan

Deb projects that website meat sales will allow the MHU to be financially sustainable. Providing this marketing service to local farms and ranches also prevents a product bottleneck, which might happen if CG only did slaughter as a service.

Keeping cash flowing and people busy during seasonal slow times

As they've just begun operations, they are still working on this.

Markets accessed

So far, at the start, it's all individual consumers. Steaks are most popular, followed by ground meat, stew, and sausage. Restaurants are starting to buy cuts and even quarter carcasses, which is very exciting. This is wine country, with many upper-end restaurants with the space to hang a quarter to cut however they want. They are also just starting a local wine-and-beef pairing for wine clubs, so members will get steaks from a local ranch with their wine. They also plan to sell burger to the region's school districts.

APPENDIX 17—CASE STUDY: ISLAND GROWN FARMER COOPERATIVE ¹⁴⁴

The Island Grown Farmer Cooperative (IGFC) mobile processing unit (MPU) was the first USDA-inspected mobile slaughter facility for red meat in the U.S. Further processing is done at a permanent plant in Bow, WA, also USDA-inspected.

Basic information

Capacity per day: MPU: 9-10 head beef (or 40 sheep or 24 pigs). This takes 2 butchers 8 hours, plus 2 hours drive time. The MPU can do this only 3-4 days/week, because of limited staff and the need to bring meat back to the processing plant and do truck/trailer cleaning/maintenance.

Hours/day of operation: up to 8 under inspection, extra for set-up & clean-up.

Weeks/year: 52, at 3-4 days/week. The processing plant operates 5 days/wk and can process 2500 lbs per day.

Species: all four legs

Services: slaughter & process; raw sausage; case-ready, retail packaging

Square feet: trailer is 34' long. Plant is 3000 sf.

#/type of employees: 6 employees (from manager to part-time cleaning staff)

Annual sales revenues: \$300,000 (all services, not including the value of meat processed).

Price of services: slaughter: \$37 lamb, \$53 pig, \$105 steer. Cutting (to case ready) = \$0.90/lb lamb, \$0.60/lb steer, \$0.60 pig (plus 10% price increase, spring '08). Sausage = \$1.25/lb for links. (For farmers not in the co-op, prices are slightly higher.)

Operational costs: ~\$290,000/yr. Fee structure is designed to break even or be slightly profitable. The trailer gets ~10 miles/gallon.

Retail on-site: Yes, small, selling co-op members' meat (members get revenue). Open 2 days/wk, earns \$3000/mo.

Wholesale: no

Inspection: USDA inspected

Certified organic: Yes

Certification agency: Washington Dept of Agriculture

Custom work: Yes but rarely, because too busy with inspected work.

Source verification on label: No, too much hassle. Appropriate when customers can't meet producers directly. Some members have their own labels.



¹⁴⁴ http://www.extension.org/pages/Coast_Grown_Mobile_Harvest_Unit

The market opportunity

“No one had a chance to try marketing before we had the processing—and now it’s taking off.”

Basic history/development

In 1996, a group of livestock farmers in San Juan County, Washington state, started talking with each other and the county extension service about how to make local meat production possible. The farmers lacked access to USDA slaughter and processing – they couldn’t transport their animals to facilities on the mainland. When the idea of a mobile slaughter unit came up, the farmers and the county extension agent approached the Lopez Community Land Trust, a community land trust focused on affordable housing and sustainable rural development, to be the host organization for the project. LCLT hired Bruce Dunlop to design and build the MPU.



The MPU is operated by the Island Grown Farmers Cooperative, which leases it from LCLT, no longer actively involved. IGFC was formed specifically for this purpose. It is a service co-op; members market separately. The IGFC board, which meets monthly, makes all the basic business decisions. The head butcher now manages the MPU and the plant. Co-op member farms are all within 100 miles of each other (1-2 hours drive), which is the largest area the MPU can serve efficiently.

The MPU received its grant of inspection and began operating in 2002.

The Wall Street Journal published [a story about creation of this mobile processing unit on October 6th, 2008](#). The article includes several photos and a video.

Funding sources

The total cost for the project was \$150,000 in 2000.

A new trailer in 2008 with the same capacity costs \$170,000.

Trailer \$60,000

Equipment & Installation \$27,000

Truck \$18,000

Design/ Project Mgmt. \$25,000

Testing \$15,000

Outreach \$ 5,000

The MPU was paid for with grants, and private donations from the farmers and other individuals in the community, so neither IGFC nor LCLT had to take on initial debt. However, their experience suggests that an MPU could pay for itself, even with a loan to pay back.

USDA grants (obtained by LCLT), were from CREES (Cooperative Research Education and Extension Service), Rural Development, and Rural Business Opportunity programs, and paid for design, development, project management, and testing. A \$20,000 grant from the Forest Service Community Development Program, for timber-impacted communities, paid for the truck and refrigeration equipment. The remaining \$80-90,000 came from private, individual donors who wanted to support local agriculture.

Once the MPU was built, they didn't need additional outside funding. They bootstrapped, with revenues (fee for service) and an initial capital charge of \$600 from each of the 30 starting members. They set their rates so that they were able to break even in the first year.

The cut and wrap facility is on the mainland, in Bow. IGFC rents the building but owns much of the equipment, purchased from the landlord (assessed members an equity retain on each slaughter and paid it off in 4 years).

No bank financing as yet. Last year, to expand operations, they considered a bank loan. But members chose to loan IGFC the money themselves, at a slightly lower interest rate. This meant less paperwork – and a real vote of confidence in IGFC and the MPU.

Business plan

The initial business and operating plans were written by Bruce Dunlop for LCLT, before the cooperative was formed. As the business has changed and evolved, subsequent planning has been done by IGFC board members with business experience. The actual business turned out somewhat differently (Business planning for product sales is done at the member level, not by the co-op.)

Because they didn't have to service any debt from MPU construction, business planning was fairly simple: estimate how many animals they'd handle and set appropriate rates. Members had to decide how much to charge themselves. (The MPU is available to non-members, depending on schedule, but at slightly higher rates.) Their original rates, based on an industry standard, were too low: after six months, they were losing money, so they raised rates. They've had to do so a couple of times since; a 10% hike in spring 2008 will cover rising fuel costs and health insurance/raises for employees.

“We took a big risk. The whole thing was built on faith that the animals would come.” Would they have enough business? “If you have enough capital, you can lose money in the first year. We had to break even because we didn't have money to lose.” The gamble paid off: the MPU broke even in the first year.

Central to their success is this fact: none of these farmers has any other options for slaughter/processing, so they have to make this one work and keep it afloat.

Deciphering regulations and complying

The MPU is USDA inspected. To understand the USDA regulations, two IGFC members took a HACCP class (required). They wrote their first plan, based on the generic HACCP plan and guidelines on the USDA website. This was in 2001, when HACCP was first applied to small plants. They reviewed it with their HACCP class trainer and then presented it to USDA.

The HACCP plan and operating procedures are separate documents. You have to be careful about what goes in which. IGFC has adjusted this over the years, with guidance from their USDA inspectors. USDA requires specific “Sanitation Standard Operating Procedures” (SSOPs), including pest control and water supply testing. For the most part, USDA requires you to have a plan and follow it.

The HACCP coordinator is a critical job. HACCP is, in theory, straightforward. In practice, every inspector has his own interpretation. The coordinator must be able to work with the inspectors to craft the plan and then change it when it makes sense and to comply with changes in the regulations. *The USDA can't tell a processor how to write the plan.* However, inspectors often have helpful recommendations. In IGFC's experience, most inspectors are reasonable and willing to work with a processor to create a good, workable plan.

Apart from USDA regulatory requirements, IGFC's processing operations required no other permits. The cut and wrap facility in Bow already had a conditional use permit for meat cutting. (A new or expanded facility would require a building permit.)

The MPU required no county permits, because it isn't a building, so the county had no jurisdiction. Rinse water and offal are composted on-farm, but the amounts are small, and the county health department hasn't objected. The MPU may visit each farm ten times a year, using 300 gallons each time: 3000 gallons per year is minimal for land application. As for offal, there are plenty of studies showing on-farm composting is safe (see, e.g. Washington State Department of Ecology guidelines: <http://www.ecy.wa.gov/biblio/0507034.html>).

Plant design

Bruce worked with Featherlite, a trailer company, to design the MPU. This was the first USDA-inspected mobile slaughter facility, so they had to start from scratch.



Figure 79—MPU Interior

The photo on the *left* shows the MPU skinning and evisceration area as seen from rear of trailer. The photo on the *right* shows the carcass cooler behind the skinning area. Inedible offal and blood from livestock are composted at the respective farms.

Big Glitches and how they were solved

Operations have been relatively smooth from the beginning.

Required equipment

The unit is equipped with a diesel generator, water storage, hot water heater, refrigeration and tools to allow for fully self-contained operation. Carcasses begin chilling immediately after processing and are down to temperature by the next morning.

Staff needed and how they were found/trained, what they cost

There are currently six full-time staff:

- Two butchers who do slaughter and fabrication; they go out with the trailer, separately or together;
- Three additional meat cutters;
- Scheduler/packager who also answers phones.

They have part-time staff for clean-up and packaging.

Hourly rates run from \$11.00/hr to about \$22.00, depending on experience. A reasonably skilled meat cutter earns \$18-19/hour.

The senior butcher, who is also now the plant manager, is a year-round employee, on salary. All others are on an hourly wage. In 2008, IGFC began offering health insurance and paid vacations to all full-time employees; the insurance, though quite expensive, was necessary to retain them. Labor amounts to 75% of total costs.

IGFC found their staff by doing “a lot of looking.” At the very start, they hired the senior butcher, who was then working at a custom butcher shop. He was very experienced: grew up in a butchering family and went to school for it in Holland.

They needed more help when they opened the Bow fabrication plant. They were fortunate to find, through word of mouth, another butcher with experience. They trained two additional meat cutters and their packager from scratch. They trained their third meat cutter, who started as a cleaner for the summer, through a state job retraining program that paid half his wages for 6 months.

Training didn’t always work. To be good at cutting meat takes two years on the job. Meat-cutting training programs are typically only for 5-6 months.

As is typical for the meat processing industry, seasonality is still a problem. Business is slow February through April, so they encourage employees to take unpaid vacations during that time. It works out for everyone, because the employees can log some overtime in the busy summer months.

The biggest labor-related challenge? Business management. The senior butcher now manages the plant, but he started with no management experience. Co-op board members have trained him along the way, even taking over some tasks – e.g. scheduling, critical to cash flow – when necessary. Accounting is largely handled by the IGFC treasurer and an outside accountant.

The board is all-volunteer, but because this business is critical to their livelihoods, they pay close attention. If the business expands again, they will consider hiring a general manager, but that isn't yet necessary.

The current challenge is how to squeeze the available resources in the busy times when there's so much demand – they now have to push pretty hard.

Financial sustainability plan

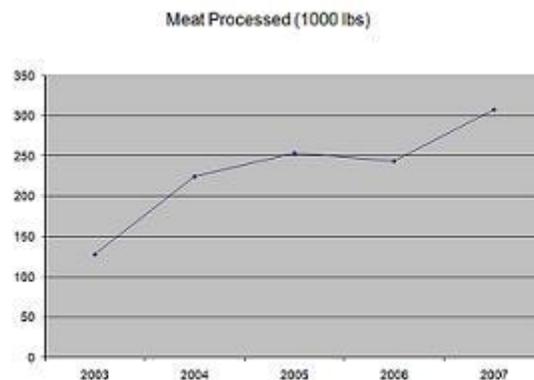
The business is self-sustaining and hasn't needed outside funding since initial development and construction. Future expansions will be financed by members or possibly through bank loans.

Markets accessed

Most members sell their product through a variety of retail channels (e.g. off-farm, farmers markets, restaurants, grocery stores, farm stands). Only a few sell wholesale.

Growth to date

Business has grown steadily. After 8 years of operation, they have nearly doubled their hanging room capacity, but the plant still can't keep up with the MPU. They are working on how to increase throughput. IGFC now has 60 members, most of whom raise and sell fewer than 50 head of beef per year, though a few do 100-200 per year. The MPU processed more than 300,000 lbs of meat in 2007, with a retail value of \$1,044,000.



To continue to grow or not? It's a complicated question. It's tempting to expand, but they might overextend.

APPENDIX 18—WRITING A BUSINESS PLAN¹⁴⁵

The following format will assist you in developing a typical business plan for presentation to potential investors/bankers. During the process, the business concept will become further refined. This is only a guide. Your business may suggest additional areas be discussed or others left out. The key is to be able to answer yes to the question, “does the finished business plan tell a convincing story?”

Keep in mind that within the business plan the overlying theme is to present:

- Observations and facts about the entrepreneur’s skills, the market’s unmet needs (demand), market trends and the competition (strengths and weaknesses).
- Strategies that will allow the business to deliver reasonable and affordable solutions given the resources of the business.
- Evidence supporting observations regarding the market, leading to sales and expense projections.

THE BUSINESS PLAN

I. EXECUTIVE SUMMARY

- A. **PURPOSE:** A concise summary of your plan. The primary objective is to gather interest within a short amount of reading time (a few minutes maximum) so as to encourage reading of the entire plan.
- B. **TYPICAL AREAS DISCUSSED:**
 - 1. Describe the business
 - a. Meat processing
 - b. Distribution and sales
 - 2. What products and services will be offered?
 - a. Slaughter
 - b. Processing
 - c. Sales
 - 3. Describe primary markets
 - a. Del Norte County and surrounding area.
 - 4. What differentiates you from the competition?
 - a. Specify
 - 5. Describe key personnel.

II. COMPANY DESCRIPTION

- A. **PURPOSE:** Provide a clear description of the business you plan to create or purchase.
- B. **TYPICAL AREAS DISCUSSED:**
 - 1. Business stage: Start-up, existing business and business purchase.
 - 2. What key steps need to be undertaken before business start-up?
 - 3. Location (especially important if retail).

¹⁴⁵ “Iowa Meat Processors’ Resource Guidebook A Guide to Building, Upgrading or Expanding a Small Meat Processing Facility in Iowa”, Iowa State University, <http://www.extension.iastate.edu/Publications/PM2094.pdf>, 2010

4. Key employees and their backgrounds (which qualify them for duties).
5. Company structure: corporation, LLC, sole proprietorship and partnership.
6. Company goals.

III. PRODUCTS AND/OR SERVICES

A. PURPOSE: Describe the unique benefits of your product or service.

B. TYPICAL AREAS DISCUSSED:

1. What is the product(s) or service(s) you will sell? What need does it satisfy?
2. What unique benefits do the products or services offer?
3. Is it ready for market? What steps must be taken to get the product to market?
4. What expenses will be incurred in doing so? Develop a schedule. Has any product testing or evaluation been performed?
5. Have any patents, trademarks or copyrights been applied for or granted? Are these necessary? If so, what steps need to be taken, what will it cost and when is it likely to happen?

IV. MARKET OBSERVATIONS

A. PURPOSE: Provide a description of unmet market needs (demand) and evidence supporting those observations that will lead to a sales projection.

B. TYPICAL AREAS DISCUSSED:

1. Customer profile (consumer market)—define customers in terms of:
 - Geographic profile
 - City or counties
 - Radius around a city
 - National or international
2. Demographic profile
 - Income
 - Education
 - Age
 - Gender
 - Activities or lifestyles, e.g. Corvette owners, mountain climbers
3. How do your customers learn?
4. How do your customers communicate?
5. Customer profile (business market)
6. Type of business customer.
 - a. NAIC Code.
 - b. Size of customers, sales volume, number of employees, etc.
 - c. Business marketing associations.
 - d. For your potential business market.
 - e. For your specific type of business.
 - f. How do your business customers learn?
 - g. How do your business customers communicate?

C. MARKET SIZE: Given the above two profiles, how many potential customers make up the market? Typically the answer will rely on census data that the SBDC will make available.

D. TRENDS:

1. Will the market change over time?
2. Will different types of people be drawn into the market as the product or service matures and becomes better understood? e.g. consider the locavore market.
3. Will the market area expand?

E. COMPETITION: Identify, describe and evaluate competitors.

1. How are customers currently obtaining this product or service?
2. What are your competitors' strengths and weaknesses?
3. If direct competitors do not exist, how are potential customers solving their needs for the product or service?

F. COMPETITIVE ADVANTAGE:

1. How will your products or services compare to the competition? What "advantage" will draw customers to buy your products or services? Typical examples include:

Best selection

- a. Financing
- b. Quality
- c. Selection
- d. Better service
- e. Unique atmosphere
- f. Extensive knowledge
- g. Location
- h. Price
- i. Less waiting time