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# Mendocino County Meat Plant (MCMP) Study

*Staying Local*



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## Mendocino County Meat Plant Study – Staying Local Executive Summary

This proposed project is for a small-scale multi-species USDA-inspected meat plant that will primarily serve ranchers in Mendocino and Lake Counties. It will handle cattle, hogs, sheep, goats and bison. It is different from most niche meat plants because most of the ranchers interested in using the facility already have established markets, primarily in the North and East Bay. They will primarily be shifting their slaughter and/or processing from one or more existing facilities to the proposed meat plant.

Recent studies indicate that the increased consumer interest in grass-fed, naturally raised, locally produced meats is based on perceptions and evidence about ‘healthier’ fats, reduced environmental impacts and increased animal welfare associated with meats not produced in confinement systems on grain-based diets. The lack of nearby slaughter and processing facilities requires ranchers in Mendocino and Lake counties to spend significant time and fuel to provide locally produced meat to North and East Bay Area restaurants, farmers’ markets, grocers and butcher shops.

The survey of 19 ranchers conducted for this study indicated that there is significant interest in utilizing a combined slaughter and processing facility located in Mendocino County; only five of these ranchers were interested in utilizing a processing-only plant. The ranchers reported direct-marketing 1,658 head of livestock during 2012; thus, they would not need to increase their production significantly to fully utilize the proposed plant. The services they most highly desired were: meat grinding (89%), labeling of packaged cuts (63%), and extended carcass hang time (58%).

Several collaborative business structures, including LLCs, S- and B-corporations, and cooperatives, to organize and finance the business were examined. Equity capital, as well as borrowed capital, will be needed to finance the plant. Equity from ranchers will probably be needed, and potentially from local community members as well. Eleven (58%) of the local ranchers interviewed for this project expressed interest in potentially being an investor in the business.

Nontraditional financing sources were reviewed, including Slow Money and direct public offerings of stock. Recently, several members of Slow Money invested in a Northern California farmer-owned business structured as a S-corporation.

Three plant options were analyzed. **Option A** provides only cut-and-wrap services using a modular processing unit and a trailer office located in an industrial park; the total plant cost is \$430,500. **Option B** includes the same processing facility and trailer office described for Option

A, plus a modular slaughter unit and adjacent holding pens located at the leased site on an unspecified ranch; the total plant cost is \$821,100. *Option C* is a built-in-place 2,400 square foot slaughter and processing facility located on a plot that is purchased or has a long-term lease; the total plant cost is \$1,425,516. All have capacity to handle 1,500 equivalent animal units. Key financial measures are reported below in Table A.

<b>Table A Summary of Key Financial Measures by Plant Option</b>			
	<b>OPTION A</b>	<b>OPTION B</b>	<b>OPTION C</b>
Plant capital investment	\$430,500	\$821,000	\$1,425,516
Debt financing	\$258,300 (60%)	\$492,600 (60%)	\$1,140,413 (80%)
Equity invested	\$642,200	\$708,400	\$735,103
Plant & equipment	\$172,200	\$328,400	\$285,103
Cash reserves	\$470,000	\$380,000	\$450,000
Gross revenue in year 5	\$414,273	\$920,786	\$920,786
Breakeven point	year 6	year 3	year 3
Payback period	8 years	6 years	6 years
Internal rate of return (IRR)	3.9%	11.1%	6.6%

All three options are financially viable. Option B has the highest IRR (11.1%). Option C's IRR is 6.6%; it is impacted considerably by the purchase of 3.7 acres for \$483,516. However, the management of a business located at one site rather than two is also a consideration.

The Small Business Administration's Section 504 program could potentially provide guaranteed financing for 80% of the option involving land acquisition (Option C). Options A and B involve leased sites and modular facilities; they will need conventional financing which is likely to provide only 60% of the project cost.

A high level of utilization is critical to the MCMP's financial viability. Low interest in using the processing-only plant (Option A) led to a slow growth scenario; the plant did not breakeven until year 6. A slower-growth version of Option C (with full plant utilization reached in year 7 instead of year 5) reduced the IRR to 1.8% from 6.6%. Utilization of the meat plant by larger ranchers in Mendocino and Lake Counties is essential to its success. They are more reliable and more efficient in using the meat plant.

Therefore, experienced management and quality service is needed to attract and retain two or three key ranchers as clients. The challenge will be for the meat plant to convince local ranchers that it provides reliable, high quality service. Ranchers are likely to be reluctant to shift to the meat plant for fear of alienating their current processor and "losing their place in line," particularly since meat plants in Northern California currently have little unused capacity.

Due to California's stringent water quality requirements, careful planning of the meat plant's wastewater system is critical. Pretreatment of the plant's wastewater is necessary before discharging into the municipal sewer system; otherwise, the poor quality of the wastewater will cause both the sewer hook-up cost and monthly sewer fees to be very high.

With any project involving long-term projections, there is always uncertainty related to demand for the services. Since most of the ranchers targeted to use the plant already have developed markets for their meats, the challenge will be for the plant to quickly convince them that it can provide reliable, high quality service. As mentioned earlier, ranchers may be reluctant to shift to the new plant for fear of alienating their current processor.

Other major areas of uncertainty related to the proposed project include site development costs, utility hook-up fees, permits and wastewater pre-treatment costs, obtaining a site with appropriate zoning and municipal services at a reasonable price, and the amount and cost of electricity. Consultations with an experienced plant design engineer and a wastewater engineer should reduce some of these uncertainties considerably.



## 1. Introduction

Innovative ranchers in the North Bay Area have difficulty with locally marketing their grass-fed, organic or sustainably-produced red meats due to a lack of USDA-inspected harvest and processing facilities. While there are both slaughter and processing facilities in Sonoma County, some only handle one species, others only provide slaughter services and some offer only cut-and-wrap services. The lack of nearby slaughter and processing facilities requires ranchers who have attempted to increase their ranch's own bio- and economic diversity and on-ranch income through multi-species grazing, production and marketing to spend significant time and fuel to provide a local source of meat to North and East Bay Area restaurants, farmers' markets, grocers and butcher shops. Even when ranchers use these outlets their marketing is often hampered by significant scheduling problems since existing facilities are operating at near full capacity. In particular, those who want to market organic meats must rely on the certified organic processing facilities in Eureka or Orland (hogs only). Mendocino and Lake County ranchers have even greater hardship due to increased travel.

In response to these issues, this study investigates the development of a multi-species meat plant that will provide individual ranchers with slaughter and cut-and-wrap for beef, pork, lamb and chevon (young goat) and, possibly, bison. The plant is intended to serve primarily ranchers in Mendocino and Lake Counties. It is expected that the ranchers using this facility will be targeting retail and foodservice market outlets primarily in the North and East Bay areas. The proposed plant will serve only as a livestock service provider, handling conventionally, grass-fed and organically-raised livestock. The plant will not have a retail store, nor will it market any meats.

This draft report is a feasibility study. To provide flexibility in the analysis, three different configurations of the USDA-inspected meat plant were developed after significant consideration. All three configurations have annual capacity to handle 1,500 equivalent livestock units (1 cattle = 2 hogs = 3 sheep/goats = 1 equivalent livestock unit), based on a single eight-hour shift:

- **Option A** is a plant that only provides cut-and-wrap services. It is located at a leased site in Ukiah. It has a modular processing facility with cooling units, as well as a separate office trailer that includes a restroom.
- **Option B** includes the processing facility and office trailer described for Option A, plus a modular slaughter unit and adjacent holding pens that will be located at the leased site on an unspecified ranch within 10 miles of the cut-and-wrap facility.
- **Option C** is a combined slaughter and processing facility located on a plot that has been purchased or has a lease of at least 20 years.

Pro forma financial statements—for net income and cash flow--were developed for each option. Returns on investment are compared for the three options, along with a slower growth version of Option C.

## 2. Analysis of Demand for USDA-Inspected Slaughter and Processing Services

This section begins with a review of general trends in specialty/local meat demand, then addresses the more specific demand for locally/regionally produced meat in Northern California. There is also a review of two recent studies regarding demand for regional meat processing. Recent data on livestock production in Mendocino and Lake Counties are briefly discussed, followed by a review of existing USDA-inspected livestock slaughter and processing facilities. The section concludes with an analysis of the results of the Mendocino/Lake County rancher survey of interest in the proposed facility that was conducted for this project.

### a. General Trends in Specialty/Local Meat Demand

Since the end of World War II, significant concentration has occurred in the U.S. food industry, including the production, manufacturing and retailing sectors. As grocery and foodservice chains became larger and gained significant market power, the meat processing sector also experienced considerable consolidation. Between 1980 and 2010, the four-firm concentration ratios rose from 36% to 85% for steer and heifer packers, from 34% to 65% for pork packers, and from 56% to 65% for sheep and lamb packers. This concentration was accompanied by the closure of many regional meat processing facilities across the nation (USDA-GIPSA, 2012).

Mathews and Johnson (2013) recently examined the specific production technologies behind alternative beef production systems (natural, organic and grass-fed) and products. They reported that, during the past ten years, 55% of cattle were slaughtered in plants that process 1 million or more head per year, and just over 1% was slaughtered in plants that process fewer than 10,000 head per year. Currently, alternatively raised beef accounts for about 3% of the U.S. beef market and has grown about 20% per year in recent years.

Gwin, Durham, Miller and Colanna (2012) noted that the “increased consumer interest in grass-fed, naturally raised, locally produced meats is based on perceptions and evidence about ‘healthier’ fats, reduced environmental impacts and increased animal welfare associated with meats not raised in confinement systems on grain-based diets” (p.92). They also determined that, when consumers had knowledge of the health benefits of grass-fed beef, they are willing to pay the higher product prices. Mathews and Johnson (2013) also found that consumers are willing to pay a premium for the omega-3 health benefits associated with grass-fed beef. They noted that numerous studies published between 2007 and 2012 indicated that consumers were willing to pay a premium of \$0.76 per pound for beef produced without hormones.

A USDA study found that consumers who buy locally-produced foods are motivated by freshness, healthfulness, flavor, quality and support for local farmers (Martinez et al., 2010).

Similarly, consumer research commissioned by the National Pork Board (<http://www.porkretail.org/filelibrary/Retail/NichePorkSurveySummary.pdf>) indicates that these factors also supported the growing popularity for niche food products (natural, organic or locally-grown), as well as being important reasons for purchasing niche pork products. More than half (53%) of niche pork purchasers reported buying these products at a conventional grocery store. An additional one-third purchase niche pork at specialty food stores, 23% at a farmers market or food cooperative, and 20% buy them directly from a local farmer. Consumers most often cited lack of availability in the places where they shop as the reason for not purchasing niche pork more often (49%), followed by inability to find the product locally and price (both 37%).

Nationwide, sales of beef in the mainstream grocery market are stronger in the natural/beef category than the overall beef category as shown in Table 2-1. The natural/organic beef market is still very limited but growing in market share; natural/organic beef products' share of total US retail beef sales on a pound basis rose from 1.8% during the 2<sup>nd</sup> quarter of 2010 to 2.7% during the 1<sup>st</sup> quarter of 2013; on a dollar basis, they rose from 2.8% to 4.1% during the same period. The organic industry reported that the meat, fish and poultry category is its fastest growing sector, posting 13% growth in sales between 2010 and 2011 sales; however, it remains the smallest of the eight organic food categories (Organic Trade Association, 2012).

**Table 2-1 U.S. Retail Beef Sales, Difference between 1<sup>st</sup> Quarter 2012 and 2013**

	All Beef	Natural/Organic Beef
Dollar sales	+1.2%	+1.4%
Pound sales	-2.4%	+4%

Source: Beef Checkoff-Retail Marketing

Similarly, the American Lamb Board (2013) reported that there is increased consumer focus on local, healthy and sustainable foods, and that the rapidly growing ethnic populations are heavy consumers of lamb. It also noted that more lamb producers are selling direct to chefs, ethnic communities and farmers' markets. The American Lamb Board also found that fine dining chefs are working more directly with farmers and producers to ensure they source the high quality and sustainably produced ingredients.

#### **b. Demand for Locally/Regionally Produced Meat in Northern California**

At a more local level, Gwin and Hardesty (2008) assessed market prospects for specialty red meats – such as certified organic, grass-fed, naturally-raised, local, Kosher, and Halal – in the San Francisco/Sacramento region. The most popular red meats were beef, pork, and lamb, in that order. The most popular niche categories were naturally-raised, grass-fed, and local; however, they found significant confusion among respondents and their customers over definitions of

some niche attributes, including naturally-raised and local (most broadly California but often more narrowly defined, e.g. 100-mile radius).

Another indication of the growing popularity of sustainably produced meats is the establishment of new butcher shops in the Bay Area during the past five years. The relative newcomers include Avedano's Holly Park Market, 4505 Meats, Marina Meats, and Olivier's Butchery in San Francisco, The Local Butcher Shop (Berkeley), Rockridge Market Hall Butcher Shop (Oakland), Biagio Artisan Meats in San Leandro and Belcampo Meat Company (Larkspur). Sonoma Meat Company is planning to open its butcher shop in Santa Rosa by the end of 2013. Victorian Farmstead Meats has committed to have a meat counter within Community Market when it is expected to open at The Barlow in Sebastopol in late 2013.

Some of the ranchers in Mendocino and Lake Counties who direct market their meat sell primarily to high-end restaurants and specialty meat shops in San Francisco, and Alameda and Marin Counties. There are over 2.3 million residents in these three counties, which are also considered to be tourist destinations.

Meanwhile, the combined population in Mendocino and Lake Counties totaled 153,000 in 2010. While both counties are experiencing considerable growth in their wine industries, they do not attract the same level of winery tourism as Napa and Sonoma Counties. Several restaurants in Mendocino and Lake Counties were identified as serving locally-produced meats. In Lake County, they include Blue Wing Saloon in Upper Lake and Cowpoke Café in Middletown (owned by a local cattle rancher). In Mendocino County, they include Mendocino Bistro, Café Beaujolais, Ukiah Brewing Company, Patrona's, Redwood Valley Café and Bluebird Café, which are all casual dining operations.

Meat produced in Mendocino and Lake Counties is sold by the following local retailers: Ukiah Natural Foods Co-op and Westside Renaissance Market in Ukiah, Mariposa Market in Willits, Geiger's Long Valley Market in Laytonville, Harvest Market in Mendocino and Fort Bragg, Roundman's in Fort Bragg and Keith's Family Food Center in Covelo. Additionally, there are six custom-exempt operators in the two counties (including the owner of Geiger's) to serve ranchers and residents who purchase livestock to have it slaughtered and processed.

### **c. Demand for Local Meat Processing**

The availability of small-scale USDA-inspected meat plants that provide services to individual ranchers is limited in numerous regions across the country. In their analysis of growth in demand of natural, grass-fed and organic meats, Mathews and Johnson (2013) determined that the ranchers have to rely extensively on small regional facilities since they are unable to meet the volumes and uniform size required by large meat processors. They concluded that structural

innovations for slaughter and processing are needed to enable the growth of alternative livestock producers.

While ranchers and others assert that limited availability of appropriately-scaled processing facilities is restricting the supply of locally produced meats, existing small processors often state that they lack the steady volumes needed to be profitable. Gwin, Thiboumery and Stillman (2013) analyzed the causes of these challenging circumstances. They concluded that merely adding new facilities will not guarantee success; strong coordination and communication between ranchers and processors are critical to the success and expansion of locally produced meats. Such collaborations can involve varying structures, including both public and private sector partners who provide support and technical assistance to meat processors and their rancher-customers. Processors can enhance their viability by having a few large rancher-customers who provide significant stability. Another potential tool that processors can use is adopting active scheduling systems and variable pricing to assure steady throughput during the entire year. Ranchers will have a stronger commitment to the processor if they have a financial investment in the plant. Gwin et al. (2013) concluded that, in many cases, greater efficiency is likely if existing facilities are enhanced and expanded, rather than building new facilities. Nevertheless, there are areas, particularly in a large state like California, where ranchers need to drive more than two hours one-way to a slaughter facility, and then must travel a significant distance to have the carcasses processed.

#### **d. Livestock Production in Mendocino and Lake Counties**

Two sources of data were used in the following analysis of the potential livestock supply for the proposed facility: 1. USDA-NASS data for Mendocino and Lake Counties (USDA-NASS, California Field Office, 2012); and 2. A survey of ranchers in Mendocino and Lake Counties conducted for this analysis in 2013 regarding their potential utilization of the proposed facility.

USDA-NASS issues annual estimates of cattle inventories by county (USDA-NASS, 2012). Compared to other agricultural counties, Mendocino and Lake Counties have relatively low beef cattle inventories. In 2011, USDA-NASS estimated Mendocino County's beef cattle inventory was 8,800, placing it as #21 in the state. Lake County ranked considerably lower with 2,000 head. However, unlike California's top five livestock counties (Stanislaus, Modoc, Kern, Merced and Tulare). Mendocino and Lake Counties are located within a one-and-a-half hour drive of the Bay Area, known for being a culinary trend setter and the broad ethnic diversity of its 4.5 million residents. The Napa Valley, known for its culinary offerings as well as its wines, is also within a one-and-a-half hour drive. This promising outlook of demand for meats produced in Mendocino and Lake Counties is offset by the fact that Sonoma County had 11,300 beef cattle in inventory to meet this culinary demand, and is closer to both the Bay Area and the Napa Valley. Nevertheless, several ranchers in Mendocino and Lake Counties have developed loyal clientele at specialty meat shops and restaurants in the North and East Bay Areas.

Overall livestock inventory and sales data from the 2007 Census of Agriculture are displayed in Table 2-2 by species for Mendocino and Lake Counties. USDA-NASS does not report data on bison. Combined sales of the four species in Mendocino and Lake Counties totaled 15,178 head. Cattle comprise approximately two-thirds of the livestock inventory and sales; sheep are the second most popular species. Mendocino County had higher inventories and sales than Lake County of all species, except that Lake County's inventory of swine exceeded Mendocino County's. However, a ranch was recently acquired in Yorkville for the purpose of raising a heritage breed of hogs. The ranch plans on a 450 sow unit specifically to raise pork for the niche meat market. Pork production is limited in California. The breeds mentioned most frequently for pork that is direct marketed in Northern California are Berkshire, Hampshire, Tamworthy, Gloucester Old Spot, and Duroc mixes, raised on open pasture.

**Table 2-2 Lake & Mendocino Counties Livestock Inventories and Sales, 2007**

	CATTLE		
	Lake	Mendocino	Total
Farms w/inventory	118	305	423
Inventory (head)	3,270	19,229	22,499
Farms w/sales	81	202	283
Sales (head)	1,271	8,881	10,152
	SWINE		
	Lake	Mendocino	Total
Farms w/inventory	18	28	46
Inventory (head)	694	343	1,037
Farms w/sales	18	24	42
Sales (head)	177	747	924
	SHEEP		
	Lake	Mendocino	Total
Farms w/inventory	51	120	171
Inventory (head)	1,239	7,177	8,416
Farms w/sales	38	71	109
Sales (head)	453	3,174	3,627
	GOATS		
	Lake	Mendocino	Total
Farms w/inventory	55	69	124
Inventory (head)	1,081	566	1,647
Farms w/sales	20	23	43
Sales (head)	280	195	475
	ALL LIVESTOCK		
	Lake	Mendocino	Total
Inventory (head)	6,284	27,315	33,599
Sales (head)	2,181	12,997	15,178

Source: USDA, NASS. 2007 Census of Agriculture

Between 2002 and 2007, the inventory of cattle in Lake County declined by 64%, while the decrease in Mendocino County was only 4% (USDA-NASS, 2010). In 2007, 79% of the ranches in Mendocino County held fewer than 50 cattle in inventory. The ranches in Lake County tended to be even smaller, with 88% holding less than 50 cattle in inventory. Ten of the ranches in Mendocino County and only one in Lake County had 500 or more head of cattle in 2007.

#### **e. Existing USDA-Inspected Livestock Slaughter and Processing Facilities**

A limited number of USDA-inspected livestock slaughter and processing facilities is available to ranchers in Mendocino and Lake Counties. Five facilities provide both slaughter and processing:

- Belcampo Meats opened in September, 2012; it is a 4.5-hour drive from Ukiah. It is certified organic and handles the four major species, as well as numerous poultry species. However, it only processes for other ranchers only one day a week (the last Monday of the month) and has a limit of 10 head per rancher.
- Redwood Meats in Eureka is almost a 3-hour drive from Ukiah. It handles the four major species and is certified organic.
- Johansen's in Orland is a 2.5-hour drive; it handles the four major species.
- Olson Meats in Orland is also a 2.5-hour drive. It is certified organic, but handles only hogs.
- Superior is the closest with a 2 ¼ hour drive. It handles only sheep, but it expected to begin handling cattle in 2014.

There are three slaughter-only facilities:

- Panizzera's in Occidental is about a 1.5 hour drive, but it handles only sheep.
- Rancho Feeding in Petaluma is also about a 1.5 hour drive, and it currently handles cattle and hogs and it can do organic harvest upon request.
- Nature's Bounty in Vacaville is about a 2 hour 15 minute drive; it handles cattle, sheep and goats.

Additionally, there currently are four cut-and-wrap facilities, which all handle the four major species. Sonoma Direct, which was located in Petaluma and handled all four species, closed in 2012; however, the facility has been purchased and the new owners are planning to upgrade and reopen it.

- Golden Gate Meats is only an hour away from Ukiah.
- Marin Sun Farms has a processing facility in San Francisco, which is approximately a two-hour drive and plan to offer custom services to others in the fall of 2013;
- Schmitz Diversified in San Leandro is a two-hour drive;
  - Manas Ranch Custom Meats in Esparto is a two-hour drive.

## **f. Rancher Survey of Potential Utilization of Proposed Facility**

Ranchers in Mendocino and Lake Counties were surveyed during 2013 by telephone to examine their potential use of the Mendocino County Meat Plant (MCMP). The emphasis was on cattle producers, because many of those involved in raising sheep tend to be interested primarily in youth programs. In fact, 51 of the 63 Lake County ranches raising sheep (81%) had herds with less than 25 head. In Mendocino County, 74 of the 120 sheep producers (62%) had herds with less than 25 head (USDA-NASS, 2010).

Nineteen ranchers were interviewed for the survey; they include all of the individuals with larger herds (over 25 head) in the two counties known to be interested in USDA-inspected slaughter and processing services. Additionally, five other ranchers indicated that they were too small or not interested in utilizing a USDA-inspected facility.

During 2012, the eleven beef ranchers marketed a total of 585 cattle to consumers, retailers and restaurants (Table 2-3); their sales ranged from 2 to 200 head. Similarly, the five pork producers marketed 312 hogs, with sales ranging from 10 to 200 head. The ten sheep ranchers marketed 664 head, with sales ranging from 2 to 400 head. The six goat producers sold 97 goats; their sales ranged from 10 to 40 head. In total, the nineteen ranchers reported marketing 1,658 head of livestock. Sixty-three percent reported that their direct marketing sales had been increasing during the past three years.

Sixty-three percent of the ranchers wanted the meat cut and wrapped, 21% wanted half carcasses to be cut elsewhere and 16% reported that they had some customers who want cut and wrapped meat, while others prefer half or quarter carcasses to cut themselves. Among those wanting their meat packaged, three-fourths desired to have all packages to be frozen, while one-fourth preferred a mix of frozen and fresh.

The ranchers who were interviewed used primarily Rancho Feeding in Petaluma (5 ranchers) and Redwood Meats in Eureka (7 ranchers) for USDA-inspected slaughter and five used custom services; the processors used were primarily Redwood Meats (6 ranchers), custom exempt (6 ranchers), and Golden Gate Meats (3 ranchers).

When asked what percentage of their slaughter occurs between the May through October peak period, eight ranchers indicated between 80 and 100%; six stated that they slaughter year-round and four others did not slaughter at all during the peak period. Thus, there is potential for having the facility processing relatively steady volumes year-round, particularly if financial incentives are offered. Several smaller ranchers commented about the need for increased slaughter and processing capacity during the fairs; however, the timing of this demand is so concentrated that this consideration should not drive the construction of a new meat plant.



Ranchers were asked if they would use the MCMP if it offered only cut-and-wrap services. Only four indicated that they would use the facility and one responded “maybe”; their direct marketing sales in 2012 totaled 492 head and represented 30 percent of the total livestock direct marketed by all ranchers who were interviewed). The two largest ranchers interviewed (each with more than 400 head) were not interested at all in using the MCMP if it only had cut-and-wrap services.

The services most highly desired by the ranchers were: meat grinding (89%); labeling of packaged cuts (63%), and extended carcass hang time (58%). Thirty-seven percent required that their products be delivered to their customers in the Bay Area and another 37% wanted smoked products. Other ranchers reported that they already had preferred suppliers for smoked products who they planned to continue using. Kosher or Halal slaughter and organic slaughter and processing had very limited demand (16% and 11%, respectively).

<b>Table 2-3 Responses to Rancher Survey</b>				
	<i>Beef</i>	<i>Hogs</i>	<i>Sheep</i>	<i>Goats</i>
<b>Producers</b>	11	5	10	6
2012 Direct Marketing (head)	585	312	664	97
Minimum sold by a rancher	2	10	2	10
Maximum sold by a rancher	200	200	400	40
<b>Sales increasing during past 3 years</b>				
Sales increasing during past 3 years				63%
Want wrapped cuts				67%
Want carcasses				32%
<b>Packages</b>				
All Frozen				53%
Mix of frozen and unfrozen				16%
Not Applicable (Carcasses)				32%
<b>Interest in Following Services (% of 19 respondents)</b>				
Meat grinding				89%
Extended Carcass Hang Time				58%
Labeling Packaged Cuts				63%
Product Delivery to Bay Area				37%
Smoked Product				37%
Kosher or Halal Slaughter				16%
Organic Slaughter & Processing				11%
<b>Potentially interested in investing in meat plant</b>				
Potentially interested in investing in meat plant				58%

The total potential slaughter and processing demand of 1,658 head annually among 19 ranchers is relatively small. These ranchers reported that they expected some growth in their demand; 10% overall (approximately 170 head) is likely. There will be additional demand during the fairs season, which could require adding a second shift. However, such “excess” demand could

require payment of costly overtime rates for a USDA inspector and plant workers. As noted by Gwin et al. (2013), seasonal demand for services “creates an unstable ‘boom and bust’ cycle that is difficult to maintain; fixed costs are paid all year, skilled workers need year-round paychecks” (p.43).

There is one other existing ranching enterprise that could potentially add significant utilization of the proposed facility: the University of California’s Hopland Research and Extension Center which currently sends approximately 300 wethers annually, which are ready to be finished, to a livestock auction. The Center does have the capacity to grass-finish these lambs by mid-June. However, significant discussion within the University of California would be needed in order to sell these lambs to any one local rancher who would buy all of them as either finished or ready to be finished. Thus, these animals were not included in the potential livestock pool to be processed at the proposed facility.

Superior is the closest to being an acceptable driving distance for sheep ranchers in southern Mendocino and Lake Counties who want their lambs both slaughtered and processed at one facility. Currently, Superior is only handling sheep, but it is expected to begin handling cattle as well sometime in 2014. Some ranchers commented that scheduling at Johansen’s must be done at least four months in advance. Four of the 19 ranchers interviewed are currently driving the three hours to Redwood Meats in Eureka to get their slaughter and processing at the same facility, and then arranging for Redwood Meats to transport the processed meats to their freezer facility.

Otherwise, ranchers need to haul their livestock to a slaughter facility, of which Rancho Feeding is the closest for cattle and hogs and Panizzera for lambs, and then pick up the carcasses and transport them to Golden Gate Meats. Some ranchers commented that Golden Gate Meats’ availability and quality of service have diminished significantly during the past two years. Thus, it is understandable why ranchers in Mendocino and Lake Counties would be strongly interested in having a multi-species USDA-inspected slaughter and processing facility open in the Ukiah area.

### 3. Alternative Organizational Models

MCMP will be a new business; thus, it has the choice of several business structures when determining its ownership and governance structure. Since this project has been framed as a collaborative organization, we assume that it will have multiple owners. There are four well-known structures described briefly below, as well as a new structure that recently was approved in California—a B-corporation.

#### a. Partnerships

Partnerships are one of the oldest legal forms of closely-held joint ventures. They involve two or more owners. Since at least one of the owners is fully liable for the debts of the venture, its liability is not limited; at least one owner's assets are subject to liquidation if the partnership suffers an adverse ruling. Thus, the partnership structure is very problematic in a litigious environment.

The owners, called partners, may pull out at any time, usually without generating any taxable capital gains. A partnership's income is taxed at the partner level only.

#### b. Limited Liability Companies

Limited liability companies (LLCs) are a much newer structure. The owners are called "members", and all members enjoy limited liability. These members may also pull out at any time without triggering capital gains tax penalties. Income is distributed to members in proportion to their ownership; income is taxed only at the member level. LLCs resemble partnerships, but, most importantly, they share the corporate characteristic of limited liability. They can have an unlimited number of partners. Members have one vote per share owned.

Limited partnerships, as well as B-corporations, S-corporations and LLCs must all pay the annual minimum franchise tax of \$800 in California. However, the LLC is also subject to an additional "fee" on its gross revenues. There is no fee for LLCs with annual gross revenues of less than \$250,000, but the annual fee rises to \$900 for LLCs with annual gross revenues of at least \$250,000 but less than \$500,000, and to \$2,500 for LLCs with annual gross revenues of at least \$500,000 but less than \$1,000,000.

If all of the members of an LLC are nonprofit, then the LLC will be treated as a nonprofit for tax purposes. If at least one of the members of an LLC is not a nonprofit, then the LLC will not be treated as a nonprofit.

### **c. S-corporations**

S-corporations originated sometime before the LLCs, but they also offer a blend of partnership and corporate characteristics. Like a partnership, income may only be taxed at the owner (shareholder) level--as long as certain ownership criteria are met. However, if it distributes profits to outside investors, it may have to pay capital gains taxes. The shareholders have limited liability. An S-corporation can have up to 100 members. However, individuals who are not U.S. citizens cannot be members of an S-corporation. Like LLCs, members in an S-corporation can have varying investment levels.

### **d. B-corporations**

The new “benefit corporation” became a recognized business structure in California, effective January 1, 2012. It is usually referred to as a B-corp. To qualify as a B-corp, a firm must have an explicit social or environmental mission, and a legally binding fiduciary responsibility to take into account the interests of workers, the community and the environment as well as its shareholders. It must also publish independently verified reports on its social and environmental impact alongside its financial results. Food-related B-corps include Cabot Cooperative Creamery (Vermont), New Seasons Markets (Oregon grocer) and Swanton Berry Farms (California, 100%-unionized organic farm).

Some B-corps have explained the motivation for creating B-corporations is that for-profit firms often face pressure to abandon their social and/or environmental goals in favor of increasing their profits. By explicitly labeling themselves as B-corps, they believe that they will be able to attract like-minded investors to raise capital when they need to grow (The Economist, 2012).

### **e. Cooperatives**

A cooperative is a jointly-owned business that: (a) distributes control equally (either as one member, one vote or proportionate to use); (b) provides equitably distributed benefits on the basis of use (rather than on the basis of investment); and (c) has equitably distributed capitalization responsibilities, also on the basis of use. Cooperatives usually have employees who operate the cooperative on a daily basis. In the long-term, cooperatives strive to have each member’s capital investment in the cooperative to be proportionate to his/her utilization of the cooperative.

Cooperatives resemble partnerships and LLCs in that their income may be taxed only at the individual (or member) level-- if profits are distributed properly as "patronage refunds". Also, cooperatives share the corporate characteristic of limited liability and involve similar capital gains tax disadvantages.

Traditionally, farmers formed cooperatives to pool their resources to build processing facilities in rural communities. Cooperatives often provide economies of scale, enabling farmers to compete against larger operations. Cooperatives can also serve to provide missing markets or services, such as when a corporate customer decides to close its processing facility, leaving the local farmers with nowhere to market their production. Additionally, cooperatives can reduce their members' coordination costs (which economists refer to as transaction costs). For example, MCMP could potentially provide both slaughter and processing services at one location; therefore, its members would no longer have to schedule appointments to have their livestock slaughtered and or processed, and then make arrangements to have the carcasses shipped to processed (or pick up the carcasses and deliver them to the processor).

Country Natural Beef (CNB) is probably the best-known meat-related cooperative in the U.S. However, it does not own any processing facilities; like another well-known cooperative, Organic Valley, it is "brickless." Thus, it has had to raise relatively little equity capital from its members. Rather, it is a "consumer-centric" marketing cooperative that contracts with feedlots to finish the members' cattle using a specified protocol, with processors to slaughter the livestock according to CNB's humane criteria and process the carcasses into edible parts. A distributor receives the boxed beef, grinds select parts into ground beef, and distributes all of the meat to CNB's grocery, restaurant and industrial customers.<sup>1</sup>

With respect to MCMP, the cooperative's members could be the ranchers that utilize the plant's services. Another alternative is that the plant's employees could be the cooperative's members, rather than the ranchers. Alvarado Street Bakery in Petaluma is one of the largest worker-owned and managed cooperatives in the United States; it markets its baked goods through the country. However, MCMP would be difficult to structure as a worker-owned cooperative because it will require relatively high capital contributions from its small labor force (less than 10 workers). Therefore, the cooperative is most likely to have ranchers as its members; as discussed earlier, there are at least 19 ranchers in Mendocino and Lake Counties who are interested in utilizing the plant and 11 of them indicated they were potentially interested in being an investor in the business. However, it should be noted that none of the ranchers expressed interest in owning MCMP as a member of a cooperative.

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<sup>1</sup> There is another beef marketing organization that operates similarly to CNB, Grasslands Livestock Association (GLA). Based in Texas, GLA provides a consistent supply of grassfed beef to all Whole Foods Markets in its Southwest region. Contrary to its name, GLA is an LLC comprised of a husband-and-wife team. They have developed a well-managed system of getting beef cattle processed and delivered to the Whole Foods stores without investing in any facilities or trucks (Farm Credit Council). They collect a management fee from the 15–20 producer members. The alliance producers make annual commitments 6–12 months in advance of harvest to ensure the Whole Foods Market demand is met. They meet quarterly to discuss scheduling, quality, promotion, and technical assistance needs.

## f. New Generation Cooperatives

A new form of cooperatives—new generation cooperatives (NGCs)—emerged during the 1990s. Most NGCs were formed in the Midwest and processed niche products, such as bison, specialty wheat varieties, tilapia (fish) and edible beans. They are different from traditional cooperatives in two important ways: 1) members must have delivery shares to use the NGC; and (2) membership in the NGC is “closed”, such that the cooperative is restricted to accepting a predetermined amount of specific product, rather than being the traditional commodity clearinghouse (Fulton, 2001). Both of these characteristics stem from NGCs’ processing focus. The total amount of delivery shares sold to all members equals the product volume at which the plant operates at the most efficient processing level. The NGC sells shares to allocate the deliveries among members, and to raise capital. The members have an obligation to deliver product equal to their shares, and the NGC has the obligation to accept and process the member’s delivery (subject to the delivery meeting the cooperative’s quality requirements.)

Unlike a traditional cooperative, the NGC member’s shares are usually transferable and they can appreciate or depreciate in value (depending on the NGC’s financial performance). If the NGC is successful and wishes to expand its processing capacity, it can sell more delivery shares to current or new members to obtain more products to process and generate the equity capital needed to finance its facility expansion.

A new NGC would determine the price of a delivery share by taking the total amount of equity capital it wished to raise from members for start-up; often, this was 30 to 50% of the total capital required to build or purchase the processing plant. Some NGCs are affiliated with LLCs; the LLC is created to issue and sell preferred shares, and to operate the plant, if the NGC cannot raise sufficient equity capital as a cooperative. The LLC can raise the remaining capital by selling shares to individual and corporate investors; the Northeast Missouri Grain Processors was such an LLC. A cooperative owned 84% of the LLC that operated the ethanol plant.

## g. Three Livestock Cooperatives

The livestock cooperatives are described below to provide more information about the different ways a cooperative structure can be utilized to operate a meat processing business.

***Mountain States Lamb*** is a cooperative of over 120 family ranchers in 10 western states, including California. In 1999, lamb producers from Wyoming decided to form a new generation cooperative to process and market (unlike MCMP) various meat products. They determined that they did not have the capital themselves to launch the business. They succeeded in having state legislation passed which enabled cooperatives in Wyoming to be organized an unincorporated

association similar to limited liability companies. The community development benefits that could be generated by having a broader investor base were the bill's significant selling point.

Mountain States Lamb and Wool Cooperative was formed by Mountain States Lamb under this new "Wyoming Processing Cooperative Statute" in 2001. Its owners are divided into two classes: "Patron members" have rights and obligations of delivery of product to the cooperative; and "Non-patron members" who have no product delivery obligations and are primarily investors. Patron members may participate also as investors. Voting rights are differentiated between patron and non-patron members. Patron members are allowed to vote using a one member, one vote basis, subject to certain exceptions. Non-patron members have voting rights proportional to their investment, or as otherwise provided in the bylaws. Mountain States Lamb and Wool Cooperative's patron members own A-shares and the non-patron members own B-shares which pay a fixed dividend. In 2004, approximately 75% of the cooperative's equity capital was held by producers, some of whom own both A- and B-shares (Hardesty, 2004). Since then, Mountain States developed a joint venture with a New York-based meat processor/distributor, and later bought out this partner to become the sole owner.

As demonstrated by the Mountain States Lamb & Wool Cooperative, farmers or ranchers who are organizing a collaborative may find it much easier to raise capital when structured as an LLC, rather than a cooperative, because the LLC can have non-farmer members. With this greater diversity, the LLC can have access to investors representing a broader range of investment capacities.

The *Island Grown Farmers' Cooperative* began its formation in 1996 when a group of ranchers who could not transport their livestock to the mainland for processing approached the Lopez Island Community Land Trust to sponsor the development of a mobile slaughter unit (MSU). The Land Trust contacted Bruce Dunlop, an engineer, to design and build the MSU. It was paid for with several USDA grants and donations from the ranchers and other individuals in the community. It became the first USDA-inspected mobile slaughter facility for red meat in the U.S. The MSU is owned by the Lopez Island Community Land Trust and leased to the cooperative (Niche Meats Processing Assistance Network). Further processing is done at a permanent processing plant on the Washington state mainland which the cooperative owns. Thus, the cooperative operates as a public/private partnership, and Bruce Dunlop now serves as its president.

The MSU moves to different members' ranches on Lopez Island. It slaughters about eight head of beef a day, or 30 sheep or 16 hogs), which takes two butchers eight hours, and an additional two hours of drive time. The MSU operates three to four days a week year-round. Its limited staffing also needs to do cleaning and maintenance of the truck and trailer, and the carcasses have to be taken to the mainland for processing. The members handle their marketing

individually. At the 2012 Western SARE Infrastructure Conference, Bruce Dunlop reported that both the MSU and the processing facility operate at full capacity, which is 1200 equivalent livestock units. This high level of utilization is critical for maintaining the cooperative's profitability.

The following description of *Puget Sound Meat Producers Cooperative (PSMPC)* is a summary of the information about it on the NMPAM website (<http://www.extension.org/pages/28436/puget-sound-meat-producers-cooperative>) and the PSMPC website (<http://www.pugetsoundmeat.com/>). Like Island Grown Farmers' Cooperative, PSMPC also is an example of a public/private partnership. It began operating in 2009; it was established to ensure that USDA-inspected services remain available to Pierce County Producers and other ranchers. Its members include local ranchers, farmers, butchers, restaurant owners and others. It handles cattle, sheep, hogs and goats. It currently travels between two sites in Pierce County, and is used by members and nonmembers. The slaughter unit can handle 8 to 10 animal units per day (1 cow, 2 pigs, 3 sheep/goats all represent 1 animal unit). It operates for up to eight hours a day under inspection (including a 30 minute pre-inspection), with extra time for set-up, clean-up, and transportation.

Start-up costs totaled approximately \$500,000 for the 45-foot mobile unit in the trailer (\$250,000--purchased from TriVan), training necessary for employees, operating capital (including the lease cost of the truck) and \$12,000 for small equipment and tools. The capital for the MSU was provided by the Pierce Conservation District in Pierce County, Washington; the District obtained a loan to cover part of the capital costs and operating costs for the first year.

Originally, PSMPC had five paid employees, which was not sustainable given the low initial utilization rate. This nearly led to bankruptcy, and required restructuring the operation. Currently, PSMPC has no employees. The MSU is now operated on a contract basis by a local livestock producer and founding PSMPC member who also has his own custom-exempt/retail-exempt butcher shop. Carcasses requiring USDA inspected cut-and-wrap are taken to two inspected plants in the region. Other custom-exempt/retail-exempt butchers also use the MSU to have inspected carcasses they can cut up and sell from their own retail counter. The contract butcher works with one assistant (more when needed), who handles the paperwork. PSMPC board members handle the scheduling and bookkeeping on a volunteer basis. As its profitability increases, PSMPC plans to restore paid staff positions, beginning with a bookkeeper.

During 2011, the co-op had net income of approximately \$11,000 (after paying the butcher and covering operational and maintenance expenses) with 90 processing days. During 2012, it harvested over 1,000 animals. Utilization of the mobile slaughter is increasing; it has risen from 516 carcasses during the first full year of operation in 2010, to 850 in 2011 and 1,000 in 2012. Only 20% of the membership used the MSU regularly during 2011.



The Pierce Conservation District owns the MSU, for which the co-op pays a \$1 annual lease payment. The contract butcher is paid a \$300 daily rate (for set-up and transport) plus a fee per animal unit; the butcher pays his assistants and purchases all consumable supplies used with the MSU. The member slaughter charge for cattle under 1,000 pounds of hot carcass weight is \$110 and \$50 for sheep under 100 pounds of hot carcass weight; members pay \$140 per hour for processing. Rates are approximately 25% higher for nonmembers. Prices paid by producers to PSMPC include a margin to cover fixed costs, including maintenance, repairs, and equipment replacement; insurance; lab fees; legal fees/permits; and site improvements. Utilization of the MSU appears to continue to be an issue; the online schedule shows only 9 days of monthly use scheduled during April through July, 2013. The April, 2013 minutes of the Pierce Conservation District indicate that PSMPC will engage in increased outreach to members and will expand the MSU's geographic operating area.

It should be noted that wastewater discharge regulations in Washington where both Island Grown Farmers' Cooperative and PSMPC operate are much more liberal than those in California.

#### **4. Alternative Sources of Financing**

There are three categories of alternative financing sources for the MCMP reviewed in this section: equity capital; debt capital; and grants. While community groups often expect to obtain grant funding as the primary source of funding for relatively small-scale regional facilities, we consider this to be unrealistic. The project has already received two grants prepared by the Mendocino County Economic Development Financing Corporation from the U.S. Department of Commerce Economic Development Administration for the facility design, planning and feasibility analysis for the MCMP (both the previous large-scale and the current small-scale plant versions) for \$231,678. There is one potential grant funding source that is discussed at the end of this section. However, for the MCMP to actually be built (in modular form or from the ground up), both equity capital and debt capital will be required.

##### **a. Financing Possibilities—equity capital**

Equity capital is necessary for virtually any start-up business. Given the recent economic difficulties, lenders do not provide 100% debt financing for a business like MCMP. As previously noted, 11 (58%) of the local ranchers interviewed for this project expressed interest in potentially being an investor in the business. It is possible that these ranchers could form a processing cooperative, in which case they would provide some or all of the equity capital. It would also be possible to organize the cooperative using the LLC structure, similar to Mountain

States Lamb and Wool, with outside investors (individuals who are not ranchers) as well as the rancher investors.

It should be noted that forming a new cooperative requires dedicated leadership by at least two or three ranchers, such as that demonstrated by Doc and Connie Hatfield when they organized Oregon Country Beef (which has since been renamed County Natural Beef). It is one author's opinion<sup>2</sup> that none of the ranchers interviewed is interested in undertaking such extensive organizational efforts.

Another possibility is to form an S-corporation, which could include both local ranchers as well as non-rancher investors. There are recent examples of such cases, which involve investors who support investments that generate social and/or environmental returns, as well as financial returns; such investors are called "impact investors". They are often involved in organizations such as Investors' Circle, Slow Money and LION, which are briefly described below. Rangan, Appleby and Moon (2012) prepared a Harvard Business School Note reviewing the impact investing industry. Impact investing has been so popular that investment funds are being created to package finance projects that create social and/or environmental benefits while also generating financial returns, as do the B-corporations described in Section 3.

Venture capital is an unlikely source of equity capital for MCMP. Venture capital funds are almost exclusively focused on early-stage, high-risk, and high-potential opportunities that use a novel technology or business model in high technology industries, such as biotechnology and information technology/software. Their time horizons are usually short (three years or less) or mid-term (4 to 7 years). The MCMP is not a good fit for venture capitalists because it is intended to provide processing services to local ranchers, which clearly is not a high-tech proposition.

Crowd-funding organizations, such as Kickstarter, have become popular means for an organization or a person to directly raise small sums from many people. They are oriented at supporters of consumer products or creative efforts, such as music or films; MCMP does not fit this category. MCMP also does not fit into the philanthropic project category supported by on-line organizations such as Global Giving, Kiva, Wokai and the US-based Zidisha. MCMP is most likely to attract investors with a longer-term time horizon (at least 7 to 10 years), especially impact investors who are interested in supporting grassfed livestock finishing, local foods and/or

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<sup>2</sup> Shermain Hardesty has worked at an agricultural processing and marketing cooperative. She also served as Director of the University of California's Center for Cooperatives from 2002 through 2003, until the University closed the Center during a budget crisis. She has worked with various farmer/rancher groups interested in organizing themselves into a cooperative. She believes that, in addition to the facilitation and technical support provided by the University, it is essential to have strong organizational and financial commitment from a core group of producers to create a new cooperative.

the North Bay economy. Three organizations that promote impact investing by individuals are described below briefly.

### *i. Slow Money*

Slow Money ([www.slowmoney.org](http://www.slowmoney.org)) differs from other social investment programs through its focus on investing in farming and food ventures aspiring to serve local or regional markets. Its principles include learning "... to invest as if food, farms and fertility mattered. We must connect investors to the places where they live, creating vital relationships and new sources of capital for small food enterprises." (<http://slowmoney.org/principles>). Through a variety of events, Slow Money has been instrumental in raising more than \$25 million in 210 small food enterprises around the United States over the past two years.

Currently, 17 local Slow Money chapters and six investment clubs have been formed, including a chapter in Northern California. A working group for the North Bay has been established, and had a meeting in March, 2013 that highlighted new or prospective meat processing projects; actual investors were present. Meat Committee Member Kathryn Quanbeck gave a presentation entitled, *State of the Local Meat Industry in the North Bay - Challenges, Policies, and Opportunities*, which included discussion about MCMP. There were also presentations about plans to develop two USDA cut-and-wrap facilities in Sonoma County; these facilities (Sonoma County Meat Company and Victorian Farmstead Meat's meat market) were described briefly in Section 2. These facilities included butcher shops selling meats to consumers.

Slow Money Northern California organized an Entrepreneur Showcase in 2011 that included a presentation from David Evans with Marin Sun Farms. He was seeking funding to acquire Rancho Feeding, the slaughter house in Petaluma. (Since this event, Rancho Feeding's owners have been more actively promoting their services and added hog slaughter services and organic slaughter.) Soul Food Farm in Vacaville, known for its pastured eggs and chicken, obtained a three-year loan of \$40,000 with a 6% interest rate (DeBare, 2011). At this event, Capay Valley Farm Shop was introduced to future investors; several ended up joining the producer shareholders of the S-corporation to become "patient equity capital" investors in its consumer products venture. Three of these outside investors now serve on Capay Valley Farm Shop's board of directors. Capay Valley Farm Shop's president/co-founder noted that having 35 investors has increased the administrative effort required to run the business.

### *ii. Investors' Circle*

Investors' Circle operates at a more advanced level than Slow Money. Slow Money's founder and chairman, Woody Tasch, served as chair of Investors' Circle for over ten years. The investors who participate in Investors' Circle include investment funds and companies. Investors' Circle requires firms seeking funding to undergo an assessment of their expected social and environmental impacts; it is not food-focused. However, its members did invest

\$800,000 in Niman Ranch in 2000 and \$1.4 million in Earth's Best Baby Food in 1994, as well as New Day Farms and other food-oriented companies that market to consumers.

### *iii. LION*

LION (Local Investment Opportunity Network) is based in East Jefferson County, Washington; its members are motivated by a desire to promote economic development in their community. It is not an investment group; rather, it is an informal network of individuals who meet to hear business plans (<https://12020.org/LION>). Investment decisions are made by the individual investors. LION has facilitated investment in a local creamery and a farm, as well as some non-food related ventures. The drawback to this approach is the limited liquidity of the investment.

One of LION's members markets LION investing kits online; they contain templates of the legal agreements and forms that LION uses. It appears that there is only currently one other LION group; it is in Madison, Wisconsin.

LION and similar organizations steer clear of Security and Exchange Commission's (SEC) registration requirement by offering opportunities considered to qualify for a "private offering exemption"; "...potential investors need to have a preexisting relationship and familiarity with the offeror of the securities" (Cortese, p 101). Similarly, non-rancher residents in Mendocino and Lake Counties who are interested in supporting locally produced meats and local economic development could support MCMP by becoming LION-like investors in the S-corporation or an LLC.

### *iv. Direct Public Offering of Stock*

MCMP also has the option of doing a direct public offering of stock (DPO) to obtain long-term capital. There is not loan repayment required, nor are there interest payments; investors have expectations in sharing in the firm's returns, which could be primarily social or environmental in nature, rather than financial. However, most public stock offerings are subject to the process of registration with the SEC and ongoing reporting requirements, both of which can be quite costly for small businesses. The SEC's Regulation D contains three different exemptions for small offerings of under \$1 million or \$5 million. However, two of them limit the number of non-accredited investors<sup>3</sup> to 35 (Cortese, 2011), which could be problematic for MCMP because its stock offering could be attractive primarily to smaller investors. States also have their own securities laws and regulations that need to be considered.

The intrastate offering exemption (known as SEC Rule 147) provides an exemption from SEC review for security offerings conducted in the state in which the firm is incorporated and does the bulk of its business (Cortese, 2011). The coordinated limited offering exemption under California law (SEC Rule 1001) provides an exemption from SEC registration requirements for

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<sup>3</sup> A non-accredited investor is an investor with net worth of less than \$1 million and an annual income of less than \$200,000 (\$300,000 with a spouse) in each of the past two years (Cortese, 2011).

securities offerings and sales of up to \$5 million, that satisfy the conditions of §25102(n) of the California Corporations Code (<http://www.sec.gov/info/smallbus/qasbsec.htm#1001>). This California law exempts offerings made by California companies to "qualified purchasers" whose characteristics are similar to, but not the same as, accredited investors under Regulation D. The California provisions allow limited general solicitation before sales. This exemption reduces the cost of issuing stock considerably. However, such securities have very low liquidity; they are "restricted securities," meaning they can only be resold by registration or an applicable exemption from SEC registration (<http://www.sec.gov/info/smallbus/qasbsec.htm>).

If the legal hurdles can be met, MCMP still needs to successfully market a DPO. As a relatively low-tech business, MCMP will not be able to offer high rates of return to its investors. As noted above, the liquidity of such securities is very low. Therefore, MCMP stock is likely to be only attractive to impact investors, in particular to those who support values such as grassfed livestock finishing and locally produced foods. During the mid-1990s, Mendocino Brewing Company successfully completed two DPOs, raising over \$3.6 million. The stock trades on the Pacific Stock Exchange (Drew Field, ---).

The fact that MCMP will be providing services to local ranchers, rather than marketing products to consumers, puts it at a disadvantage with impact investors. To have a successful stock offering, MCMP may need to engage its ranchers' customers as collaborators, particularly the restaurants and butcher shops.

## **b. Financing Possibilities-Debt Capital**

Since MCMP will be a new business, it is highly unlikely that it will obtain a loan from traditional lenders without any assistance. Local financial institutions should be considered a potential source of debt financing for a community-oriented business such as MCMP. Three types of lending arrangements involving local financial institutions are reviewed below. The Mendo Lake Credit Union does not provide business loans.

### ***i. Community Development Financing Institutions***

Community Development Financing Institutions (CDFIs) are a possible source of debt financing for the MCMP. A CDFI is a financial institution that provides credit and financial services to underserved markets and populations; community development is its primary mission. It serves a target market, provides development services, is accountable to its community, and is a non-governmental entity. CDFIs include community development banks, community development credit unions, community development venture capital funds, and community development corporations.

The U.S. Department of the Treasury provides funds to CDFIs through a variety of programs. One of them is the New Markets Capital Tax Credit Program; it attracts capital from individual and corporate investors by providing a federal income tax credits for making qualified equity investments (U.S. Treasury, [www.cdfifund.gov](http://www.cdfifund.gov)).

The CDFI Fund's recently released report, Food Systems Overview, included meat processing facilities in the "Mid-Tier Food Chain" section (Richman, 2011). Richman noted that there is a variety of innovative business structures in this sector, including hybrid for-profit/non-profit entities, and food processing/distribution cooperatives; their innovative business structures may be limiting their access to capital. The role of CDFIs in this sector includes offering appropriate financial products that are structured in size, duration and repayment terms to fit the needs of Mid-Tier Food Chain enterprises, such as working capital and equipment financing.

The Arcata Economic Development Corporation (AEDC) is a CDFI; its service area includes Del Norte, Humboldt, Mendocino, Lake, Siskiyou and Trinity counties. Established in 1978, it is a 501c3 non-profit organization that makes capital available to individuals and businesses that do not have access to funds from traditional sources. AEDC's Small Business Lending Center offers long-term loans for real estate and equipment, as well as short-term loans for working capital and lines of credit.

#### ***ii. Small Business Administration 504 Program***

One of the major business loan programs utilized by the CDFIs is Small Business Administration's 504 Program (SBA 504 Program). The purpose of the SBA Section 504 Fixed Asset Loan Program is to provide long-term financing for small businesses for fixed assets. The funds must be used to purchase fixed assets for projects that will help create new employment opportunities or retain existing jobs (Small Business Administration). Specifically, the funds can be used for land and building acquisition, construction, machinery and equipment purchase and installation, and related costs and fees. The 504 Program does not provide working capital. The loan proceeds are guaranteed 100% by the SBA. Key eligibility requirements for a 504 Program loan include: operating as a for-profit business; relevant management expertise; not having funds available from other sources; and having the ability to repay the loan on time from the business' projected operating cash flow.

According to Kelli Sterling, AEDC's loan officer, the 504 Program supports loans up to the \$5,000,000 maximum limit for a small business. Since MCMP will be a new business, the SBA can only directly finance 30% of eligible 504 costs; an SBA-affiliated lender (such as Savings Bank of Mendocino or Redwood Credit Union) provides 50% of the financing and MCMP must provide equity capital for 20% of the building acquisition/construction and machinery and equipment costs. Currently, the interest for the 504 Program is 5.23%. The loan term for building acquisition/construction is twenty years and ten years for machinery and equipment.

### ***iii. USDA Rural Development Business and Industry Guaranteed Loan***

Assuming that it is not eliminated in the new Farm Bill, USDA-Rural Development's Business and Industry (B&I) Guaranteed Loan program offers loans with an 80% guarantee (USDA-Rural Development—B&I). B&I loans usually have a \$10 million loan maximum which will not be problematic for the MCMP. The B&I program is not intended that the guarantee authority will be used for marginal or substandard loans or for relief of lenders having such loans.

Eligible borrowers include cooperatives, corporations, partnerships, or other legal entities organized and operated on a profit or nonprofit basis. Authorized uses of the loan funds include purchasing machinery and equipment, leasehold improvements, and supplies. It offers 15 year loans for machinery and equipment, and seven year terms for working capital.

### ***iv. Slow Money Loans***

While investors involved with Slow Money were previously discussed as a source for equity capital, sometimes they opt to provide low-interest loans instead. For example, No Small Potatoes Investment Club is affiliated with the Slow Money chapter in Maine. The loan criteria on its website (<http://www.slowmoneymaine.org/investinglocally/investment-clubs/nsp/>) indicate it favors businesses that support the state's food economy by making small loans to farms, fishermen and food-related businesses that expand markets by processing or distribution and enhance sustainable land use practices and food safety. The fact that most of the ranchers interested in utilizing MCMP intend to finish their livestock on grass should be viewed as a sustainable land use practice by potential Slow Money investors. No Small Potatoes' website also includes links to various documents for starting a new Slow Money Investment Club, including sample loan application form and sample promissory note.

### ***v. Direct Public Offerings of Debt and Private Debt Offerings***

Public offerings can be made with debt securities, as well as the equity securities that were previously discussed. Similarly, organizations such as LION offer private debt offerings, as well the private equity offerings. The same SEC rules governing equity securities also apply to debt securities.

### ***c. Financing Possibility-USDA Value-Added Producer Grants***

USDA-Rural Development also has a grant program that MCMP could eligible to apply for-- Value-Added Producer Grants (USDA-Rural Development, VAPG), assuming that it is not eliminated in the new Farm Bill. The VAPG program's objective is to help farmers and ranchers enter into value-added activities related to the processing and/or marketing of bio-based value-added products. Priority for a competitive grant is given to small- and medium-sized farms or ranches structured as a family farm or farmer/rancher cooperative, or are participating in a mid-tier value chain (which MCMP would likely to be doing). MCMP should be able to meet one of the following applicant eligibility categories: independent producer, agricultural producer group, farmer or rancher cooperative, or majority-controlled producer-based business venture.

The maximum amount of grant funding is \$100,000 for planning grants and \$300,000 for working capital grants (which is the likelier option for MCMP). Eligible working capital expenses include processing costs, marketing and advertising expenses, and some inventory and salary expenses. VAPG funds cannot be used to acquire machinery, equipment or structures. Cost sharing is required in the form of cash or eligible in-kind matching funds equal to at least the amount of grant funds requested. No other grant programs were identified as appropriate for the MCMP.

#### **d. Review of Financing Options**

A variety of financing options were reviewed in this section. The most critical requirement for MCMP will be to raise equity to cover 30% of its expected building (modular or fixed) and machinery/equipment costs, as well as approximately six months of working capital. Without equity, MCMP will not be able to obtain a loan to finance approximately 70% of its expected building and machinery/equipment costs. MCMP will also need to raise cash reserves to cover its negative cash flows while it is increasing its plant utilization rate. The most likely source of such capital is the community—the ranchers in Mendocino and Lake Counties who are planning to use the facility, local citizens who want to support the local economy, and the larger community of food-related businesses and individuals in the North and East Bay Area who are committed to supporting sustainable agricultural practices and regional food systems.

Clearly, a nontraditional effort, such as a DPO, would require consultation with an attorney who specializes in securities. Cutting Edge Capital (Jenny Kassan is the CEO) has additional information about offering a DPO and other alternative sources of capital on its website (<http://www.cuttingedgecapital.com/>).



## 5. Plant Requirements, Options, and Siting

### a. USDA Requirements

The MCMP must be inspected by a USDA Food Safety Inspection Service (FSIS) inspector in order to be able to sell the carcasses and processed meats wholesale. The eXtension website, Niche Meats Processing Assistance Network (NMPAN), has considerable information to assist small-scale meats processors. As noted in the regulations section of its website (<http://www.extension.org/pages/17170/meat-processing-rules-regulations>), there are seven steps that need to be followed to become an inspected meat processing plant—commonly referred to as “obtaining a grant of inspection”. The seven steps include having the following approved components: water source; sewer system; labels and/or brands; hazardous analysis and critical control point (HACCP) plan; and sanitation standard operating procedures (SSOPs).

The MCMP needs to be built and operated such that it meets regulatory performance standards, which relate primarily to the following areas (as listed by NMPAN, <http://www.extension.org/pages/17979/step-3:-facilities-must-meet-regulatory-performance-standards>):

- Pest management
- Tested potable water
- Adequate drainage that prevents backflow and keeps sewage lines distinct from wastewater
- Adequate lighting and ventilation
- Adequate rest rooms, hand-washing stations, and garbage cans.
- Walls, floors and ceilings must be “impervious to moisture” and easily cleaned and sanitized
- And the catch-all: Building conditions must “not result in product adulteration or the creation of insanitary conditions.”

Unfortunately, USDA-FSIS does not specify any metrics to ensure adequacy; instead, when the MCMP is first inspected, it will either pass or fail. Therefore, many organizations hire a consultant (often a retired USDA-FSIS inspector) when developing their plant construction plans.

Once the MCMP has obtained its grant of inspection, a full-time inspector will be assigned to the plant to work (at USDA’s expense) Monday through Friday, from 8AM to 5PM. The plant must provide the inspector with a locking office (at least 100 square feet) with a locker and desk, along with laundry service the inspector’s lab coats. Any overtime must be paid by MCMP. Readers are referred to the NMPAN website for an excellent, detailed description of the processes for obtaining the USDA-FSIS requirements grant for inspection (<http://www.extension.org/pages/19712/how-to-apply-for-meat-and-poultry-inspection>).

### **b. State Requirements for Wastewater**

There are numerous state regulations that the MCMP will need to comply with. The State Water Quality Control Board's wastewater requirements appear to be the most challenging for small-scale meat processing facilities. The North Coast Regional Water Quality Control Board (NCRWQCB) regulates the discharge of waste to surface waters as well as to storm drains, ground surfaces, and to groundwaters in the North Coast region (<http://www.waterboards.ca.gov/northcoast/>). It is responsible for enforcement of the National Pollutant Discharge Elimination System (NPDES), which includes regulating the discharge of waste to ground surfaces or groundwater under the Non-Chapter 15 Permitting, Surveillance, and Enforcement Program. Industrial operations which discharge wastes directly into municipal, or other publicly owned wastewater collection systems, are not required to obtain a NPDES permit from the NCRWQCB.

Livestock slaughter and processing generates wastewater from washing carcasses, washing after evisceration, processing offal, and cleaning and sanitizing equipment and building surfaces.<sup>4</sup> It can be divided into five general types: (1) manure-laden from pens and holding areas; (2) manure-free, high-grease from slaughter and processing operations; (3) manure-free, low-grease from the slaughterhouse; (4) manure-free, low-grease from packaging areas; and (5) clear water from cooling systems, steam condenser water, and onsite stormwater runoff. The slaughter function generates the greatest wastewater.

Wastewater is characterized by high loading of solids, floatable matter, manure and other organic substances. Fats and proteins are present in both particulate and dissolved forms. Analyses indicate high concentrations of biological oxygen demand (BOD), chemical oxygen demand (COD), suspended solids, nitrogen, phosphorous, coliforms, and enteric pathogens. The concentrations are highly variable depending on processes and effectiveness of solids separation.

Such municipal systems, including the Ukiah Valley Sanitation District (UVSD), charge industrial clients according to the volume of wastewater they generate and the quality of the wastewater. UVSD factors in the amount (milligrams per liter) of total suspended solids (TSS), biochemical oxygen demand (BOD) and wastewater (gallons per day) into its sewer hook-up charges. Water usage varies widely among meat plants. The Pacific Institute (2003) reported the following use rates per head by species: cattle-300 gallons; hogs—60 gallons; and sheep—40 gallons. These rates were used to estimate the MCMP's projected daily water use of 1200 gallons.

Based on this estimated daily water use of 1,200 gallons and the values of 150 for BOD and 58 for TSS reported on NMPAM by a new small plant in Washington, the UVSD's hook-up charge

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<sup>4</sup> Most of this discussion on wastewater is adapted from a report by Kennedy/Jenks Consultants. 2010. "Energy Use in Wastewater Treatment in the Food and Beverage Industry."

would be \$51,950. A BOD level of 2,500 was also reported for another operation by NMPAN; this level would raise UVSD's hook-up charge to \$275,000, assuming the other values remain unchanged. Clearly, UVSD's hook-up charge (as well as its sewer rates) provides significant financial incentive to pre-treat MCMP's wastewater before discharging it into the sewer system.

Wastewater treatment requires a series of primary and secondary steps. Primary treatment for grease removal is typically accomplished using a baffled tank of dissolved air floatation (DAF). Chemicals are often added to improve treatment efficiency. Alternatively, some plants rely on a series of screening and sedimentation steps.

Secondary treatment to reduce BOD is accomplished biologically using systems that may include lagoons, activated sludge, oxidation ditches, sequencing batch reactors, or anaerobic digesters. Covered, low-rate anaerobic lagoons are often used in series with aerobic lagoons to maximize BOD removal. However, NMPAN noted recently that "we have not yet found an anaerobic digester system that is cost-effective for a small processing facility. The systems are expensive and meat processing waste isn't a very good substrate for anaerobic digesters" (<http://www.extension.org/pages/68216/wastewater-treatment-for-meat-processors>). Aerobic treatment options include activated sludge systems, biological filters, waste stabilization ponds and aerated lagoons. While these systems are proven to be effective for meat processing wastewater, most require aerators which are energy intensive and costly to operate.

The State Water Quality Control Board's Central Region provides a waiver from wastewater discharge requirements for small food processors, *except meat processors*, that annually land-apply either less than 100,000 gallons of process wastewater, or the residual solids generated from processing that results in annual generation of less than 100,000 gallons of wastewater (Order No. R5-2009-0097--[http://www.waterboards.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/waivers/r5-2009-0097.pdf](http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2009-0097.pdf)). Clearly, the State Water Quality Control Board considers livestock processors (as well as confined animal feeding operations) to have highly contaminated wastewater. Based on the SWQCB's 2011-12 fee schedule for waste discharge requirements, the MCMP could pay an annual fee ranging from \$45,830 to \$72,565 if it discharged its wastewater on land.

It will benefit the MCMP greatly to design the plant to minimize both its water usage, and the amount of blood, solids and grease it disposes in its wastewater. Preliminary discussions with a wastewater engineer and a supplier of wastewater treatment systems (Chuck Ross with Environmental Treatment Systems based in Acworth, Georgia) indicated that a system would cost approximately \$77,000 in parts and \$45,000 in installation costs. The equipment costs would include the necessary tanks, pumps, pipes, control panel, and design and start-up services.

Wastewater treatment is clearly a complex issue, and an engineering consultant experienced with California's wastewater standards should be retained soon to ensure that water usage is minimized and to design a cost-effective pre-treatment system to maximize the quality of the discharged wastewater. It will also require the plant manager to develop and enforce water use policies to ensure that employees, particularly the cleaning staff, are very conscientious when using water.

### **c. Plant Options**

The financial feasibility of the MCMP was assessed for three different plant options. These options were developed after extensive discussion with local ranchers, community leaders, and individuals outside of the area who are engaged with meat processing, as well as an extensive review of applied research publications and case studies related to small-scale meat processing. The organizers of NMPAN have a vast array of resource materials on the website, and provided invaluable support for this project.

Regulatory requirements were factored into the development of the different plant options. The three MCMP options discussed below are: *A—modular processing-only facility*; *B—modular slaughter and processing facilities located at different sites*; and *C—a fixed-in-place meat plant providing both livestock slaughter and processing services*. The upfront costs are summarized in Table 5-1 and discussed in the next section.

<b>Table 5-1 Upfront Project Costs</b>						
	<b>OPTION A</b>		<b>OPTION B</b>		<b>OPTION C</b>	
Wastewater Treatment		\$25,000		\$137,000		\$147,000
Engineering consultant	\$10,000		\$15,000		\$25,000	
Pretreatment equipment	\$15,000		\$122,000		\$122,000	
Site development		\$34,500		\$60,500		\$288,000
Lot grading	\$5,000		\$10,000		\$50,000	
Access road (1,000 ft X 12 ft, 6" base, 4" asphalt)	\$0		\$0		\$100,000	
Paved area (parking, walkways)	\$15,000		\$15,000		\$58,000	
Concrete pads for modular livestock units	\$10,000		\$20,000		\$0	
Livestock pens	\$0		\$5,000		\$5,000	
Storage shed	\$1,500		\$2,500		\$0	
Access to utilities						
Electrical connection	\$1,000		\$2,000		\$25,000	
Sewer connection	\$1,000		\$1,000		\$30,000	
Water connection	\$1,000		\$5,000		\$20,000	
City/county permits and fees		\$19,000		\$51,000		\$43,000
Zoning/Use Permits	\$10,000		\$20,000		\$20,000	
Ukiah Valley Sanitation District hook-up fee	\$9,000		\$31,000		\$23,000	
<b>TOTAL UPFRONT COSTS</b>		<b>\$78,500</b>		<b>\$248,500</b>		<b>\$478,000</b>

**KEY CHARACTERISTICS**

office trailer processing module 1 refrigeration container 5,000 sq ft asphalt paving, 4" industrial park in city	office trailer slaughter module processing module 2 reefer containers 5,000 sq ft asphalt paving, 4" industrial park in city ranch site in county	metal building 3 acre minimum 1,000 X 12 ft access road 12,000 sq ft asphalt paving, 4" Utility hook-ups ~500 ft away industrial park in city 2 reefer containers
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### a. Option A: Modular Processing-Only Facility

Option A was intended to be a low-cost means of entering the meat processing industry and testing ranchers' use of the facility. It is based on the processing facility owned and operated by the Taos County Economic Development Corporation, known as the "Mobile Mantanza."<sup>5</sup> EDFC's Kathryn Quanbeck obtained quotes for both a "small" and "large" modular unit. The "large" unit (Figure 5A) was determined to be the more appropriate. This \$245,000 unit (the quote is Attachment 5A) has 519 square feet of enclosed and cooled space held at 35°F for processing, along with 220 square feet of cold storage, also with a 35°F holding temperature. The quoted price for the Polar King Cut & Wrap module includes the unit's delivery from Ft. Wayne, Indiana to Ukiah.

The MCMP Option A will be located at an unspecified site (presumably an industrial park) where there is access to municipal sewer and water, and electricity services. The unit will hold pre-cooled carcasses delivered to the MCMP. Boxed meat can also be stored in this unit, as well

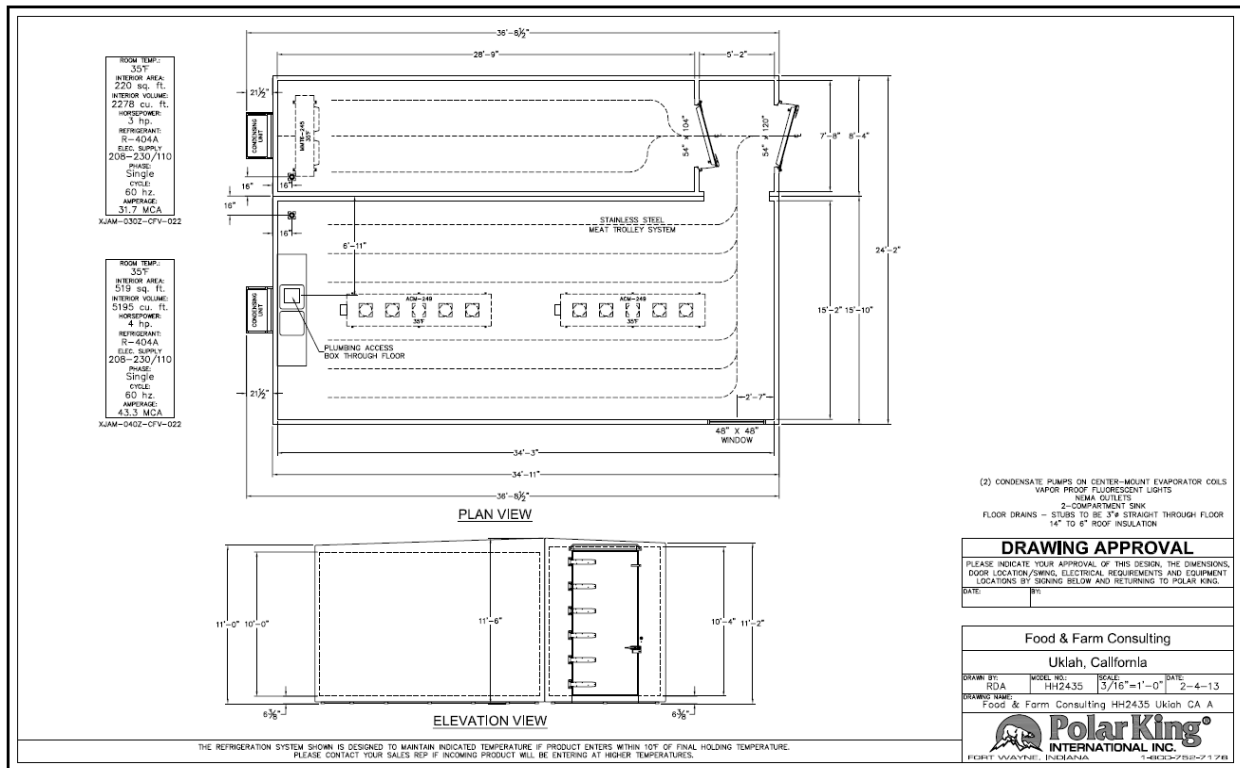


Figure 5A Polar King Cut & Wrap Modular – Large Unit

as half- and quarter-carasses ready to be delivered to wholesale customers. There is a condensing unit inside each space; this is important for keeping the walls as dry as possible to protect food safety. A 40-foot refrigerated container will be used to provide extended hang time for carcasses delivered by ranchers.

<sup>5</sup> <http://www.tcedc.org/mantanzaProgram.html>

The following modular units, equipment and machinery, and upfront costs are included in Option A:

PolarKing Cut & Wrap module	\$245,000
Wastewater pre-treatment equipment	\$15,000
High cube refrigeration container (8' X 40' X 9.5', used)	\$20,000
Modular office (12 X 48, used)	\$30,000
Ford F-150 pick-up truck (used)	\$15,000
Refrigerated box truck for deliveries (used)	\$30,000
1 forklift (used)	\$10,000
Miscellaneous office furniture & equipment	\$2,000
Storage shed	\$1,500
Site prep, permits, utility hook-ups, engineering consultant	\$62,000
<b>TOTAL COST FOR OPTION A</b>	<b>\$430,500</b>

The \$15,000 cost estimate for the wastewater pre-treatment equipment is based on the fact that most of the water used in meat plants is related to slaughter, rather than processing activities. It is assumed that daily water use during meat processing activities will be 200 gallons per work day). The refrigeration container would be used to provide extended hang time for delivered beef carcasses. The 12 X 48 foot modular office (Figure 5B) is large enough to include an office for the USDA inspector and another one for the plant manager, along with a restroom with a shower, and space for the office assistant, and a small employee break area. The refrigerated box truck is necessary for making deliveries to the ranchers' customers in the North and East Bays.

The \$62,000 cost estimate for site preparation, building permits, electricity, sewer and water hook-ups and engineering consulting is only a guess. These upfront costs are detailed for all three options in Table 5.1. The only calculated estimate we have is \$9,000 for hook-up with the city of Ukiah's sewer system; the actual fee is determined by the level of contamination in the wastewater and volume of water discharged into the City of Ukiah's sewer system.

***This plant costs \$430,500, without any 'extras'.*** It does not include any freezer storage space, which could be provided with used cargo containers costing approximately \$15,000 each. Knives and various small cutting room tools are assumed to be covered in the MCMP's operating budget for Year 1.

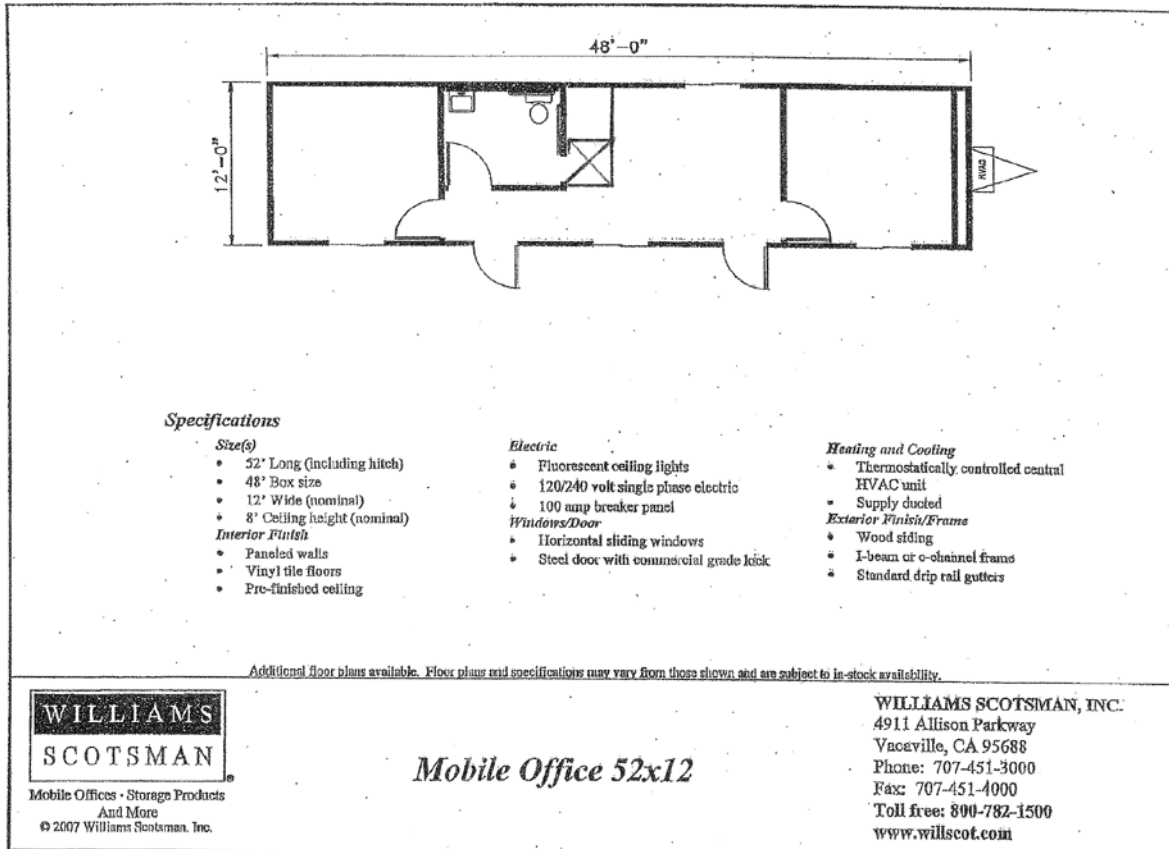


Figure 5B Williams Scotsman Mobile Office Floor Plan

**b. Option B: Modular Slaughter and Processing Facilities Located at Different Sites**

Option B is an enhanced version of Option A. It includes the modular processing unit along with a modular slaughter facility located at a ranch. The quote for the 360 square foot slaughter unit was obtained through Bruce Dunlop (Attachment 5B), who designed the first mobile slaughter unit in the Western U.S. Option B includes:

PolarKing Cut & Wrap module	\$245,000
Modular slaughter unit	\$195,000
Wastewater pretreatment equipment	\$82,000
Modular office (12' X 48', used)	\$30,000
2 refrigerated cargo containers, used	\$40,000
Site prep, permits, utility hook-ups, engineering consultant	\$124,000
Refrigerated box truck for deliveries (used)	\$30,000
Box truck with rails, used	\$35,000
Pick-up truck	\$15,000
2 Forklifts, used	\$20,000
Miscellaneous office furniture & equipment, used	\$2,000
2 storage sheds	\$3,000
<b>TOTAL COST FOR OPTION B</b>	<b>\$821,000</b>



Both modular units will be placed on concrete pads. As noted in NMPAN’s case study of the Central Coast mobile processing unit, each slaughter site spent approximately “...\$5,000 for infrastructure, including a covered concrete slab, an ante-mortem inspection pen with shade for waiting animals, a suspect pen, a 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.” Because there are separate sites involved in Option B for slaughter and processing, some duplication is needed (forklift, storage shed, lot grading, building permits, water hook-ups. The box truck will be outfitted with a pre-chilling unit. It will be used to cool and transport the carcasses from the modular slaughter unit—located on a ranch in a somewhat obscured area--to the modular processing unit (illustrated in Figure 5C).

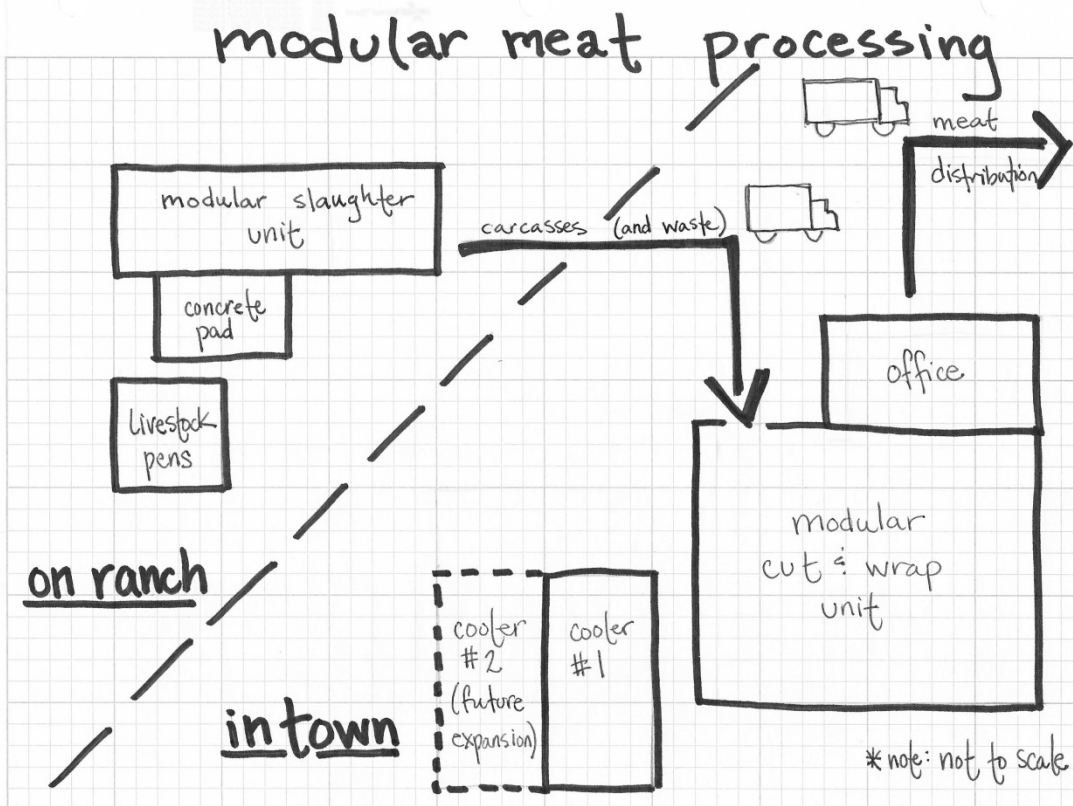


Figure 5C Two Site Modular Meat Processing Illustration of Flow From Slaughter Unit to Cut & Wrap Unit (courtesy of Kathryn Quanbeck)

We do not expect the Regional Water Quality Control Board to allow wastewater at the slaughter site to be spread over the slaughter site. Instead, one of the box trucks will haul the tanks of wastewater from the slaughter site to the processing facility, where it will be pre-treated before being dumped into the sewer system. There are two refrigerated cargo containers in Option B;

one is used for aging carcasses, and the other to store frozen cuts. The frozen meats can be picked up or delivered. *The total cost for this combined facility is \$821,000.*

**c. Option C: Fixed-in-place Meat Plant Where Both Livestock Slaughter and Processing Activities Occur**

Option C is a 40 X 60 steel building that houses both the slaughter and processing activities. Unlike Options A and B, Option C includes purchased land. For purposes of this analysis, land costs totaling \$483,516 based on the cost of the small parcel in the Hop Kiln Business Park off Ford Road (3.7 acres, priced at \$3 per square foot/\$130,680 per acre).<sup>6</sup> The land is zoned “general industrial” (I-2) and has electric and water utility hook-ups; however, this site is not currently included in the Ukiah Valley Sanitation District. Alternatively, the MCMP could be located on property owned by the City or another public entity, with a long-term lease (20 years or longer) to ensure that the site improvement costs will be recouped. There have been such public/private partnerships involving meat processing facilities in other states, as discussed previously on pages 15 through 17 of this report regarding the Island Grown and Puget Sound cooperatives. Additionally, the Central Coast Ag Co-op received earmarked Congressional funding to build a mobile slaughter unit and the state of New Mexico funded the bulk of the Taos County mobile slaughter unit, which is now operated along with a stationary processing unit by the Taos County Economic Development Corporation (NMPAN website).

3.7 acre parcel in an industrial park, zoned I-2	\$483,516
Steel building w/insulated doors and roof & wall insulation—delivered to Ukiah	\$150,000
Freezer, Chill Cooler, Aging Cooler, Slaughter & Cutting area cooling system	\$75,000
2 refrigerated cargo containers, used	\$40,000
Interior holding pens	\$15,000
2 Ford F-150 trucks (used)	\$30,000
Rail system (used)	\$31,000
Refrigerated Box truck for deliveries (used)	\$30,000
1 forklift (used)	\$10,000
Misc. office furniture & equipment (used)	\$3,000
Slaughter fixtures & equipment (used)	\$30,000
Processing fixtures & equipment (used)	\$50,000
Wastewater pre-treatment equipment	\$122,000
Site prep, permits, utility hook-ups, engineering consultant	\$356,000
<b>TOTAL COST FOR OPTION C</b>	<b>\$1,425,516</b>

<sup>6</sup> Suitable acreage may be considerably less expensive in Lake County.

The design and cost of the facility are based primarily on the Iowa State University publication, Guide to Designing a Small Meat Plant (Thiboumery, 2009). The base price of the delivered building shell with 4 insulated doors and 6” of insulation in the roof and walls is \$23,335 from Empire Steel Building (Attachment 5C); the remaining cost of \$126,665 is for erecting the structure, pouring the concrete flooring, and improvements to the building, including electric wiring and fixtures, carpeting and linoleum, interior walls, a restroom, and small kitchen area.

There is \$356,000 budgeted for site preparation, permits, hook-ups and engineering consulting for this building, as well as \$122,000 to purchase and install the wastewater pre-treatment equipment. ***The total cost budgeted for the building is \$1,425,516.***

#### **d. Site selection criteria**

Several important criteria to be used when selecting a site for the MCMP are discussed below.

- Access to municipal sewer utilities.  
Mechanical pretreatment of the plant’s wastewater followed by discharge into a municipal sewer system will alleviate the need to have a series of wastewater treatment tanks or ponds and related management effort. Although fees to hook-up to the municipal sewer system can be quite high, their cost will be considerably less than the costs accrued over time to operate an onsite wastewater management system. Limited monitoring of the pretreatment equipment will be required.
- Access to municipal electric and water utilities.  
If these utilities are not close by, considerable cost can be incurred to extend lines to the site (such as for Option C). Potable water is required for washing down the carcasses and to clean the machinery, equipment, tools and work surfaces. Option B is expected to require transport of potable water from the processing plant to the ranch slaughter site.
- Proximity to a major transportation route.  
If located in Ukiah, MCMP will be within two miles of Highway 101. The majority of the participating ranchers will be within a 1-hour drive of the MCMP, and will travel on Highway 101 to get to the plant. Those in the Covelo area will need to drive 1.5 hours to get to the plant. Lake County ranchers will have to travel on Highway 20 and Highway 101 to access the plant. The specific site must be easily accessible to trucks bringing in livestock and loading out finished products. Highway 101 is also the primary route for traveling to the participating ranchers’ customers in North and East Bay areas. Nevertheless, it is advisable to have fencing and/or trees or bushes to screen the plant and livestock pens from direct public view.

- Community acceptance of project site.  
When the considerably larger meat plan in Ukiah was proposed in 2007, there was vocal opposition expressed, primarily by animal rights activists. There appears to be strong acceptance within the agricultural community of MCMP. Both the Ukiah City Council and the Mendocino County Board of Supervisors have expressed considerable interest in the current plant.
- Labor force availability.  
There are six custom-exempt facilities operating in Mendocino and Lakes Counties, which could be a likely source of labor. Finding experienced meat processing management will be critical to the success of the MCMP.
- Land site suitability.  
This criterion relates to appropriate zoning. Also, the facility should have minimal impact on the local community—visually and environmentally. The City of Ukiah permits “industrial, manufacturing, or storage uses which may be objectionable by reason of production of smoke, dust, noise, radioactivity, vibration, bright light or other causes” on sites with Manufacturing (M) zoning, subject to first securing a use permit. In the County of Mendocino, the MCMP would fit into the “Packing and processing-general” activity category. This activity requires a minor use permit on sites zoned General Industrial District (I-2) and a Zone (A-G major use permit in the Rural-Community District (R-C). It is a permitted use in the Agricultural zone, but such sites must be at least 40 acres, which is considerably larger than the three acres needed for this plant.
- Ranch site requirements.  
Ideally, this site for the modular slaughter unit has potable water and paved roadway to the site that is in good repair. The site should also have holding pen(s) that meet the Certified Humane criteria (see Attachment 5D, Ranch Site Facility Requirements developed for members of the Central Coast cooperative). The site should have a concrete pad with proper drainage to prevent surrounding areas from becoming soggy.

It is expected that all three options would be sited close to central Ukiah. Option A, the solo modular processing facility, is intended to be located in an industrial park with existing access to municipal sewer and water facilities. The modular processing facility portion of Option B would presumably be at the same site; the slaughter unit would be at a ranch site in Mendocino County.

## 6. Financial Analysis

This section includes the financial analysis of the three MCMP options, along with a slower growth version of Option C. The assumptions and capital investment requirements are first described for each option, followed by an analysis of the results for the scenarios for each option. The analysis includes 10 years of projections. It is based on a spreadsheet adapted from one developed by Holcomb, Flynn and Kenkel (2012) at Oklahoma State University.

### a. Assumptions

For Options B and C (base), it is assumed that the facility reaches its full production capacity in year 5, but its product flow continues to shift toward the winter months through year 7, when it reaches a steady state of work flow (Table 6-1). For Option A, the base case assumes that the facility reaches its full production capacity in year 8. This slower growth is modeled as the base case for Option A because only five of the 19 ranchers surveyed indicated that they would consider utilizing the processing-only plant; they represent one-third of the total slaughtered livestock reported by the ranchers for 2012. Thus, reaching the plant's capacity would be considerably slower for Option A than for Options B or C. For sensitivity analysis, a slower growth model for Option C was also developed; it reaches full capacity in year 7.

<b>Table 6-1 Plant Utilization Rates by Year and Option</b>										
	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>	<b>Year 8</b>	<b>Year 9</b>	<b>Year 10</b>
Option A	25%	30%	35%	45%	55%	70%	85%	100%	100%	100%
Option B	30%	50%	70%	85%	100%	100%	100%	100%	100%	100%
Option C-base	30%	50%	70%	85%	100%	100%	100%	100%	100%	100%
Option C-slower	25%	40%	55%	70%	80%	90%	100%	100%	100%	100%

For each option, it is assumed that, when operating at full capacity, the MCMP will be operating 50 weeks a year (reflecting ten days of closure for holidays) and process 30 animal equivalents weekly. Annual volumes, weight, slaughter fee, basic processing fee, total revenue, and packaging materials cost per head are displayed in Table 6-2. The slaughter and processing fees are similar to those charged currently by other USDA-inspected facilities in Northern California. Due to the design limitations of the spreadsheet, lambs and goats are combined and listed as lambs; this should not be problematic since the local ranchers surveyed recently reported slaughtering less than 100 goats during 2012. The dollar values reported in Table 6-2 are not adjusted for inflation; however, dollar values reported later in the cash flow projections for project years 1 through 5 and the projected returns over the 10-year planning period reflect an annual inflation rate of one percent.

The loan term is assumed to be 10 years, reflecting the fact that the facilities utilized in Option A and Option B are modular, rather than site-built. The following interest rates were assumed:

Option A & B	7 percent for building and equipment
Option C	6 percent for land, building and equipment
All Options	5 percent for Cash Reserve

The long-term loan rate in Option C is a blended rate; the loan is split; 50 percent of the financing is from a local bank at 7 percent and 30 percent is from the SBA at 5.5 percent. The MCMP’s owners must provide 20% as equity financing; they will also need to provide six months of working capital for the start-up business. It is assumed that Options A and B do not qualify for Section 504 financing; instead, 60% of the buildings and equipment-related costs will be financed through a commercial loan. All of the options also include Cash Reserve financing; this is interest-only financing provided by social impact investors to cover the MCMP’s negative cash flows.

Option A, in which the MCMP is only providing processing services, has four employees: a full-time plant manager/butcher; packaging/cutting person (starts as 0.5 Full Time Equivalent--FTE and eventually becomes full-time; driver/cleaner (starts as 0.5 FTE and becomes full-time); and an administrative assistant who starts as 0.5 FTE and becomes full-time. Benefits for employees employed at least 0.5 FTE are estimated at 35% of their wages; they include the payroll tax, retirement contribution and medical insurance.

In Option B, the MCMP provides slaughter and processing services at separate locations. It has six employees: a full-time plant manager/butcher; a butcher who starts at 0.5 FTE and increases to full-time; a full-time packaging/cutting person; a full-time driver/cleaner who becomes a full-time driver when a .75 FTE cleaner is hired in year 3; and a half-time administrative assistant who becomes full-time by year 3.

In Option C, the MCMP provides slaughter and processing services at one facility. It has five employees: a full-time plant manager/butcher; a butcher who starts at 0.5 FTE and increases to full-time; a full-time packaging/cutting person; a driver/cleaner who starts as .75 FTE and becomes full-time; and an administrative assistant who starts as .5 FTE and becomes full-time.

Sewer services are assumed to be provided by the Ukiah Valley Sanitation District. Water and electricity services are assumed to be provided by the City of Ukiah. The electricity charges in the expense projections reflect the fact that rates are 33% higher during the “summer” months (May through October) than the “winter” months (November through April) whenever a customer’s usage exceeds 144,000 kilowatt hours during a twelve-month period. Annual electricity usage and costs (in parentheses) reach the following at maximum capacity of each option: A—180,000 KWH (\$27,106); B—380,000 KWH (\$55,900); and C—345,000 KWH (\$50,900).

Salary and benefits are the MCMP’s highest cost category, followed by loan payments for Option C. For Options A and B, the next highest cost categories are insurance, electricity and transportation (in declining order). The workers compensation insurance rate for butchers and meat cutters is \$19.92 per \$100 of salary. The annual premium for general liability insurance (\$1,000,000 per occurrence/\$2,000,000 aggregate limit) for a slaughter and livestock facility is approximately \$44,000.

The MCMP pays no income taxes as a business; instead, its net earnings are treated as taxable income for its owners, proportionate to each owner’s share of the business. The IRS allows this flow-through tax treatment for businesses structured as agricultural cooperatives, LLCs, B-corporations and S-corporations.

<b>Table 6-2 Operating/Production Assumptions</b>			
<b>Operating Assumptions</b>			
Target Plant Capacity (weekly)	30		
Weeks per Year of Operation	50		
Total Target Annual Capacity	1500 (equivalent animal units)		
<b><u>Species #1</u></b>	<b><u>Cattle</u></b>	<b><u>Species #2</u></b>	<b><u>Hogs</u></b>
Percent of Annual Slaughter Capacity	64%	Percent of Annual Slaughter Capacity	17%
Annual Volume (no. of head)	960	Annual Volume (no. of head)	510
Hanging (hot carcass) Weight per Head	700	Hanging (hot carcass) Weight per Head	210
Base Slaughter Fee per Head	\$105.00	Base Slaughter Fee per Head	\$60.00
Boning/Cutting/Pkg. Charge per Pound	\$0.85	Boning/Cutting/Pkg. Charge per Pound	\$0.70
Total Revenue per Head	\$700.00	Total Revenue per Head	\$207.00
Packaging Materials per Head	\$25.00	Packaging Materials per Head	\$7.50
<b><u>Species #3</u></b>	<b><u>Lambs</u></b>	<b><u>Species #4</u></b>	<b><u>Bison</u></b>
Percent of Annual Slaughter Capacity	15%	Percent of Annual Slaughter Capacity	4%
Annual Volume (no. of head)	675	Annual Volume (no. of head)	60
Hanging (hot carcass) Weight per Head	50	Hanging (hot carcass) Weight per Head	800
Base Slaughter Fee per Head	\$35.00	Base Slaughter Fee per Head	\$100.00
Boning/Cutting/Pkg. Charge per Pound	\$0.95	Boning/Cutting/Pkg. Charge per Pound	\$0.95
Total Revenue per Head	\$82.50	Total Revenue per Head	\$860.00
Packaging Materials per Head	\$6.50	Packaging Materials per Head	\$30.00

## **b. Financial performance**

The MCMP's financial performance is summarized in Table 6-3. Option A's gross revenues rise from \$180,958 in the first year (at 25% plant utilization) to \$624,713 in year 10 (with a 1% annual inflation rate at the maximum. Gross revenues for Options B and C rise from \$265,457 in the first year (at 30% plant utilization to \$967,756 in year 10.

As intended, Option A requires the least investment capital (\$172,000 for the equity share for the building and equipment and \$470,000 for cash reserves). Due to the significant land cost, Option C requires the most investment overall and also the most capital (\$285,103 for the equity share for the land, building and equipment and \$450,000 for cash reserves for the core scenario). Option B requires the \$328,400 for the equity share for the building and equipment and \$380,000 for cash reserves.

All three options are financially viable. Option B has the highest internal rate of return over the ten year time horizon included in this analysis (11.1%). Option C has the second highest internal rate of return (6.6%). The payback period rate is six years for both Options B and C, and eight years for Option A.

Limited sensitivity analysis was done by slowing down the growth rate in capacity usage in Option C, such that it reached full plant utilization in Year 7 (rather than Year 5). This extended the payback period to beyond the ten year scope of this analysis, and reduced the internal rate of return significantly from 6.6 percent to 1.8 percent.

With long term projections, there is always uncertainty related to demand. However, the major difference between MCMP and various other processing facilities being considered in California is that most of the ranchers who expressed interest in utilizing the MCMP's services already have developed markets for their meats; they will primarily be shifting their slaughter and/or processing from one or more existing facilities to the MCMP. Thus, if the MCMP can provide reliable, high quality service, it is quite likely that these ranchers will shift relatively quickly to the MCMP as their slaughter and/or processing service provider. The challenge will be for the MCMP to quickly convince local ranchers that it provides reliable, high quality service. Ranchers could be reluctant to shift to the MCMP for fear of alienating their current processor and "losing their place in line", particularly since most facilities in Northern California currently do not have much unused capacity.



<b>Table 6-3 Summary of Financial Performance by Plant Option</b>			
	<b>OPTION A</b>	<b>OPTION B</b>	<b>OPTION C</b>
Plant capital investment	\$430,500	\$821,000	\$1,425,516
Debt financing	\$258,300 (60%)	\$492,600 (60%)	\$1,140,413 (80%)
Equity invested	\$642,200	\$708,400	\$735,103
Plant & equipment	\$172,200	\$328,400	\$285,103
Cash reserves	\$470,000	\$380,000	\$450,000
	<b>OPTION A</b>	<b>OPTION B</b>	<b>OPTION C</b>
Gross revenue in year 5	\$414,273	\$920,786	\$920,786
Breakeven point	year 6	year 3	year 3
Payback period	8 years	6 years	6 years
Internal rate of return	3.9%	11.1%	6.6%
Net present value (10% discount rate)	-\$382,243	\$82,739	-\$354,984
Net present value (5% discount rate)	-86,473	\$547,045	\$199,772
Cash reserves payoff	Year 8	Year 5	Year 5

### **c. Concluding Thoughts**

The differences in financial results across the options for the MCMP are clearly visible in Figures 6A, 6B and 6C. Although Option B has somewhat higher operating costs than Option C, the fact that there are large loan payments for the land purchase in Option C generates a higher internal rate of return for Option B. Additionally, the amount of capital needed to be raised from investors (including cash reserves) is slightly more (\$27,000) for Option C than for Option B. However, the ease of managing a business located at one site rather than split on two sites is also a consideration.

There are numerous unknowns currently—particularly wastewater pretreatment costs—that could significantly change the results of this financial analysis. Having an engineering consultant review some potential sites and provide information regarding wastewater pre-treatment equipment and the hook-up fees for related utilities would be a logical next step for moving ahead with the MCMP project.

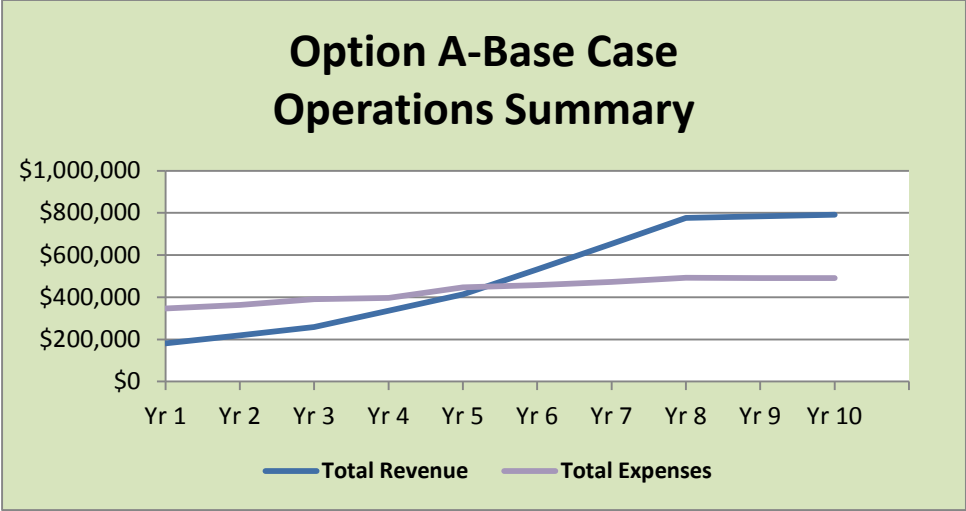


Figure 6A Option A Operations Summary

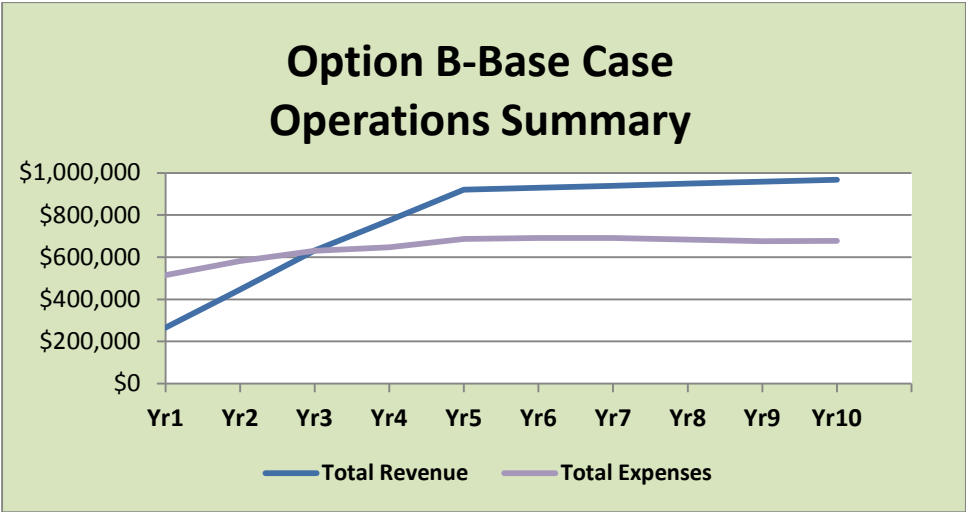


Figure 6B Option B Operations Summary

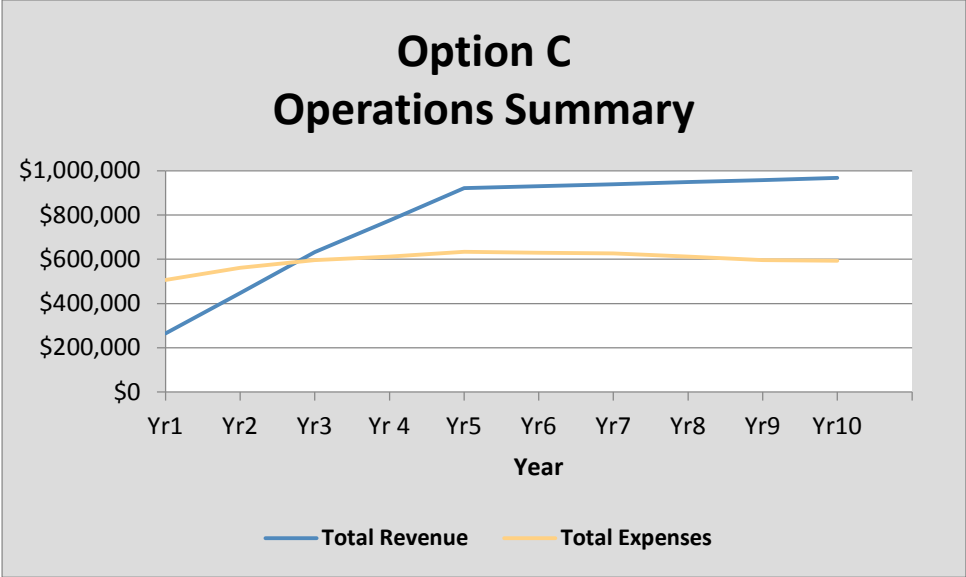


Figure 6C Option C Operations Summary

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# Attachments

## Attachment 5A Polar King Proposal



# PROPOSAL

Kathryn Quanbeck  
Food & Farm Consulting  
216 W.Perkins St., Suite 207  
Ukiah, CA 95482

February 19, 2013

**Model Number:** HH2435      **Installation:** Free Standing 35°F      **Proposal Number:** 2 - 2013

<b>Standard Equipment:</b> seamless fiberglass interior / exterior hasp lock (ext. door) safety release handle lockable door latch self-closing hinges heated door jamb magnetic gasket door closer sweep seal 208-230/1/60 refrigeration system low ambient controls defrost timer heated relief port (freezers) light switch/pilot light exterior color choice rain cap exterior doors remote thermometer interior lighting crowned roof heavy duty non skid floor heated freezer door	<b>Included Optional Equipment:</b> 2 Sloped Roofs 3 Compartments with 10'-0" Inside Ceiling Height 2 Center Mount Evaporator Coils (Model ACM-249) 2 Condensate Pump Installed On Center Mount Evaporator Coil 2 Shelf Mounted Condensing Units 2 10'-0" High x 54" Wide Door Upgrades 1 4' x 4' Window (Installed) 1 2-Compartment Sink with DTA 53 Faucet (Installed With Plumbin Access Box for Field Plumbing Installation On Site by Others at Purchasers Expense) 19 Vapor Proof Fluorescent Light Upgrades 12 Floor Drains (Trough) 7 NEMA Outlets 1 Meat Trolley Rail System with (56) Hooks/Trolleys & Scale 24 Feet of Stainless Steel Rough Out Flashing (Installed On Site by Others at Purchasers Expense) 24 Feet of Vertical Flashing (Installed On Site by Others At Purchasers Expense) 35 Feet Roof Flashing (Installed On Site by Others at Purchasers Expense) 3 Protective Bronz Glow Coil Coating	<b>Color Choices (choose one):</b> ___ Light Gray ___ Dunes Tan ___ Safety White ___ Beige  <b>Or choose a palette number from one of the following manufacturers.</b> ICI/Glidden# _____ Benjamin Moore# _____ Sherwin Williams# _____
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**Energy Independence & Security Act Compliant**

**PRICING/DELIVERY:**

Approximate Delivery:	4 to 8 weeks	Unit Price:	\$	223,697.16
Payment Terms:	30% Down	Shelving Cost (Installed):	\$	Not Included
	Balance Net 30 Days	Sales Tax:	\$	EXEMPT

Freight To: Ukiah, CA  
Shipping/Set-in-Place: \$ 29,742.00

**TOTAL DELIVERED PRICE:** \$ 253,439.16

**See attached Polar King Conditions of Sale**

This Proposal valid for 60 days  
An authorized representative shall initial page 1 of this proposal and sign page 2 of this proposal.

Initial: \_\_\_\_\_

Page 1 of 2

4418 New Haven Avenue; Fort Wayne, Indiana 46803 • 800-752-7178 • 260-428-2530 • FAX: 260-428-2533

[www.polar-king.com](http://www.polar-king.com)

**OUTDOOR WALK-IN COOLERS AND FREEZERS**



### Polar King Conditions of Sale

**GENERAL.** Acceptance of this Proposal is expressly conditioned upon Buyer's assent to the Polar King International, Inc. (PKI) Conditions of Sale as set forth below and this Proposal may not be assigned. PKI agrees to furnish the equipment and services only upon these conditions. The Proposal and the following conditions shall constitute the entire agreement between PKI and Buyer, notwithstanding the terms and conditions of any purchase order of the Buyer. Any changes to this Proposal or to the Conditions of Sale shall be reduced to writing and agreed to by PKI.

**DELIVERY.** All equipment manufactured, assembled or warehoused in the continental United States is delivered F.O.B. shipping point. Where the scheduled delivery of equipment is delayed by Buyer or by Force Majeure, PKI may deliver the equipment by moving it to storage for the account of and at the risk of Buyer. Shipping dates are based upon prompt receipt of all necessary information and approvals from Buyer. All delivery dates are approximate. Claims for shortages or other errors in delivery must be made in writing to PKI within ten days of delivery. Customer will be responsible for providing clear access to delivery site for Polar King to unload and set-the-equipment in place.

**PAYMENT - TITLE.** Except as set forth in the proposal for this order or otherwise agreed to by PKI in writing, payment terms are net 30 days from date of shipment. If Buyer delays delivery, payment shall become due on the date PKI is prepared to ship. If payments are not made when due, Buyer shall pay a late charge equal to 1 ½% per month (18% per annum) on all such overdue amounts. Buyer shall pay attorney fees and court costs incurred by PKI in collection of overdue payments. Title to the equipment sold shall remain with PKI until fully paid for in cash.

**FORCE MAJEURE.** PKI shall not be liable for loss, damage, or delay, nor be deemed to be in default from causes beyond its reasonable control or from fire, strikes, floods, tornados, earthquakes, hurricanes, war, sabotage, labor difficulties, act or omission of any governmental authority, compliance with import or export regulations, insurrection, riot, embargo, delays or shortages in transportation or inability to obtain necessary labor, materials or manufacturing facilities from usual sources, or from delays in the performance of its suppliers due to any of the foregoing causes. In the event of delay due to any such cause, the time for performance will be extended by a period of time equal to the time lost by reason of such delay and other affected contract provisions shall be equitably adjusted.

**EQUIPMENT WARRANTY.** PKI warrants that the equipment shall be free from defects in material and workmanship (for units installed and operated within the (48) contiguous states of the United States of America) as follows: The warranty period for the fiberglass structure and the door of the unit shall be for a period of ten years from the date of delivery. The warranty period for the refrigeration, electrical and mechanical systems shall be one year from date of delivery, if installed by PKI. The warranty period for door hardware, gaskets, heat tape and finishes shall be for a period of one year from the date of delivery. The warranty period for the compressor is five years from date of delivery. Should any failure to conform to the applicable warranty appear during the specified period, PKI will repair, replace or modify the defective part or parts. Repairs or replacements pursuant to the warranty shall not extend the original equipment warranty period. PKI shall not be responsible for providing working access to the defect. PKI warrants that the services of its personnel, if provided, will be performed in a workmanlike manner. Should a failure to conform arise during the applicable warranty period, Buyer agrees to promptly notify PKI to arrange for service of the defective part. This warranty shall not apply to any equipment or parts, which have been improperly installed, repaired or altered, have been subjected to misuse, negligence or accident; or have been used in a manner contrary to PKI operating and maintenance procedures. The above warranties and remedies are exclusive and in lieu of any and all representations, specifications, warranties and remedies either express or implied, herein or elsewhere, or which might arise under law or equity or custom of trade including without limitation warranties of merchantability and of fitness of a specified or intended purpose. The remedy specified represents the sole liability of PKI and the sole remedy of the Buyer with respect to or arising out of the equipment or services whether based on contract, tort (including negligence and strict liability), or otherwise.

**LIMITATIONS OF LIABILITY.** In no event shall PKI or its suppliers be liable, whether arising under performance of this contract, breach of this contract, or otherwise, for loss of anticipated profits, loss by reason of shutdown, non-operation, increased expense of operation, service interruptions, product loss, cost of money, loss of use of capital or revenue, or for any special, incidental or consequential loss or damage. PKI's liability on any claim of any kind, including negligence or strict liability, for any loss or damage arising out of, or resulting from this contract, or from its performance or breach, or from the manufacture, sale, delivery, resale, installation, startup or inspection, repair, operation, or use of any equipment covered by or furnished under this contract shall in no case exceed the purchase price allocable to the equipment, part, or service which gives rise to the claim. In no event, regardless of cause, shall PKI assume responsibility for or be liable for penalties or penalty clauses of any kind or for indemnification of customer or others for costs, damages, or expenses each arising out of or related to the goods or services of this order.

**TAXES.** The price does not include any federal, state or local property, sales, use, excise, gross receipts, franchise, or other like taxes which may now or hereafter be applicable to or imposed upon or with respect to the transaction, the property, its sale, its value or its use, or any services performed in connection herewith. Buyer agrees to pay or reimburse any such taxes which PKI or its suppliers are required to pay or collect.

**PROPRIETARY INFORMATION - CONFIDENTIALITY.** Any specifications, design, drawings, plans, notes, technical data or other information or materials of PKI submitted to the Buyer remain the exclusive property of PKI and may not, without its consent, be copied or communicated to a third party.

**CANCELLATION.** Any order or contract may be terminated by Buyer only upon written notice and payment of reasonable and proper termination charges, including but not limited to all costs identified to the order or contract incurred up to the later of the date of the notice or PKI's receipt of the notice of termination and all charges incurred by PKI in respect to the termination, plus 10% of the final net selling price.

**PARTIAL INVALIDITY.** If any provision herein or portion thereof shall for any reason be held invalid or unenforceable, such invalidity or unenforceability shall not affect any other provisions or portion thereof, but these Conditions of Sale shall be construed as if such invalid or unenforceable provision or portion thereof had never been contained herein.

**CHOICE OF LAW.** The laws of the State of Indiana shall govern this agreement.

**INVENTIONS, PATENTS, TRADEMARKS, COPYRIGHTS.** PKI warrants that the equipment purchased hereunder shall be delivered free of rightful claims for infringement of any United States patent or trademark, provided however that where equipment is manufactured from patterns, plans, drawings or specifications furnished by Buyer, Buyer shall indemnify PKI against and hold harmless PKI from all loss, damage, and expense arising out of any suit or claim against PKI for infringement of any patent, trademark, or copyright because of PKI's manufacture of such equipment or because of the use or sale of such equipment by any person. All right, title and interest in any inventions, developments, improvements or modifications of or for equipment or services furnished to the Buyer shall remain with PKI unless otherwise agreed to in writing between the parties.

\_\_\_\_\_  
John Benner, Regional Manager

Signature: \_\_\_\_\_  
Kathryn Quanbeck

Date: \_\_\_\_\_

Page 2 of 2

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[www.polar king.com](http://www.polar king.com)

**OUTDOOR WALK-IN COOLERS AND FREEZERS**



# Attachment 5B TriVan Estimate



## TriVan Truck Body

1385 West Smith Road  
Ferndale, WA 98248

Ph (360) 380-0773 [www.trivan.com](http://www.trivan.com)  
Fax (360) 312-1398

## Estimate

Date	Estimate #
3/5/2013	4011

Name / Address
UCCE Small Farm Program UofC Shermain Hardesty Davis, CA 95618

Ship To

P.O. No.	Terms	Due Date	Rep	Account #	FOB	Project
	50% Down-Bal ...	3/5/2013	Bob L		Ferndale, WA	

Item	Description
MOBILE SLAU...	<p>QUOTATION for "Modular Slaughter Unit" 38' Modular Unit to process and cool livestock</p> <p><b>DIMENSIONS:</b> Length: 38' outside length Width: 10' outside width Height: 11' inside height</p> <p><b>GENERAL DESCRIPTION:</b> This modular will be used for processing beef at the rate of about 10 head a day. It will consist of three main areas; processing, cooling and a small mechanical room for the refrigeration unit. The processing area will be approx 18 feet long, the cooler area approx 12 feet long, and the mechanical room 6 feet long. This modular will have a 125 amp service panel/ electrical system, the entire unit will be insulated &amp; interior lined. Access to the modular will be through rear swing doors, side cooler offload doors and a curbside man-door to the Mechanical Room. The modular exterior is painted white.</p> <p><b>SUBFRAME:</b> Subframe constructed of 8" Perimeter Channel and 4" Steel Junior I beams crossmembers, with 8" Ibeams at lifting lug points ~ (4) midspan lifting lug mounted outboard the frame</p> <p><b>WALLS:</b> Constructed of Snap-Lock extruded aluminum interlocking panels .100" exterior wall skin thickness 1" vertical support posts 12" on center Smooth, rivet-free &amp; puncture-resistant exterior skin.</p> <p><b>ROOF:</b> One-piece, .040" aluminum roof skin over hat-shaped extruded aluminum roof bows 24" on center (Mechanical Room only), 3" Jr I Beams on 12" centers with 12 ga alum sheet for the remainder of the unit (Cooler and Processing sections). Roof to be crowned for water drainage.</p> <p><b>REAR DOORS:</b></p>

<b>Subtotal</b>
<b>Sales Tax (0.0%)</b>
<b>Total</b>



**TriVan Truck Body**

1385 West Smith Road  
Ferndale, WA 98248

Ph (360) 380-0773 [www.trivan.com](http://www.trivan.com)  
Fax (360) 312-1398

**Estimate**

Date	Estimate #
3/5/2013	4011

Name / Address	Ship To
UCCE Small Farm Program UofC Shermain Hardesty Davis, CA 95618	

P.O. No.	Terms	Due Date	Rep	Account #	FOB	Project
	50% Down-Bal ...	3/5/2013	Bob L		Ferndale, WA	
Item	Description					
	<p>~ Double-rear doors c/w 10" long fixed handles on inside of each door for shutting door inside. Door opening is 48" x full height. ~ Doors are insulated &amp; lined per rest of trailer interior.</p> <p><b>SIDE DOOR, OFFAL, VENT, PARTITION DOOR:</b> ~ Curbside man-door (to Mechanical Room) with double freezer lock ~ 30" x 30" Access/Offal door, curbside rear ~ 12" x 18" Vent Door, installed inside Offal Door at curbside rear ~ Partition Double Doors constructed of Aluminum, utilizing double seal; door opening is 48" wide x full height</p> <p><b>FLOORING:</b> ~ Extruded aluminum non-slip TriVan plank flooring in Mechanical Room. ~ 1/8" Aluminum Diamondplate in Processing and Cooler Rooms ~ Subfloor is 3/4" "Tough" Thermo-Lite Board (Fiber Reinforced Polyurethane) ~ Full width Floor Drain Gutters at rear of Processing AND Cooler Rooms with Aluminum Grate (with holes).</p> <p><b>LINING:</b> Walls &amp; ceiling of processing &amp; cooler rooms lined with white Smooth Kemplite Glasboard (3/8" ply under) Mechanical room interior lined with 3/8" plywood painted white. ~ Bottom 48" is lined with 1/8" smooth aluminum with 1" coving at bottom.</p> <p><b>LINING: PARTITION WALL:</b> Partition wall with insulated double-doors (4" insulation)</p> <p><b>INSULATION:</b> ~ 3" urethane spray-foam insulation in walls, ceiling &amp; under floor. ~ 4" urethane spray-foam in front cooler room only, in walls, ceiling, floor.</p> <p><b>110V ELECTRICAL:</b> Supply &amp; install 125A/220V service panel in front mechanical room ~ Install (8) 15A GFCI interior plugs and (4) Beghelli Vaportite surface-mounted, 48" long double-tube fluorescent lights in Processing Room ~ Install (2) Beghelli Lights in Cooler</p>					

<b>Subtotal</b>
<b>Sales Tax (0.0%)</b>
<b>Total</b>



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**Estimate**

Date	Estimate #
3/5/2013	4011

Name / Address	Ship To
UCCE Small Farm Program UofC Shermain Hardesty Davis, CA 95616	

P.O. No.	Terms	Due Date	Rep	Account #	FOB	Project
	50% Down-Bal ...	3/5/2013	Bob L		Ferndale, WA	

Item	Description
PROCESSING ...	<p>NOTE: Further room details are shown below, organized by Processing Room, Cooler Room and Mechanical Room:</p> <p>Processing Room: Meat rail system with support structure built into walls and across ceiling to mount a single rail meat rail system, 8000lb capacity Includes: ~ 1000# In-line Rail Scale ~stainless steel Head inspection Loop ~stainless steel Inspection Tray ~stainless steel Grab Bar for hanging trollies and hooks, with S/S backing plate ~paper towel holder above sink ~ (2) cargo rings flush mounted in floor and (2) 2,000lb capacity cable winches. ~ Exhaust fan &amp; intake air vent ~ Knee operated Sink station with hot water for hand and knife washing and hose bib for washing ~ Knife sterilizer attached to sink station ~ Water Mixing Station with 20ft of Water Hose ~ Acid wash system with 10 gallon tank, small pressure pump and plumbing to process area. Includes spray wand. ~ 2 part Removable Aluminum Ramp constructed of Aluminum Grocery Floor Plank (Ramps can be removed and stored in rear of trailer during transport)</p>
COOLER ROOM	<p>Cooler Room: Meat rail system with support structure built into walls and across ceiling to mount a (4) rail meat rail system, 8000lb capacity ~ 1000# In-line Rail Scale Walk-in Cooler Room sized to chill 8,000lb "hot meat" to below 45 degrees in 18 hours. Condensing unit: 3HP R-22 Copeland (BHT040X8) Evaporator: 20,800 BTU R-22 Bohn ~ Digital Thermostat ~ stainless steel hooks in aft corners for hanging meat hook trees</p>

<b>Subtotal</b>
<b>Sales Tax (0.0%)</b>
<b>Total</b>



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Fax (360) 312-1398

**Estimate**

Date	Estimate #
3/5/2013	4011

Name / Address
UCCE Small Farm Program UofC Shermain Hardesty Davis, CA 95618

Ship To

P.O. No.	Terms	Due Date	Rep	Account #	FOB	Project
	50% Down-Bal ...	3/5/2013	Bob L		Ferndale, WA	

Item	Description
PLUMBING SY...	Mechanical Room: Plumbing system to include provision to connect water and sewer lines to the Modular Unit. ~ "On-demand" Renaii propane water heater. ~ All plumbing is surface-mounted for easy access, winter-proofed for cold temp application. ~ Includes pressure-pump, expansion tank and plumbing to processing area. ~ Two Propane tanks, venting and hookups mounted in front storage compartment
OTHER PAINT-WHITE UNDERCOATI... DELIVERY TERMS	Body exterior painted Ford white, excluding roof, PPG acrylic urethane paint. Underside of body to be fully undercoated F.O.B. TriVan Truck Body Ferndale WA 50% Down with Order, Balance Due prior to Delivery

<b>Subtotal</b>	USD 187,885.00
<b>Sales Tax (0.0%)</b>	USD 0.00
<b>Total</b>	USD 187,885.00

Attachment 5C Empire Steel Building Estimate



5230 CARROLL CANYON RD #300  
SAN DIEGO, CA. 92121  
WWW.EMPIREBUILT.COM  
800.905.3443 FAX 858-362-0470

---

TO: SHERMAIN HARDESTY

FROM:

---

COMPANY:

DATE: 4/15/13

---

FAX NUMBER:

TOTAL NO. OF PAGES:

---

PHONE NUMBER

---

RE: STEEL BUILDING

---

URGENT

FOR REVIEW

PLEASE COMMENT

PLEASE REPLY

---

Shermain,

The price for a 40' x 60' x 14' steel building with a 1/2:12 roof pitch, 26 gauge galvalume roof, 26 gauge painted walls, (4) 4'x7' insulated walk doors with mortise locksets, (3) 3'x3' insulated windows, eave & base closures, and long life fasteners is \$18,155

Add \$645 for color matched rain gutters & downspouts

Add \$435 for a 3'x40' overhang with colored soffit panels on an endwall

Add \$4,100 for 6" roof & 6" wall insulation with WMP-50 Facing (polypropylene, strongest & best for steel building)

All Prices INCLUDE delivery. Prices are good for 14 days due to an unstable steel market. Sales tax will be added to the total.

Erection, anchor bolts, foundation, and foundation plan are by others

---

\*I do guarantee the best price spec for spec on an AC 172 (formerly AISC) certified building

Plans are running between 2 and 4 weeks and building delivery is taking 4 to 8 weeks depending on complexity and workload. You will receive 3 sets of engineered and stamped blue prints, anchor bolt setting plans and column reactions plus CA calculations.

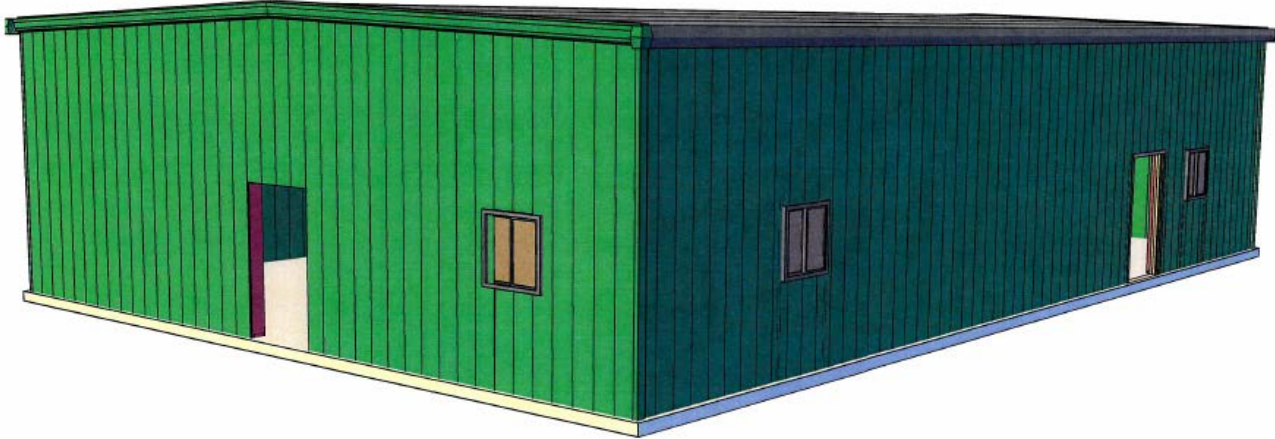
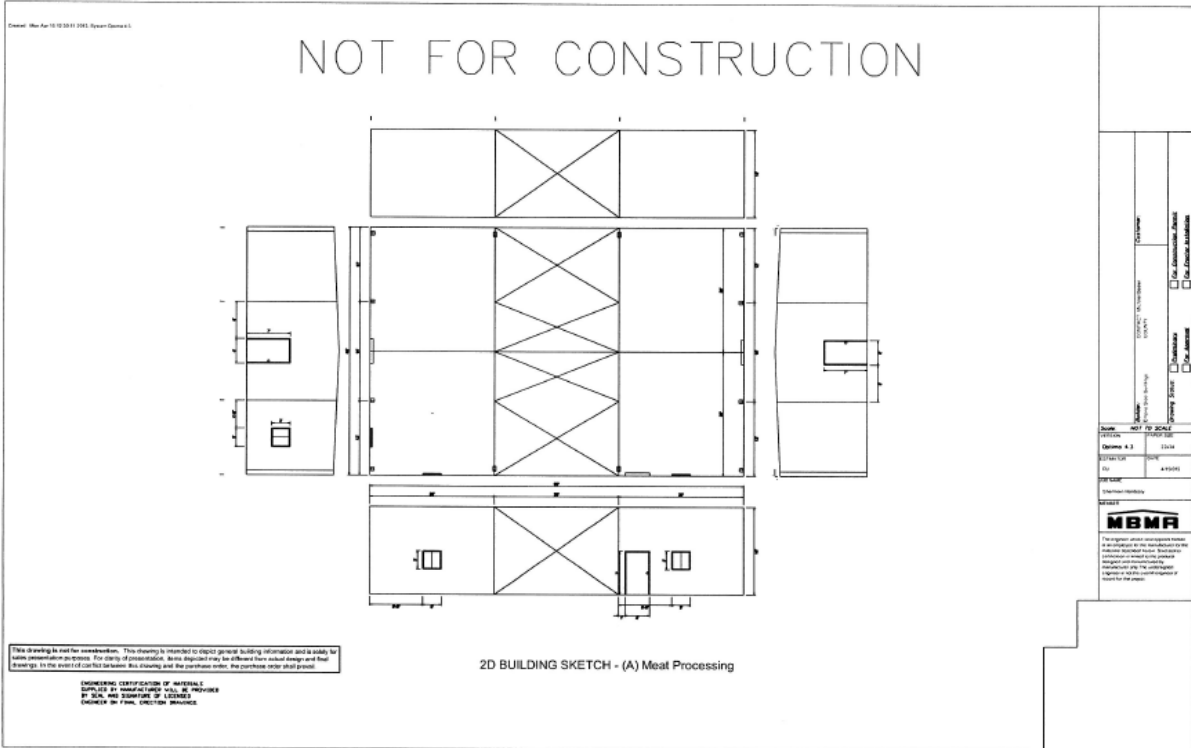
Thank you,



**Ron Jones**

-

2



Project Notes

1) Anchor Bolts are NOT included

Loads

Project Use Category	<b>Agricultural</b>	Jobsite Address	<b>N/A</b>
Building Code	<b>2010 California</b>	County	<b>Ukiah, CA, N/A Mendocino</b>
<b>Live/Wind</b>			
Live Load	<b>20.000 psf</b>	Wind Category	<b>N/A</b>
Trib. Area Reduction Allowed	<b>Yes</b>	Miles From Coastline	<b>N/A</b>
Wind Speed	<b>85.00 mph</b>	Elevation Above Sea Level	<b>N/A</b>
Wind Exposure	<b>Exposure C</b>	Rain Intensity	<b>4.0000 in/hr</b>
Hurricane Coastline	<b>No</b>		
<b>Snow</b>			
Ground Snow Load	<b>0.000 psf</b>	Snow Exposure	<b>N/A</b>
Min Roof Snow Load	<b>0.000 psf</b>	Rain Load	<b>N/A</b>
<b>Seismic</b>			
Spectral Response(Ss)	<b>204.10 %</b>	% of Snow Load for Seismic	<b>Normal</b>
Spectral Response(Sh)	<b>N/A</b>	Seismic Zone	<b>N/A</b>
Spectral Response(S1)	<b>96.90 %</b>	Near Source Factor	<b>N/A</b>
Spectral Response(S2)	<b>N/A</b>	Design Seismic for Schools	<b>N/A</b>
Accelerated Coefficient(Aa)	<b>N/A</b>	Site Class/Soil Type	<b>(D) Stiff Soil</b>
Velocity Coefficient(Av)	<b>N/A</b>		

Sustainability and Energy Efficiency

Sustainability Goal	<b>Unknown</b>
Energy Efficiency Code	<b>Unknown</b>
Has Panel Air Infiltration Requirements	<b>No</b>



**New Building A - Meat Processing**

Label - Name Structure Type	<b>A - Meat Processing</b> <b>New</b> <b>Stand Alone</b>	Frame Type Elevation A	<b>Symmetrical</b> <b>Sidewall</b>
-----------------------------------	--	---------------------------	---------------------------------------

**Loads, Wind Enclosure, Deflections & Sidesway**

<b>Building Loads</b>		<b>Importance Factors</b>	
Roof Snow Load By Design	<b>0.000 psf</b>	Snow Is	<b>0.80</b>
Occupancy Category	<b>I - Low Hazard</b>	Wind Iw	<b>0.87</b>
Thermal Condition	<b>N/A</b>	Seismic Ie	<b>1.00</b>
Seismic Design Category	<b>E</b>	Designed Snow Exposure	<b>N/A</b>

<b>Wind Enclosure</b>		<b>Calculated - Enclosed</b>
Enclosure		<b>Yes</b>
Are all Framed Openings enclosed with materials designed to resist building wind loads?		<b>Yes</b>
Are all Open Area enclosed with materials designed to resist building wind loads?		<b>Obstructed flow</b>
Open Building Condition		

<b>Uniform Collateral Loads</b>	
Ceiling Load	<b>0.000 psf</b>
Plaster/Sheetrock Ceiling	<b>No</b>
Brittle Wall/Dryvit	<b>No</b>
Other	<b>3.000 psf</b>

<b>Deflections</b>			<b>Roof Panel</b>			<b>Rafters</b>		
<b>Purlins</b>			Live			Live		
Live	<b>L/150</b>	<b>Default</b>	Snow			Snow		
Snow	<b>L/180</b>	<b>Default</b>	Wind			Wind		
Wind	<b>L/180</b>	<b>Default</b>	Total Gravity			Total Gravity		
Total Gravity	<b>L/120</b>	<b>Default</b>	Total Uplift			Total Uplift		
Total Uplift	<b>N/A</b>							
Girts			Live			Live		
Wall Panel			Snow			Snow		
Endwall Columns			Wind			Wind		
			Total Gravity			Total Gravity		
			Total Uplift			Total Uplift		

<b>Sidesway</b>			
<b>Crane</b>			
Crane	<b>H/100</b>	<b>Default</b>	
<b>Frame</b>			
Live	<b>H/60</b>	<b>Default</b>	<b>(H/60)</b>
Snow	<b>H/60</b>	<b>Default</b>	<b>(H/60)</b>
Wind	<b>H/60</b>	<b>Default</b>	<b>(H/60)</b>
Total Gravity	<b>H/60</b>	<b>Default</b>	<b>(H/60)</b>
Total Wind	<b>H/60</b>	<b>Default</b>	<b>(H/60)</b>
Total Seismic	<b>H/50</b>	<b>Default</b>	<b>(H/50)</b>

**Topography - Escarpments**

Does the building lie on the upper half of a hill, ridge, or escarpment?	<b>No</b>
Is this hill, ridge or escarpment unobstructed in any direction by another similar topographic feature within a distance of 100 times its height or 2 miles (3.21 km), whichever is less?	<b>No</b>
Is the hill or escarpment at least twice as tall as any other topographic features within 2 miles (3.21 km)?	<b>No</b>
Does the average slope on the top half of the hill, ridge, or escarpment equal or exceed 20% (11.3°)?	<b>No</b>
Is the height of the hill, ridge or escarpment equal to or greater than 15 feet (49.21 m) for Exposure C or D, or 60ft (196.8 m) for Exposure B?	<b>No</b>

<b>Topographic Effects</b>	
Hill Shape	<b>N/A</b>
Lh, Horizontal distance of crest to half height of hill or escarpment	<b>N/A</b>
H, Height of Hill or Escarpment	<b>N/A</b>
X, Distance From the Crest to the Building Site	<b>N/A</b>

**Geometry, Sidewalls & Endwalls**

Width	<b>40'-0"</b>	Length	<b>60'-0"</b>
<b>SWA</b>		<b>SWC</b>	
Eave Height	<b>14'-0"</b>	Eave Height	<b>14'-0"</b>
Roof Slope	<b>0.500000 / 12</b>	Roof Slope	<b>0.500000 / 12</b>
Distance To Ridge	<b>20'-0"</b>	Distance To Ridge	<b>20'-0"</b>
Girts	<b>8.0" - Bypass</b>	Girts	<b>8.0" - Bypass</b>
<b>EWB</b>		<b>EWD</b>	
Type	<b>Bearing Frame with Cold-Form Rafter</b>	Type	<b>Bearing Frame with Cold-Form Rafter</b>
Girts	<b>8.0" - Flush</b>	Girts	<b>8.0" - Flush</b>
Setback	<b>System Standard 0'-4"</b>	Setback	<b>System Standard 0'-4"</b>

**New Building A - Meat Processing Continued...**  
**Geometry, Sidewalls & Endwalls Continued...**

Purlins	<b>8.0" Z</b>	Pregalvanized Secondary	<b>No</b>
Steel Shop Coat	<b>Red</b>	Hot-Dipped Primary	<b>No</b>
Bolt Finish	<b>Plated</b>	Seal Welds	<b>N/A</b>

**Bracing**

Roof	<b>Rod</b>	(EWB to EWD) @ Bays	<b>2</b>
SWA	<b>1 Tier Rod</b>	(EWB to EWD) @ Bays	<b>2</b>
SWC	<b>1 Tier Rod</b>	(EWD to EWB) @ Bays	<b>2</b>
EWB	<b>1 Tier Rod</b>	(SWC to SWA) @ Bays	<b>1</b>
EWD	<b>1 Tier Rod</b>	(SWA to SWC) @ Bays	<b>1</b>
Purlins	<b>Not Allowed</b>		
Girts	<b>Not Allowed</b>		

**Portal Frames**

<b>SWA</b>		<b>SWC</b>	
Rod Tiers Above	<b>N/A</b>	Rod Tiers Above	<b>N/A</b>
Max Column Web Depth	<b>N/A</b>	Max Column Web Depth	<b>N/A</b>
Max Rafter Web Depth	<b>N/A</b>	Max Rafter Web Depth	<b>N/A</b>

\* Note - It may be possible to reduce bracing costs by locating the bracing in a wider bay. If the braced bay is not as wide as it is tall, consider moving the bracing to a bigger bay if possible.

**Spacing**

Bay Spacing	<b>(EWB-EWD)</b>	<b>3@20'-0"</b>
EWB Column Spacing	<b>(SWC-SWA)</b>	<b>12'-0", 16'-0", 12'-0"</b>
EWD Column Spacing	<b>(SWA-SWC)</b>	<b>12'-0", 16'-0", 12'-0"</b>
EWB Column Recesses	<b>(SWC-SWA)</b>	<b>0.0", 0.0", 0.0", 0.0"</b>
EWD Column Recesses	<b>(SWA-SWC)</b>	<b>0.0", 0.0", 0.0", 0.0"</b>

\* Note - Negative column recess raises the base of the column above the finished floor.

SWA Girt Spacings	<b>(Base to Eave)</b>	<b>System Standard</b>
SWC Girt Spacings	<b>(Base to Eave)</b>	<b>System Standard</b>
EWB Girt Spacings	<b>(Base to Peak)</b>	<b>System Standard</b>
EWD Girt Spacings	<b>(Base to Peak)</b>	<b>System Standard</b>
Purlin Spacing	<b>(Nominal Horizontal Distance)</b>	<b>System Standard</b>
Designed Purlin Spacings on the Slope - SWA		<b>(Eave to Peak) 2@4'-4 1/4", 2@5'-0 1/16"</b>
Designed Purlin Spacings on the Slope - SWC		<b>(Eave to Peak) 2@4'-4 1/4", 2@5'-0 1/16"</b>

**Frame Groups**

Group Number	<b>1 (Clearspan)</b>
Frame Lines	<b>2 to 3</b>
Hardened Washers for High Strength Bolts	<b>Yes</b>

<b>SWA</b>		<b>SWC</b>	
Column	<b>Straight Required</b>	Column	<b>Straight Required</b>
Unbraced	<b>No</b>	Unbraced	<b>No</b>
Max Column Web Depth	<b>68.0"</b>	Max Column Web Depth	<b>68.0"</b>
Max Rafter Web Depth	<b>68.0"</b>	Max Rafter Web Depth	<b>68.0"</b>
Exterior Column Elevation	<b>At Finished Floor</b>	Exterior Column Elevation	<b>At Finished Floor</b>

**New Building A - Meat Processing Continued...**

**Roof Panel (2,553 sqft)**

Type	<b>PBR</b>	<b>Options</b>	
Gauge	<b>26</b>	SS Clip Type	<b>N/A</b>
Color	<b>Galvalume Plus</b>	Thermal Blocks	<b>N/A</b>
Thickness	<b>N/A</b>	UL90	<b>Yes</b>
R Value	<b>N/A</b>	Eave Icing	<b>No</b>
Interior Panel	<b>N/A</b>	Wide Tape	<b>No</b>
Finish Warranty	<b>Yes</b>		
Seamer Rental	<b>N/A</b>		
<b>Weathertightness Warranty</b>		<b>Fastener Information</b>	
Type	<b>N/A</b>	Type	<b>Self-Drilling</b>
Term	<b>N/A</b>	Head Finish	<b>Long-Life</b>
		Length	<b>2"</b>

- \* Note - An asterisk (\*) next to the color indicates a Signature 300 color selection.
- \* Note - Insulation not included unless specified on the Insulation page of this document.

**Wall Panel (3,100 sqft)**

Type	<b>PBR</b>	<b>Options</b>	
Gauge	<b>26</b>	Reverse Rolled	<b>No</b>
Thickness	<b>N/A</b>	Concrete Notch	<b>No</b>
Color	<b>Fern Green</b>	Sealed Wall	<b>No</b>
Finish Warranty	<b>Yes</b>	Eave Closure	<b>Yes</b>
Interior Panel	<b>N/A</b>	Base Option	<b>Formed Base Trim</b>
R Value	<b>N/A</b>	Base Color	<b>N/A</b>
<b>Fastener Information</b>		Base Closure Strips	<b>Yes</b>
Type	<b>Self-Drilling</b>	Outside Metal EW Closures	<b>No</b>
Head Finish	<b>Long-Life</b>	Foam Tape (If applicable)	<b>No</b>
Length	<b>2"</b>		

- \* Note - An asterisk (\*) next to the color indicates a Signature 300 color selection.

**Trim**

<b>SWA Options</b>		<b>SWC Options</b>	
Trim Type	<b>Simple Trim</b>	Trim Type	<b>Simple Trim</b>
Northern/Ice Gutter	<b>N/A</b>	Northern/Ice Gutter	<b>N/A</b>
<b>EWB Options</b>		<b>EWD Options</b>	
Trim Type	<b>Rake Trim</b>	Trim Type	<b>Rake Trim</b>
<b>Color Selections</b>		Trim Profile	<b>Classic</b>
Eave	<b>Fern Green</b>	Trim is 26 gauge unless noted otherwise.	
Rake	<b>Fern Green</b>	(*) Denotes Signature 300 color.	
Corner	<b>Fern Green</b>	Trim for roof/wall system with Sig 300 color is 24 gauge.	
Gutters	<b>None</b>		
Downspouts	<b>N/A</b>		
Roof to Roof	<b>N/A</b>		
Roof to Wall	<b>N/A</b>		

<b>New Building A - Meat Processing Continued...</b>
<b>Accessories</b>

**Windows**

Elevation	<b>SWA</b>	Distance From Left Steelline	<b>8'-6"</b>
Bay	<b>1</b>	Distance From Left Column	<b>8'-6"</b>
Quantity	<b>1</b>	Distance From Floor	<b>4'-0"</b>
Size	<b>3030 AHS</b>	Located In Liner	<b>No</b>
Frame	<b>Bronze</b>	Include Framed Opening	<b>No</b>
Glass	<b>Tinted</b>	Insulated	<b>Yes</b>
Elevation	<b>SWA</b>	Distance From Left Steelline	<b>48'-6"</b>
Bay	<b>3</b>	Distance From Left Column	<b>8'-6"</b>
Quantity	<b>1</b>	Distance From Floor	<b>4'-0"</b>
Size	<b>3030 AHS</b>	Located In Liner	<b>No</b>
Frame	<b>Bronze</b>	Include Framed Opening	<b>No</b>
Glass	<b>Tinted</b>	Insulated	<b>Yes</b>
Elevation	<b>EWB</b>	Distance From Left Steelline	<b>32'-6"</b>
Bay	<b>3</b>	Distance From Left Column	<b>4'-6"</b>
Quantity	<b>1</b>	Distance From Floor	<b>4'-0"</b>
Size	<b>3030 AHS</b>	Located In Liner	<b>No</b>
Frame	<b>Bronze</b>	Include Framed Opening	<b>No</b>
Glass	<b>Tinted</b>	Insulated	<b>Yes</b>

\* Note - Windows may have a Framed Opening included based on placement even when the user has not specifically asked for it.

**Walk Doors**

Elevation	<b>SWA</b>	Distance From Left Steelline	<b>41'-0"</b>
Bay	<b>3</b>	Distance From Floor	<b>0'-0"</b>
Quantity	<b>1</b>	Distance From Left Column	<b>1'-0"</b>
Size	<b>4070</b>	Trim	<b>SIG - 200 TBD</b>
Style	<b>M - Solid</b>	Lockset	<b>Mortise Lockset</b>
Type	<b>Knock Down</b>	Swing	<b>Left Hand Out</b>
Primer Color	<b>White</b>	Glazing	<b>N/A</b>
In Liner	<b>No</b>	Options	<b>Keyed Alike</b>
ADA Door Compliancy	<b>No</b>		<b>Insulated</b>
Elevation	<b>EWB</b>	Distance From Left Steelline	<b>18'-0"</b>
Bay	<b>2</b>	Distance From Floor	<b>0'-0"</b>
Quantity	<b>1</b>	Distance From Left Column	<b>6'-0"</b>
Size	<b>4070</b>	Trim	<b>SIG - 200 TBD</b>
Style	<b>M - Solid</b>	Lockset	<b>Mortise Lockset</b>
Type	<b>Knock Down</b>	Swing	<b>Left Hand Out</b>
Primer Color	<b>White</b>	Glazing	<b>N/A</b>
In Liner	<b>No</b>	Options	<b>Keyed Alike</b>
ADA Door Compliancy	<b>No</b>		<b>Insulated</b>
Elevation	<b>EWD</b>	Distance From Left Steelline	<b>18'-0"</b>
Bay	<b>2</b>	Distance From Floor	<b>0'-0"</b>
Quantity	<b>1</b>	Distance From Left Column	<b>6'-0"</b>
Size	<b>4070</b>	Trim	<b>SIG - 200 TBD</b>
Style	<b>M - Solid</b>	Lockset	<b>Mortise Lockset</b>
Type	<b>Knock Down</b>	Swing	<b>Left Hand Out</b>
Primer Color	<b>White</b>	Glazing	<b>N/A</b>
In Liner	<b>No</b>	Options	<b>Keyed Alike</b>
ADA Door Compliancy	<b>No</b>		<b>Insulated</b>

<b>Insulation</b>
-------------------

**Insulation**

Type	<b>Blanket</b>	<b>Insulate</b>	
Facing	<b>WMP-50</b>	<b>SWA</b>	<b>No</b>
Tabs	<b>2 @ 3"</b>	<b>SWC</b>	<b>No</b>
Thickness	<b>6.00"</b>	<b>EWB</b>	<b>No</b>
Roof Insulation	<b>2,604 sqft</b>	<b>EWD</b>	<b>No</b>
Starter Rolls	<b>4'-0"</b>	<b>Roof</b>	<b>Yes</b>
Running Rolls	<b>6'-0"</b>	<b>Partition</b>	<b>No</b>
Roll Length	<b>N/A</b>		
Include Patch Tape	<b>Yes</b>		

New Building A - Meat Processing Continued...			
Insulation Continued...			

	<u>Blanket</u>	<u>Insulate</u>	
Type	WMP-50	SWA	Yes
Facing	2 @ 3"	SWC	Yes
Thickness	6.00"	EWB	Yes
Wall Insulation	3,031 sqft	EWD	Yes
Starter Rolls	4'-0"	Roof	No
Running Rolls	6'-0"	Partition	No
Roll Length	N/A		
Include Patch Tape	Yes		



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**XYZ AGRICULTURE  
COOPERATIVE**

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# **Ranch Site Facility Requirements**

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Released:  
01/01/0000

Adopted by:  
XYZ Agriculture Cooperative Board of  
Directors

---

## Introduction

All harvest and processing activities done by the XYZ AGRICULTURE COOPERATIVE MHU are monitored by a USDA inspector who ensures that operations are performed in accordance with rules and regulations established by FSIS who work to assure the consumer they are receiving wholesome and safe products. Ranch sites must comply with USDA and XYZ AGRICULTURE COOPERATIVE criteria to use the MHU service. Each ranch facility will be pre-inspected by a XYZ AGRICULTURE COOPERATIVE representative as an official part of the mobile unit. Livestock owners or a ranch employee **must be present** at time of harvest for ante mortem humane handling of animals and to assist with washing away of blood and debris and loading offal into barrels.

## Farm/Ranch Site Requirements

To become an approved facility, a ranch must meet these criteria:

1. **Holding Pen** large enough for livestock to move around for ante-mortem inspection and must have some shelter for waiting animals to be protected from inclement weather. USDA inspector must be able to observe animals from each side safely. Fresh water available for waiting animals plus feed manger if animals are held more than 24 hours prior to harvest.
2. All livestock presented for **Ante-mortem Inspection** are under the control of the USDA FSIS inspectors. We ask that all livestock to be processed are healthy animals to eliminate suspects. (**will not accept 30 month and older cattle due to increased complications with SRM's**)
3. **Suspect Pen** for livestock if inspector thinks an animal is not healthy. On the suspect pen growers need to supply a sign specifying the pen as a suspect pen. Pen needs to be able to hold 1-2 beef size animals.
4. **Alley** that leads to a stun box and suspect pen, also used to restrain livestock for health inspection if necessary by inspector. Please consider examples from Temple Grandin available upon request.
5. **Stun Box** high enough so livestock can not escape, must have non-slip flooring and solid metal walls. Latch on stun box must be easily extracted to allow door to open and animal to fall out of box. Stun box needs a cat walk for butcher to have full accessibility to stun.
6. **Visual and Sound Barrier** is required between the processing area and the holding pens.
7. **Concrete floor** extending from stunning box to mobile unit must be 12' \* 12' so that the stunned animal does not come in contact with any dirt prior to being shackled and lifted into the mobile unit. A pressure potable water hose must be available to minimize external mud or manure contamination on the animal or butcher and inspector's boots. The concrete must have a drop off for drainage from one corner to get water away from kill sight. Waste water including blood will be drained away so as to never create a problem. Septic tank systems are preferred, however not mandatory. To provide guidance on the disposal of wash water see *NRCS guidelines* attached to this document.

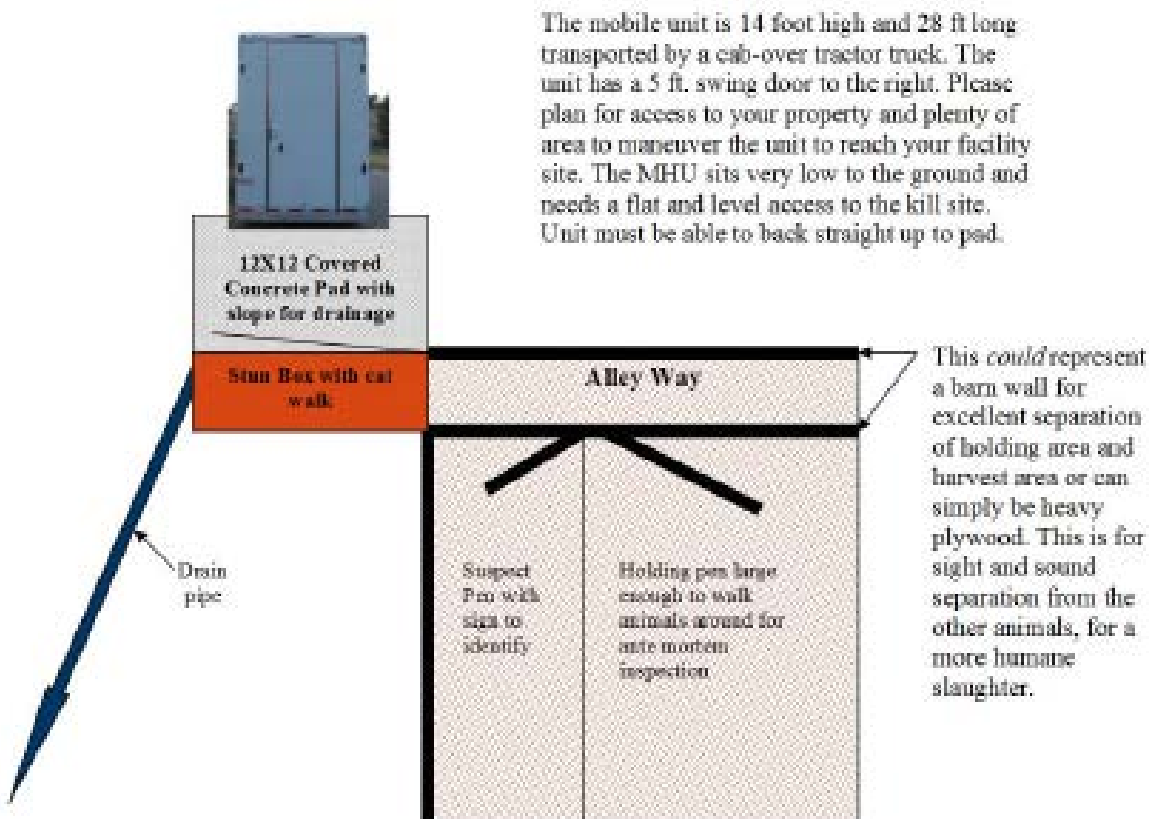


8. In case of excessive heat or rain, the area between the stunning box extending to the unit needs a **Roof or a Pipe Frame** to hold up a temporary canvas or plastic guard to protect the working area.
9. A clean and convenient **Port-A-Potty** must be provided for the inspector and operator/butcher and a reasonable distance from the kill site. USDA Inspectors may not use bathroom facilities attached to a house or barn for liability reasons.
10. If possible ranch owners will supply a 220 - 3 phase outlet to run the unit generator.
11. If **Dust or Flies** become a problem, it will be required to mitigate those factors. Dust control will be a consideration seasonally. An assessment will be done on each facility to determine the potential dust problem and will be the deciding factor in scheduling a ranch harvest. Options of dust and fly control may be:
  - a. Grass areas around the facility to minimize mud and dust.
  - b. Pre-watering with sprinkler and planting off grass may be required.
  - c. **Non-residual fly spray** and traps around the stun box and facility to minimize flies during and before harvest.
  - d. If determined that a threatening fly problem exists at a site, pre-spraying will be required to mitigate the fly problem, prior to mobile unit arrival.
  - e. Fly predators are a natural and effective way to prevent the fly population from developing. These would be used per the instructions of how many animals are on or near the facility and spread across the manure areas. Fly predators stop flies by destroying the next generation of flies in their immature pupa (cocoon) stage. It would be recommended that each facility begin using the fly predators in early spring and through the warm months the rest of the year. They would reapply them every 4 weeks. [www.spalding-labs.com](http://www.spalding-labs.com) or 1-877-838-5723.
12. **Inedible Policy**
  - a. The unit will supply barrels for guts and hides, heads and lower legs. Beef inedible barrels will be loaded on the unit and securely strapped for transport after all processed carcasses are placed in the cooler. The barrels will be off-loaded at the cut and wrap facility for pick-up. Hides will be inspected on live animal before slaughter day and the owner is responsible for calling the State Brand Inspector. Hides can be added to inedible barrels or left for the owner. Sheep or goat inedible will be bagged in thick construction bags and taken to the landfill by the owner.
13. **Humane Handling** will be assessed each slaughter day by a USDA inspector. Our policy for Humane Handling can be seen in the attached SSOP document and we highly recommend Temple Grandins books and website.
14. **Ear Tags** are required on all animals for traceability from ranch to wrap.

**If you are in disagreement with any actions or decisions that a FSIS inspector makes, bring it to the attention of the mobile unit butcher or manager. NOT THE INSPECTOR! Any abuse or mistreatment of a FSIS Inspector will not be tolerated as it will jeopardize our grant of inspection privileges. Consequences of abuse or mistreatment will result in loss of mobile unit use at your site and you may be asked to resign your membership in the cooperative.**

## Member Farm/Ranch Facility Diagram

This is a basic plan idea. Variations will apply depending on your facility needs. Please contact unit manager to ensure that you are within USDA requirements.



**Stun Box:** Solid metal sides; non slip floor; must be adjusted to fit your animal's size; latch on box must be easily extracted to allow door to open and animal to fall out of box; needs cat walk to wrap around from front to half way around side for butcher to reach animal head.

Last updated on 1/2/2012

Ranch Facility Requirements



United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

430 G Street, #4164  
Davis, CA 95616  
(530) 792-5621  
FAX (530) 792-5791

Date: July 27, 2005

SUBJECT: ENG- Wash water disposal for Mobile Slaughter Units

Purpose: To provide guidance on the disposal of wash water used for cleaning mobile slaughter units.

A question has been raised regarding the management and disposal of wash water from Mobile Slaughter Units. The specific case we looked at is on the Central Coast. There the mobile units are capable of managing up to 8 beef animals per slaughter due to the limiting size of the refrigeration unit. The water tank has a 300 gallon capacity though generally less water is used each time when cleaning the unit. The water is collected through a drain and can be disposed of in a controlled manner. The wash water contains blood, dirt, water and food surface approved disinfectant and the operation generally occurs once or twice per year per site.

Based on these conditions, NRCS offers the following guidance:

1. Any specific requirements by the Regional Water Quality Control Board will be included in any plans prepared for clients using Mobile Slaughter Units
2. Wash water will not be allowed to run off the site and will be kept contained until proper disposal.
3. Wash water can be applied to land for disposal using the following recommendations:
  1. Apply at a rate that does not exceed the intake rate of the soil.
  2. Apply waste to land using a different location each time. Do not establish a single dumping site. Site should be flat enough to prevent wash water from running off the land.
  3. Do not apply to land with a shallow water table of less than five feet deep.
  4. Do not apply during rainfall or irrigation, if there is a chance the wash water will run off the site.
  5. Allowable a reasonable setback distance between the application point and any drainages or waterways to lessen the possibility of the wash water entering surface waters. Though a reasonable setback may vary from site to site, 100 feet is a good rule of thumb to use unless there are county setback requirements or other local regulations in place. A lesser distance might also be reasonable if filter strips or other conservation practices have been installed or the ground has an extremely flat slope.
  6. Wash water will contain minimal animal flesh or other animal material.

Currently, only 100 to 200 gallons of wash water needs to be disposed of each time once or twice per year. If the operation was performed much more frequently or more water was being used, creating a situation where more wash water needed to be dealt with, NRCS would need to reevaluate these recommendations and possibly offer further guidance.

Last updated on 1/2/2012

Ranch Facility Requirements

## Humane Harvest and Animal Receiving Procedure

### **A. General Information**

- a. Harvesting is done in the field using a Mobile Harvest Unit (MHU) that visits the member's farm at his or her request. Using this method to process the animals reduces the stresses associated with the transporting and holding in stockyards and processing in commercial slaughter houses. A USDA inspector travels to the unit and meets the butcher(s) at the ranch.

### **B. Handling of Livestock**

- a. Handling of livestock and presentation for Harvest will be done humanely.
- b. Compliance with the following categories will be met:
  - Adequate measures for inclement weather
  - Water and feed availability
  - Handling during ante-mortem inspection
  - Handling of suspect and disabled animals
  - Electric prod/alternative object use
  - Observations for slips and falls
  - Stunning effectiveness

### **C. Harvest Procedures**

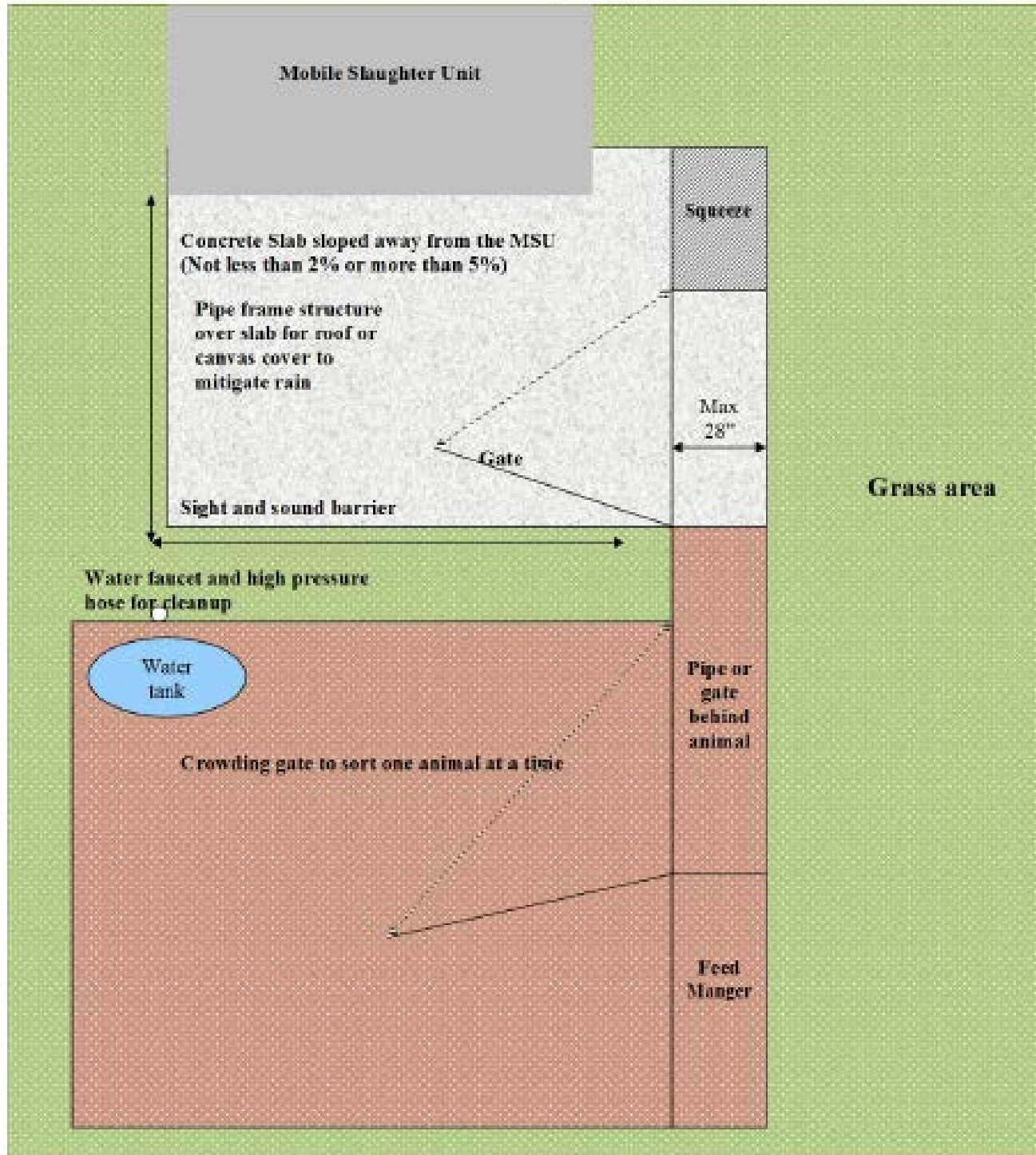
- a. Ranch owner will submit a completed harvest card to the inspector to identify what animals will be presented for ante mortem inspection.
- b. Inspector will look at animals at rest and then ask the ranch owner to slowly move the animals around the holding pen for viewing on each side.
- c. If animals are accepted for slaughter, ranch owner moves each animal, one at a time into the alley way and into the stun box.
- d. Animals will be humanly stunned with a captive bolt or mechanically shot. Animals will be properly contained so the Managing butcher can stun or shoot the animals humanly.
- e. After bleeding, carcass will hoisted into the MHU to be skinned, eviscerated and trimmed by the Managing butcher and/or designee until it meets criteria for zero tolerance for visible fecal, ingesta & milk contamination.
- f. Each carcass and all variety meat will be presented by the Managing butcher or designee for inspection.
- g. Carcasses and variety meats will be washed with potable water and then sprayed with a 2.5% acetic acid solution prior to transfer to cooler for chilling.
- h. Carcasses harvested with gunshot will have heads condemned.
- i. If buy dentition, cattle are 30 months or older, heads (skull, eyes, brain and trigeminal ganglia, small intestines and tonsils) are considered SRMs as is the vertebral column (spinal cord and dorsal root ganglia). All neck and tail portions containing spinal materials and all portions of the carcass attached to the dorsal root ganglia will be cut off the carcass and disposed of in a manner that ensures they will not enter the food chain.

- j. The carcass 30 months or older will be delivered to the Cut and Wrap Facility red tagged to identify them for special handling and an add on fee will be assessed for extra handling.
- k. If dentition shows a 30 month and older beef animal; sanitation will be performed before any other animals are processed. All tools and surfaces used in the removal of SRMs from the carcasses will be sanitized before being used for further processing can occur.

**D. Monitoring, Recording, Corrective Action and Verification**

- a. Monitoring of humane harvest will be performed by the Managing butcher or designee for each animal harvested and recorded on **log HHAR-2**.
- b. All records will be monitored and verified by the Managing butcher or designee at the end of each operating day.
- c. If necessary, Deficiency and Corrective Action will be recorded on **log HHAR -3** and corrective action will be taken. Managing butcher will verify actions have been taken in a timely manner.

## Central Coast Home Grown Meat Alliance Ranch Facility Diagram



**OPTION C w/wastewater pretreatment  
OPERATING/PRODUCTION ASSUMPTIONS-NOT INFLATION ADJUSTED**

8/2/2013

<b>Operating Assumptions (volume projections in Market Projections)</b>	
Target Plant Slaughter Capacity (weekly)	30
Weeks per Year of Operation	50
Total Target Annual Slaughter Capacity	1500

<b>Species #1</b>	<b>Cattle</b>	<b>Species #2</b>	<b>Hogs</b>
Percent of Annual Slaughter Capacity	64%	Percent of Annual Slaughter Capacity	17%
Annual Volume (no. of head)	960	Annual Volume (no. of head)	510
Hanging (hot carcass) Weight per Head	700	Hanging (hot carcass) Weight per Head	210
Base Slaughter Fee per Head	\$105.00	Base Slaughter Fee per Head	\$60.00
Boning/Cutting/Pkg. Charge per Pound	\$0.85	Boning/Cutting/Pkg. Charge per Pound	\$0.70
Pounds of Further Processed per Head	0	Pounds of Further Processed per Head	86
Further Processing Cost per Pound	\$0.00	Further Processing Cost per Pound	\$0.00
Total Revenue per Head	\$700.00	Total Revenue per Head	\$207.00
Packaging Materials per Head	\$25.00	Packaging Materials per Head	\$12.50
<b>Species #3</b>	<b>Lambs</b>	<b>Species #4</b>	<b>Bison</b>
Percent of Annual Slaughter Capacity	15%	Percent of Annual Slaughter Capacity	4%
Annual Volume (no. of head)	675	Annual Volume (no. of head)	60
Hanging (hot carcass) Weight per Head	50	Hanging (hot carcass) Weight per Head	800
Base Slaughter Fee per Head	\$35.00	Base Slaughter Fee per Head	\$100.00
Boning/Cutting/Pkg. Charge per Pound	\$0.95	Boning/Cutting/Pkg. Charge per Pound	\$0.95
Pounds of Further Processed per Head	0	Pounds of Further Processed per Head	0
Further Processing Cost per Pound	\$0.00	Further Processing Cost per Pound	\$0.00
Total Revenue per Head	\$82.50	Total Revenue per Head	\$860.00
Packaging Materials per Head	\$6.50	Packaging Materials per Head	\$30.00
<b>Other Sales/Revenue</b>		<b>Ret Sales</b>	
Annual Volume (lbs, head, other units)	0	Annual Volume (lbs, head, other units)	0
Revenue per Unit	\$0.00	Revenue per Unit	\$0.00
Year-to-Year Capacity Increase	0%	Year-to-Year Capacity Increase	0%
Cost of Goods Sold	\$0.00	Cost of Goods Sold	\$0.00

<b>General Operations Expenses</b>	year 1	year 2	year 3	year 4	year 5	year 6	year 7	year 8	year 9	year 10
	<b>\$/Month</b>									
Electricity/month	\$2,685	\$3,117	\$3,549	\$3,906	\$4,243	\$4,243	\$4,243	\$4,243	\$4,243	\$4,243
Rent/month	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1
Water/month	\$229	\$238	\$248	\$258	\$267	\$267	\$267	\$267	\$267	\$267
Sewer/month	\$377	\$441	\$506	\$603	\$700	\$700	\$700	\$700	\$700	\$700
Phone and Internet/month	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150
Inedible Expense (renderer pick-ups)	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600
Microbial Testing/month	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150
Solid Waste Management/month	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$67
Transportation - Fuel, repairs, tolls	\$1,322	\$1,322	\$1,982	\$1,982	\$1,982	\$1,982	\$1,982	\$1,982	\$1,982	\$1,982
<b>Total Monthly Operating Expenses</b>	<b>\$5,581</b>	<b>\$6,087</b>	<b>\$7,253</b>	<b>\$7,717</b>	<b>\$8,160</b>	<b>\$8,160</b>	<b>\$8,160</b>	<b>\$8,160</b>	<b>\$8,160</b>	<b>\$8,160</b>
<b>Utilization (% of capacity)</b>	30%	50%	70%	85%	100%	100%	100%	100%	100%	100%

<b>Tax Information</b>	<b>Rates</b>
Property Tax as % of Prop and Plant	1.13%
Income Tax Rate	NA

<b>Initial Cash Reserve</b>	
Amount	\$450,000
Short Term Interest Rate	5.00%

<b>Other</b>	
Selling Price Inflation Rate	1.00%
Expense Inflation Rate	1.00%
Maintenance as % of Plant & Equip	3.00%
Discount rate for NPV calculation	10.00%

**OPTION C**  
**MARKET PROJECTION-INFLATION ADJUSTED**

Skip to:  
[Operating/Production Assumptions](#)  
[Operations Summary \(Profit/Loss, Cash Flow\)](#)  
[Return on Investment](#) 7/9/2013

**Gross Sales Projection**

Capacity Utilization	30%	50%	70%	85%	100%	100%	100%	100%	100%	100%
	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>	<b>Year 8</b>	<b>Year 9</b>	<b>Year 10</b>
<b>Cattle</b>										
Total Volume	288	480	672	816	960	960	960	960	960	960
Revenue/Unit	\$700	\$707	\$714	\$721	\$728	\$736	\$743	\$750	\$758	\$766
Gross Sales	\$201,600	\$339,360	\$479,855	\$588,508	\$699,286	\$706,279	\$713,342	\$720,475	\$727,680	\$734,957
<b>Hogs</b>										
Total Volume	153	255	357	434	510	510	510	510	510	510
Revenue/Unit	\$207	\$209	\$211	\$213	\$215	\$218	\$220	\$222	\$224	\$226
Gross Sales	\$31,671	\$53,313	\$75,384	\$92,454	\$109,857	\$110,955	\$112,065	\$113,185	\$114,317	\$115,460
<b>Lambs</b>										
Total Volume	203	338	473	574	675	675	675	675	675	675
Revenue/Unit	\$83	\$83	\$84	\$85	\$86	\$87	\$88	\$88	\$89	\$90
Gross Sales	\$16,706	\$28,122	\$39,765	\$48,769	\$57,949	\$58,528	\$59,113	\$59,705	\$60,302	\$60,905
<b>Bison</b>										
Total Volume	18	30	42	51	60	60	60	60	60	60
Revenue/Unit	\$860	\$869	\$877	\$886	\$895	\$904	\$913	\$922	\$931	\$941
Gross Sales	\$15,480	\$26,058	\$36,846	\$45,189	\$53,695	\$54,232	\$54,774	\$55,322	\$55,875	\$56,434
<b>Total Volume</b>	662	1,103	1,544	1,874	2,205	2,205	2,205	2,205	2,205	2,205
<b>Revenue/Unit</b>										
<b>Gross Sales</b>										
<b>TOTAL GROSS SALES</b>	<b>\$265,457</b>	<b>\$446,853</b>	<b>\$631,850</b>	<b>\$774,919</b>	<b>\$920,786</b>	<b>\$929,994</b>	<b>\$939,294</b>	<b>\$948,687</b>	<b>\$958,174</b>	<b>\$967,756</b>

**Production Expense**

<b>Cattle</b>										
COGS/Unit	\$25.00	\$25.25	\$25.50	\$25.76	\$26.02	\$26.28	\$26.54	\$26.80	\$27.07	\$27.34
COGS	\$7,200.00	\$12,120.00	\$17,137.68	\$21,018.14	\$24,974.50	\$25,224.24	\$25,476.48	\$25,731.25	\$25,988.56	\$26,248.45
<b>Hogs</b>										
COGS/Unit	\$12.50	\$12.63	\$12.75	\$12.88	\$13.01	\$13.14	\$13.27	\$13.40	\$13.54	\$13.67
COGS	\$1,912.50	\$3,219.38	\$4,552.20	\$5,582.94	\$6,633.85	\$6,700.19	\$6,767.19	\$6,834.86	\$6,903.21	\$6,972.24
<b>Lambs</b>										
COGS/Unit	\$6.50	\$6.57	\$6.63	\$6.70	\$6.76	\$6.83	\$6.90	\$6.97	\$7.04	\$7.11
COGS	\$1,316.25	\$2,215.69	\$3,132.98	\$3,842.38	\$4,565.65	\$4,611.31	\$4,657.42	\$4,703.99	\$4,751.03	\$4,798.54
<b>Bison</b>										
COGS/Unit	\$30.00	\$30.30	\$30.60	\$30.91	\$31.22	\$31.53	\$31.85	\$32.16	\$32.49	\$32.81
COGS	\$540.00	\$909.00	\$1,285.33	\$1,576.36	\$1,873.09	\$1,891.82	\$1,910.74	\$1,929.84	\$1,949.14	\$1,968.63
<b>COGS/Unit</b>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>COGS</b>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>TOTAL COGS</b>	<b>\$10,969</b>	<b>\$18,464</b>	<b>\$26,108</b>	<b>\$32,020</b>	<b>\$38,047</b>	<b>\$38,428</b>	<b>\$38,812</b>	<b>\$39,200</b>	<b>\$39,592</b>	<b>\$39,988</b>



**OPTION C**  
**PERSONNEL EXPENSES-NOT INFLATION ADJUSTED**

8/4/2013

Go to other input areas:

[Operating/Production Assumptions](#)  
[Plant, Property, & Equipment \(PP&E\)](#)  
[Expense Projection](#)

Or skip to financial results:

[Operations Summary \(Profit/Loss, Cash Flow\)](#)  
[Return on Investment](#)

This sheet allows you to input salaries and overtime assumptions for various positions.  
 Benefit calculations are based on the percentage you entered on the "Input" sheet.

<b>Payroll Information</b>	
% of Payroll Tax to Salaries	8.00%
% of Retirement Tax to Salaries	6.00%
% of Employee INS Tax to Salaries	21.00%
Benefits as % of Salaries	35.00%
Wage Inflation	1.00%

<u>Occupation</u>	<u>Beg Salary</u>	<u>No. of Per:</u>	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>	<u>YEAR 6</u>	<u>YEAR 7</u>	<u>YEAR 8</u>	<u>YEAR 9</u>	<u>YEAR 10</u>
<b>Salary Cost</b>												
<b>Plant Manager/Butcher</b>	\$60,000	1	\$60,000	\$60,000	\$65,000	\$65,000	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000
<b>Butcher</b>	\$35,000	1	\$17,500	\$17,500	\$27,000	\$35,000	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000
<b>Packaging/Cutting</b>	\$24,960	1	\$24,960	\$24,960	\$26,000	\$26,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000
<b>Driver/Cleaner</b>	\$24,120	1	\$18,090	\$18,090	\$25,000	\$25,000	\$26,500	\$26,500	\$26,500	\$26,500	\$26,500	\$26,500
<b>Cleaner</b>	\$22,000	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Admin</b>	\$30,000	1	\$15,000	\$22,500	\$24,000	\$30,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000
<b>Total Salary Costs</b>	\$196,080		\$135,550	\$143,050	\$167,000	\$181,000	\$194,500	\$194,500	\$194,500	\$194,500	\$194,500	\$194,500

<b>Benefits Cost</b>												
<b>Plant Manager/Butcher benefits</b>		1	\$21,000	\$21,000	\$22,750	\$22,750	\$24,500	\$24,500	\$24,500	\$24,500	\$24,500	\$24,500
<b>Butcher benefits</b>		1	\$6,125	\$6,125	\$9,450	\$12,250	\$13,300	\$13,300	\$13,300	\$13,300	\$13,300	\$13,300
<b>Packaging/Cutting benefits</b>		1	\$8,736	\$8,736	\$9,100	\$9,100	\$9,800	\$9,800	\$9,800	\$9,800	\$9,800	\$9,800
<b>Driver benefits</b>		1	\$6,332	\$6,332	\$8,750	\$8,750	\$9,275	\$9,275	\$9,275	\$9,275	\$9,275	\$9,275
<b>Cleaner benefits</b>		1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Admin benefits</b>		1	\$5,250	\$7,875	\$8,400	\$10,500	\$11,200	\$11,200	\$11,200	\$11,200	\$11,200	\$11,200
<b>Total Benefit Costs</b>			\$47,443	\$50,068	\$58,450	\$63,350	\$68,075	\$68,075	\$68,075	\$68,075	\$68,075	\$68,075

**OPTION C**  
**UTILITIES-NOT INFLATION ADJUSTED**

8/2/2013

Capacity utilization	30%	50%	70%	85%	100%	100%	100%	100%	100%	100%
Year	1	2	3	4	5	6	7	8	9	10
Electricity Schedule #	E-7	E-7	E-7	E-7	E-7	E-7	E-7	E-7	E-7	E-7
kwh	207000	241500	276000	310500	345000	345000	345000	345000	345000	345000
summer	132250	154291	176333	177202	172500	172500	172500	172500	172500	172500
winter	74727	87182	99636	133298	172500	172500	172500	172500	172500	172500
annual charges	\$32,225	\$37,408	\$42,591	\$46,875	\$50,917	\$50,917	\$50,917	\$50,917	\$50,917	\$50,917
summer	\$22,606	\$26,258	\$29,909	\$30,053	\$29,274	\$29,274	\$29,274	\$29,274	\$29,274	\$29,274
winter	\$9,619	\$11,150	\$12,682	\$16,822	\$21,643	\$21,643	\$21,643	\$21,643	\$21,643	\$21,643
ave monthly	\$2,685	\$3,117	\$3,549	\$3,906	\$4,243	\$4,243	\$4,243	\$4,243	\$4,243	\$4,243
Total Annual elec \$	\$32,225	\$37,408	\$42,591	\$46,875	\$50,917	\$50,917	\$50,917	\$50,917	\$50,917	\$50,917
Sewer-monthly	377	441	506	603	700	700	700	700	700	700
Sewer-annual	4521	5297	6073	7237	8401	8401	8401	8401	8401	8401
Water Consumption 2 inch meter										
charges-Annual	2744	2860	2976	3091	3207	3207	3207	3207	3207	3207
summer	1372	1430	1488	1546	1603	1603	1603	1603	1603	1603
winter	1372	1430	1488	1546	1603	1603	1603	1603	1603	1603
ave monthly	229	238	248	258	267	267	267	267	267	267

**OPTION C  
PLANT, PROPERTY, & EQUIPMENT**

Special Purpose Buildings			Other Special Purpose Buildings (used)	
Description	Value	Salvage	Description	Value
40 X 60 metal building w/electrical building w/4 insulated doors, 6" roof & wall insulation--\$23,335	\$150,000	\$0	Freezer, Chill Cooler, Aging Cooler, 2 40' Reefers, Slaughter & Cutting area cooling system	\$115,000
interior improvements--\$126,665				
Holding pens (interior)	\$15,000			
<b>Total Buildings</b>	<b>\$165,000</b>	<b>\$0</b>	<b>Total Special Purpose Building</b>	<b>\$115,000</b>
Equipment and Heavy Rolling Stock			Light Trucks and Vehicles	
Description	Value		Description	Value
Rail system	\$31,000		F150 used	\$20,000
Refrigerated Box truck for deliveries	\$30,000		F150 used	\$10,000
1 forklift	\$10,000		#3	
Misc office furniture & equipment	\$3,000		#4	
Slaughter fixtures & equipment	\$30,000		#5	
Processing fixtures & equipment	\$50,000		<b>Total Light Trucks and Vehicles</b>	<b>\$30,000</b>
Wastewater pre-treatment equipment	\$122,000		Permits, hook-ups & roads	\$356,000
<b>Total Equip and Heavy Rolling Stock</b>	<b>\$276,000</b>			
<b>Total Plant, Equipment, permits and roads</b>	<b>\$942,000</b>			
<b>Land 3.7 acres</b>	<b>\$483,516</b>			
<b>Total Plant, Property, Equipment &amp; Improvements</b>	<b>\$1,425,516</b>			
<b>Plant equity &amp; Cash reserve</b>	<b>\$735,103</b>			

Debt Financing for Plant, Property, & Equipment	
Percent Financed	80.00%
Long Term Interest Rate	6.00%
Loan Term	10
<b>Loan Amount</b>	<b>\$1,140,413</b> <a href="#">Click to see Loan Amortization</a>

Depreciation	
<b>Buildings</b>	39 year Straight Line
<b>Special Purpose Buildings</b>	10 year Straight Line
<b>Equip. &amp; Heavy Rolling Stock</b>	7 Yr MACRS with half year convention
<b>Light Trucks and Vehicles</b>	5 Yr MACRS with half year convention

Annual Total Depreciation										
Year	1	2	3	4	5	6	7	8	9	10
Buildings	\$9,128	\$9,128	\$9,128	\$9,128	\$9,128	\$9,128	\$9,128	\$9,128	\$9,128	\$9,128
Special Purpose Buildings	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000
Equip. & Heavy Rolling Stock	\$39,440	\$67,592	\$48,272	\$34,472	\$24,647	\$24,619	\$24,647	\$12,310		
Light Truck and Vehicles	\$6,000	\$9,600	\$5,760	\$3,456	\$3,456	\$1,728				
<b>Total Depreciation</b>	<b>\$82,569</b>	<b>\$114,321</b>	<b>\$91,161</b>	<b>\$75,057</b>	<b>\$65,231</b>	<b>\$63,475</b>	<b>\$61,775</b>	<b>\$49,438</b>	<b>\$37,128</b>	<b>\$37,128</b>

<b>site improvements</b>			
Cost		\$356,000	
Life		0	
Salvage		\$0	
Period		39	
Depreciation per yr. for 39 yrs.		\$9,128	
<b>Special Purpose Buildings</b>			
Cost	\$	280,000	
Life		10	
<b>Year</b>	<b>Depreciation</b>	<b>Rate</b>	
1	\$ 28,000	10%	
2	\$ 28,000	10%	
3	\$ 28,000	10%	
4	\$ 28,000	10%	
5	\$ 28,000	10%	
6	\$ 28,000	10%	
7	\$ 28,000	10%	
8	\$ 28,000	10%	
9	\$ 28,000	10%	
10	\$ 28,000	10%	
<b>Equipment and Heavy Rolling Stock</b>			
<b>Year</b>	<b>Depreciation</b>	<b>Rate</b>	
1	39,440.40	14.29%	
2	67,592.40	24.49%	
3	48,272.40	17.49%	
4	34,472.40	12.49%	
5	24,646.80	8.93%	
6	24,619.20	8.92%	
7	24,646.80	8.93%	
8	12,309.60	4.46%	
<b>Light Trucks and Vehicles</b>			
<b>Year</b>	<b>Depreciation</b>	<b>Rate</b>	
1	6,000.00	20.00%	
2	9,600.00	32.00%	
3	5,760.00	19.20%	
4	3,456.00	11.52%	
5	3,456.00	11.52%	
6	1,728.00	5.76%	

## OPTION C EXPENSE PROJECTION--INFLATION ADJUSTED

Go to other input areas:

[Operating/Production Assumptions](#)[Personnel Expenses](#)[Plant, Property, & Equipment \(PP&E\)](#)

Or skip to financial results:

[Operations Summary \(Profit/Loss, Cash Flow\)](#)[Return on Investment](#)

This Sheet summaries expenses. The only input is for "supplies and miscellaneous" expenses.

	<u>Labor</u>	<u>Year 0</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
<b>Salaries</b>			\$135,550	\$144,481	\$170,357	\$186,484	\$202,397	\$204,421	\$206,466	\$208,530	\$210,616	\$212,722
<b>Benefits</b>			\$47,443	\$50,568	\$59,625	\$65,270	\$70,839	\$71,548	\$72,263	\$72,986	\$73,715	\$74,453
<b>Total Labor</b>		<b>\$0</b>	<b>\$182,993</b>	<b>\$195,049</b>	<b>\$229,982</b>	<b>\$251,754</b>	<b>\$273,237</b>	<b>\$275,969</b>	<b>\$278,729</b>	<b>\$281,516</b>	<b>\$284,331</b>	<b>\$287,174</b>
<b>Production Expenses</b>			\$10,969	\$18,464	\$26,108	\$32,020	\$38,047	\$38,428	\$38,812	\$39,200	\$39,592	\$39,988
<b>General Operations Expenses</b>			\$66,972	\$73,777	\$88,790	\$95,410	\$101,902	\$102,921	\$103,950	\$104,990	\$106,040	\$107,100
<b>Total Variable</b>		<b>\$0</b>	<b>\$260,933</b>	<b>\$287,289</b>	<b>\$344,880</b>	<b>\$379,184</b>	<b>\$413,186</b>	<b>\$417,317</b>	<b>\$421,491</b>	<b>\$425,706</b>	<b>\$429,963</b>	<b>\$434,262</b>
	<u>Fixed</u>											
<b>Maintenance</b>			\$4,500	\$4,545	\$4,590	\$4,636	\$4,683	\$4,730	\$4,777	\$4,825	\$4,873	\$4,922
<b>Insurance</b>			\$34,110	\$35,896	\$41,071	\$44,297	\$47,479	\$47,884	\$48,363	\$48,847	\$49,335	\$49,829
<b>Property Tax</b>			\$16,123	\$16,284	\$16,447	\$16,611	\$16,777	\$16,945	\$17,114	\$17,286	\$17,458	\$17,633
<b>Depreciation</b>			\$82,569	\$114,321	\$91,161	\$75,057	\$65,231	\$63,475	\$61,775	\$49,438	\$37,128	\$37,128
<b>Interest on Plant Loan &amp; Cash Reserv</b>			\$90,925	\$85,734	\$80,231	\$74,398	\$68,215	\$61,661	\$54,714	\$47,350	\$39,545	\$31,271
<b>Total Fixed</b>		<b>\$0</b>	<b>\$228,226</b>	<b>\$256,779</b>	<b>\$233,500</b>	<b>\$214,999</b>	<b>\$202,386</b>	<b>\$194,695</b>	<b>\$186,744</b>	<b>\$167,745</b>	<b>\$148,339</b>	<b>\$140,782</b>
	<u>Other</u>											
<b>Supplies</b>			\$6,600	\$6,666	\$6,733	\$6,800	\$6,868	\$6,937	\$7,006	\$7,076	\$7,147	\$7,218
<b>Miscellaneous</b>			\$10,560	\$10,666	\$10,772	\$10,880	\$10,989	\$11,099	\$11,210	\$11,322	\$11,435	\$11,549
<b>Total Other</b>			<b>\$17,160</b>	<b>\$17,332</b>	<b>\$17,505</b>	<b>\$17,680</b>	<b>\$17,857</b>	<b>\$18,035</b>	<b>\$18,216</b>	<b>\$18,398</b>	<b>\$18,582</b>	<b>\$18,768</b>
<b>Total Expenses</b>			<b>\$506,319</b>	<b>\$561,400</b>	<b>\$595,885</b>	<b>\$611,863</b>	<b>\$633,428</b>	<b>\$630,048</b>	<b>\$626,450</b>	<b>\$611,848</b>	<b>\$596,884</b>	<b>\$593,812</b>

**Option C**  
**OPERATIONS SUMMARY: PROFIT/LOSS & CASH FLOW PROJECTIONS**

Capacity Utilization	30%	50%	70%	85%	100%	100%	100%	100%	100%	100%	
<b>Gross Sales</b>											
	<b>Year 0</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>	<b>Year 8</b>	<b>Year 9</b>	<b>Year 10</b>
Cattle	\$0	\$201,600	\$339,360	\$479,855	\$588,508	\$699,286	\$706,279	\$713,342	\$720,475	\$727,680	\$734,957
Hogs	\$0	\$31,671	\$53,313	\$75,384	\$92,454	\$109,857	\$110,955	\$112,065	\$113,185	\$114,317	\$115,460
Lambs	\$0	\$16,706	\$28,122	\$39,765	\$48,769	\$57,949	\$58,528	\$59,113	\$59,705	\$60,302	\$60,905
Bison	\$0	\$15,480	\$26,058	\$36,846	\$45,189	\$53,695	\$54,232	\$54,774	\$55,322	\$55,875	\$56,434
Ret Sales	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total Revenue</b>	<b>\$0</b>	<b>\$265,457</b>	<b>\$446,853</b>	<b>\$631,850</b>	<b>\$774,919</b>	<b>\$920,786</b>	<b>\$929,994</b>	<b>\$939,294</b>	<b>\$948,687</b>	<b>\$958,174</b>	<b>\$967,756</b>
<b>Expenses</b>											
Variable	\$0	\$260,933	\$287,289	\$344,880	\$379,184	\$413,186	\$417,317	\$421,491	\$425,706	\$429,963	\$434,262
Fixed	\$0	\$228,226	\$256,779	\$233,500	\$214,999	\$202,386	\$194,695	\$186,744	\$167,745	\$148,339	\$140,782
Other	\$0	\$17,160	\$17,332	\$17,505	\$17,680	\$17,857	\$18,035	\$18,216	\$18,398	\$18,582	\$18,768
<b>Total Expenses</b>	<b>\$0</b>	<b>\$506,319</b>	<b>\$561,400</b>	<b>\$595,885</b>	<b>\$611,863</b>	<b>\$633,428</b>	<b>\$630,048</b>	<b>\$626,450</b>	<b>\$611,848</b>	<b>\$596,884</b>	<b>\$593,812</b>
<b>Before Tax Profit</b>	<b>\$0</b>	<b>-\$240,861</b>	<b>-\$114,547</b>	<b>\$35,966</b>	<b>\$163,056</b>	<b>\$287,358</b>	<b>\$299,946</b>	<b>\$312,844</b>	<b>\$336,839</b>	<b>\$361,290</b>	<b>\$373,944</b>
<b>No Income Tax</b>											
<b>After Tax Profit</b>	<b>\$0</b>	<b>-\$240,861</b>	<b>-\$114,547</b>	<b>\$35,966</b>	<b>\$163,056</b>	<b>\$287,358</b>	<b>\$299,946</b>	<b>\$312,844</b>	<b>\$336,839</b>	<b>\$361,290</b>	<b>\$373,944</b>
<b>Estimate of Cash Flows</b>											
	<b>Year 0</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>	<b>Year 8</b>	<b>Year 9</b>	<b>Year 10</b>
After Tax Profits	\$0	-\$240,861	-\$114,547	\$35,966	\$163,056	\$287,358	\$299,946	\$312,844	\$336,839	\$361,290	\$373,944
Depreciation	\$0	\$82,569	\$114,321	\$91,161	\$75,057	\$65,231	\$63,475	\$61,775	\$49,438	\$37,128	\$37,128
Principal	\$0	\$86,521	\$91,712	\$97,215	\$103,048	\$109,231	\$115,784	\$122,731	\$130,095	\$137,901	\$146,175
<b>Cash Flow</b>	<b>\$0</b>	<b>-\$244,814</b>	<b>-\$91,938</b>	<b>\$29,911</b>	<b>\$135,065</b>	<b>\$243,359</b>	<b>\$247,637</b>	<b>\$251,888</b>	<b>\$256,181</b>	<b>\$260,517</b>	<b>\$264,897</b>

**OPTION C  
RETURN ON INVESTMENT**

Discount Rate **10.00%**

Year	0	1	2	3	4	5	6	7	8	9	10
<b>Gross Margin</b>		\$265,457	\$446,853	\$631,850	\$774,919	\$920,786	\$929,994	\$939,294	\$948,687	\$958,174	\$967,756
<b>Discount Factor</b>	1	0.909090909	0.826446281	0.751314801	0.683013455	0.620921323	0.56447393	0.513158118	0.46650738	0.424097618	0.385543289
<b>PV of Income</b>	\$0	\$241,325	\$369,300	\$474,718	\$529,280	\$571,736	\$524,957	\$482,006	\$442,569	\$406,359	\$373,112
<b>Total Expense</b>	\$0	\$506,319	\$561,400	\$595,885	\$611,863	\$633,428	\$630,048	\$626,450	\$611,848	\$596,884	\$593,812
<b>Less Depreciation and Term Interest</b>		\$150,993	\$177,554	\$148,891	\$126,955	\$110,946	\$102,637	\$93,989	\$74,288	\$54,173	\$45,899
<b>Cash Expenses (w/Cash Reserve in Yr0)</b>	\$1,875,516	\$355,325	\$383,846	\$446,993	\$484,908	\$522,482	\$527,412	\$532,461	\$537,560	\$542,711	\$547,913
<b>Discount Factor</b>	1	0.909090909	0.826446281	0.751314801	0.683013455	0.620921323	0.56447393	0.513158118	0.46650738	0.424097618	0.385543289
<b>PV of Expenses</b>	\$1,875,516	\$323,023	\$317,228	\$335,833	\$331,199	\$324,420	\$297,710	\$273,237	\$250,776	\$230,162	\$211,244.22
<b>Benefits Less Costs</b>	(\$1,875,516)	(\$89,868)	\$63,007	\$184,857	\$290,011	\$398,304	\$402,582	\$406,833	\$411,127	\$415,463	\$419,843
<b>PV Benefits Less PV Costs</b>	(\$1,875,516)	(\$81,698)	\$52,072	\$138,886	\$198,081	\$247,316	\$227,247	\$208,770	\$191,794	\$176,197	\$161,867
<b>Total PV of Income</b>	\$4,415,363										
<b>Total PV of Expenses</b>	\$4,770,348										
<b>NPV 10% discount rate</b>	(\$354,984)										
<b>NPV 5% discount rate</b>	\$199,772										
<b>Internal Rate of Return</b>	6.59%										
<b>PV Benefit/PV Cost Ratio</b>	0.93										
<b>Return on Assets</b>	0.00%	-12.84%	-6.11%	1.92%	8.69%	15.32%	21.04%	21.95%	23.63%	25.34%	26.23%
<b>(Pre-tax income)/(total PPE investment + cash reserve--\$1,875,516)</b>											
<b>Average ROA</b>	11.38%										
<b>Return on (Beginning) Equity</b>	0.00%	-32.77%	-15.58%	4.89%	22.18%	39.09%	40.80%	42.56%	45.82%	49.15%	50.87%
<b>(Pre-tax income)/(non-borrowed PPE investment + cash reserve--\$735,103)</b>											
<b>Average ROE</b>	22.46%										
<b>Payback Period (years)</b>											
<b>(payback period only displayed if less than 10 years)</b>											

## OPTION C LOAN AMORTIZATION & TOTAL INTEREST PAYMENTS

Go back to input areas:

[Operating/Production Assumptions](#)[Personnel Expenses](#)[Plant, Property, & Equipment \(PP&E\)](#)[Expense Projection](#)

Or go back to P/L calculations:

[Operations Summary \(Profit/Loss, Cash Flow\)](#)[Return on Investment](#)

This sheet calculates loan amortization and interest. There are no inputs on this sheet.

<b>Total Investment</b>	\$1,425,516	Upfront capital	<b>\$735,103</b>
<b>Long Term Interest Rate</b>	6.00%	20% of plant	\$285,103
<b>Percent Financed</b>	80.00%	Cash reserve	\$450,000
<b>Loan Amount</b>	\$1,140,413		
<b>Loan Term</b>	10		

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>	<u>Year 7</u>	<u>Year 8</u>	<u>Year 9</u>	<u>Year 10</u>
<b>Beginning Balance</b>	\$1,140,413	\$1,053,892	\$962,180	\$864,965	\$761,918	\$652,687	\$536,903	\$414,171	\$284,076	\$146,175
<b>Interest Rate</b>	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
<b>Interest</b>	\$68,425	\$63,234	\$57,731	\$51,898	\$45,715	\$39,161	\$32,214	\$24,850	\$17,045	\$8,771
<b>Annual Payment</b>	\$154,946	\$154,946	\$154,946	\$154,946	\$154,946	\$154,946	\$154,946	\$154,946	\$154,946	\$154,946
<b>Principal</b>	\$86,521	\$91,712	\$97,215	\$103,048	\$109,231	\$115,784	\$122,731	\$130,095	\$137,901	\$146,175
<b>Ending Balance</b>	\$1,053,892	\$962,180	\$864,965	\$761,918	\$652,687	\$536,903	\$414,171	\$284,076	\$146,175	\$0
<b>Cash reserve</b>	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000					
<b>Short Term Interest Rate</b>	5.00%	5.00%	5.00%	5.00%	5.00%					
<b>Interest Amount</b>	\$22,500	\$22,500	\$22,500	\$22,500	\$22,500					
<b>Total Interest Expense</b>	\$90,925	\$85,734	\$80,231	\$74,398	\$68,215	\$61,661	\$54,714	\$47,350	\$39,545	\$31,271

**Option C**  
**Monthly Cash Flow - Year 1**

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
<b>Cash on Hand-beginning month</b>	\$450,000	\$423,993	\$390,917	\$357,842	\$331,835	\$311,549	\$298,332	\$285,115	\$271,897	\$258,680	\$245,463	\$233,595	
<b>Gross Revenue</b>	<b>\$14,748</b>	<b>\$7,374</b>	<b>\$7,374</b>	<b>\$14,748</b>	<b>\$22,121</b>	<b>\$29,495</b>	<b>\$29,495</b>	<b>\$29,495</b>	<b>\$29,495</b>	<b>\$29,495</b>	<b>\$29,495</b>	<b>\$22,121</b>	\$265,457
<b>Expenses: Variable</b>													
<b>Production Expenses (COGS)</b>	\$609	\$305	\$305	\$609	\$914	\$1,219	\$1,219	\$1,219	\$1,219	\$1,219	\$1,219	\$914	\$10,969
Salaries	\$11,296	\$11,296	\$11,296	\$11,296	\$11,296	\$11,296	\$11,296	\$11,296	\$11,296	\$11,296	\$11,296	\$11,296	\$135,550
Benefits	\$3,954	\$3,954	\$3,954	\$3,954	\$3,954	\$3,954	\$3,954	\$3,954	\$3,954	\$3,954	\$3,954	\$3,954	\$47,443
<b>Total Labor</b>	<b>\$15,249</b>	<b>\$15,249</b>	<b>\$15,249</b>	<b>\$15,249</b>	<b>\$15,249</b>	<b>\$15,249</b>	<b>\$15,249</b>	<b>\$15,249</b>	<b>\$15,249</b>	<b>\$15,249</b>	<b>\$15,249</b>	<b>\$15,249</b>	\$182,993
Electricity/month	\$1,223	\$1,223	\$1,223	\$1,223	\$2,572	\$2,572	\$2,572	\$2,572	\$2,572	\$2,572	\$2,572	\$1,223	\$22,766
Rent/month	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water/month	\$229	\$229	\$229	\$229	\$229	\$229	\$229	\$229	\$229	\$229	\$229	\$229	\$2,744
Sewer/month	\$377	\$377	\$377	\$377	\$377	\$377	\$377	\$377	\$377	\$377	\$377	\$377	\$4,521
Phone and Internet/month	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$1,800
Inedible Expense (renderer pick-up)	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$7,200
Microbial Testing/month	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$1,800
Solid Waste Management/month	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$805
Transportation - Fuel, repairs, tolls	\$1,322	\$1,322	\$1,322	\$1,322	\$1,322	\$1,322	\$1,322	\$1,322	\$1,322	\$1,322	\$1,322	\$1,322	\$15,864
Cash reserve interest	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$22,500
<b>Total Monthly Operating Expense</b>	<b>\$5,992</b>	<b>\$5,992</b>	<b>\$5,992</b>	<b>\$5,992</b>	<b>\$7,341</b>	<b>\$7,341</b>	<b>\$7,341</b>	<b>\$7,341</b>	<b>\$7,341</b>	<b>\$7,341</b>	<b>\$5,992</b>	<b>\$5,992</b>	\$80,001
<b>Total Variable</b>	<b>\$21,851</b>	<b>\$21,546</b>	<b>\$21,546</b>	<b>\$21,851</b>	<b>\$23,504</b>	<b>\$23,809</b>	<b>\$23,809</b>	<b>\$23,809</b>	<b>\$23,809</b>	<b>\$23,809</b>	<b>\$22,461</b>	<b>\$22,156</b>	\$273,962
<b>Fixed</b>													
Maintenance	\$375	\$375	\$375	\$375	\$375	\$375	\$375	\$375	\$375	\$375	\$375	\$375	\$4,500
Insurance	\$2,843	\$2,843	\$2,843	\$2,843	\$2,843	\$2,843	\$2,843	\$2,843	\$2,843	\$2,843	\$2,843	\$2,843	\$34,110
Property Tax	\$1,344	\$1,344	\$1,344	\$1,344	\$1,344	\$1,344	\$1,344	\$1,344	\$1,344	\$1,344	\$1,344	\$1,344	\$16,123
Loan Payment (interest & principal)	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$154,946
<b>Total Fixed</b>	<b>\$17,473</b>	<b>\$17,473</b>	<b>\$17,473</b>	<b>\$17,473</b>	<b>\$17,473</b>	<b>\$17,473</b>	<b>\$17,473</b>	<b>\$17,473</b>	<b>\$17,473</b>	<b>\$17,473</b>	<b>\$17,473</b>	<b>\$17,473</b>	\$209,678
<b>Other</b>													
Supplies	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$6,600
Miscellaneous*	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$10,560
<b>Total Other</b>	<b>\$1,430</b>	<b>\$1,430</b>	<b>\$1,430</b>	<b>\$1,430</b>	<b>\$1,430</b>	<b>\$1,430</b>	<b>\$1,430</b>	<b>\$1,430</b>	<b>\$1,430</b>	<b>\$1,430</b>	<b>\$1,430</b>	<b>\$1,430</b>	\$17,160
<b>Total Expenses</b>	<b>\$40,754</b>	<b>\$40,450</b>	<b>\$40,450</b>	<b>\$40,754</b>	<b>\$42,408</b>	<b>\$42,712</b>	<b>\$42,712</b>	<b>\$42,712</b>	<b>\$42,712</b>	<b>\$42,712</b>	<b>\$41,364</b>	<b>\$41,059</b>	\$500,800
<b>Cash Flow</b>	<b>-\$26,007</b>	<b>-\$33,076</b>	<b>-\$33,076</b>	<b>-\$26,007</b>	<b>-\$20,286</b>	<b>-\$13,217</b>	<b>-\$13,217</b>	<b>-\$13,217</b>	<b>-\$13,217</b>	<b>-\$13,217</b>	<b>-\$11,868</b>	<b>-\$18,938</b>	-\$235,343
<b>Cumulative Cash Flow</b>	<b>-\$26,007</b>	<b>-\$59,083</b>	<b>-\$92,158</b>	<b>-\$118,165</b>	<b>-\$138,451</b>	<b>-\$151,668</b>	<b>-\$164,885</b>	<b>-\$178,103</b>	<b>-\$191,320</b>	<b>-\$204,537</b>	<b>-\$216,405</b>	<b>-\$235,343</b>	



Option C  
Monthly Cash Flow - Year 2

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
Cash on Hand--beginning	\$214,657	\$196,159	\$165,760	\$135,362	\$116,864	\$108,681	\$112,398	\$116,115	\$119,832	\$123,549	\$127,266	\$132,567	
<b>Gross Revenue</b>	<b>\$24,825</b>	<b>\$12,413</b>	<b>\$12,413</b>	<b>\$24,825</b>	<b>\$37,238</b>	<b>\$49,650</b>	<b>\$49,650</b>	<b>\$49,650</b>	<b>\$49,650</b>	<b>\$49,650</b>	<b>\$49,650</b>	<b>\$37,238</b>	\$446,853
<b>Expenses: Variable</b>													
<b>Production Expenses (COGS)</b>	\$1,026	\$513	\$513	\$1,026	\$1,539	\$2,052	\$2,052	\$2,052	\$2,052	\$2,052	\$2,052	\$1,539	\$18,464
Salaries	\$12,040	\$12,040	\$12,040	\$12,040	\$12,040	\$12,040	\$12,040	\$12,040	\$12,040	\$12,040	\$12,040	\$12,040	\$144,481
Benefits	\$4,214	\$4,214	\$4,214	\$4,214	\$4,214	\$4,214	\$4,214	\$4,214	\$4,214	\$4,214	\$4,214	\$4,214	\$50,568
<b>Total Labor</b>	<b>\$16,254</b>	<b>\$16,254</b>	<b>\$16,254</b>	<b>\$16,254</b>	<b>\$16,254</b>	<b>\$16,254</b>	<b>\$16,254</b>	<b>\$16,254</b>	<b>\$16,254</b>	<b>\$16,254</b>	<b>\$16,254</b>	<b>\$16,254</b>	\$195,049
Electricity/month	\$1,420	\$1,420	\$1,420	\$1,420	\$3,004	\$3,004	\$3,004	\$3,004	\$3,004	\$3,004	\$1,420	\$1,420	\$26,546
Rent/month	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water/month	\$241	\$241	\$241	\$241	\$241	\$241	\$241	\$241	\$241	\$241	\$241	\$241	\$2,889
Sewer/month	\$446	\$446	\$446	\$446	\$446	\$446	\$446	\$446	\$446	\$446	\$446	\$446	\$5,350
Phone and Internet/month	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$1,818
Inedible Expense (renderer pick-ups)	\$606	\$606	\$606	\$606	\$606	\$606	\$606	\$606	\$606	\$606	\$606	\$606	\$7,272
Microbial Testing/month	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$152	\$1,818
Solid Waste Management/month	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$813
Transportation - Fuel, repairs, tolls	\$2,002	\$2,002	\$2,002	\$2,002	\$2,002	\$2,002	\$2,002	\$2,002	\$2,002	\$2,002	\$2,002	\$2,002	\$24,022
Cash reserve interest	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$22,500
<b>Total Monthly Operating Expenses</b>	<b>\$6,960</b>	<b>\$6,960</b>	<b>\$6,960</b>	<b>\$6,960</b>	<b>\$8,544</b>	<b>\$8,544</b>	<b>\$8,544</b>	<b>\$8,544</b>	<b>\$8,544</b>	<b>\$8,544</b>	<b>\$6,960</b>	<b>\$6,960</b>	\$93,027
<b>Total Variable</b>	<b>\$24,240</b>	<b>\$23,727</b>	<b>\$23,727</b>	<b>\$24,240</b>	<b>\$26,337</b>	<b>\$26,850</b>	<b>\$26,850</b>	<b>\$26,850</b>	<b>\$26,850</b>	<b>\$26,850</b>	<b>\$25,266</b>	<b>\$24,753</b>	\$306,540
<b>Fixed</b>													
Maintenance	\$379	\$379	\$379	\$379	\$379	\$379	\$379	\$379	\$379	\$379	\$379	\$379	\$4,545
Insurance	\$2,991	\$2,991	\$2,991	\$2,991	\$2,991	\$2,991	\$2,991	\$2,991	\$2,991	\$2,991	\$2,991	\$2,991	\$35,896
Property Tax	\$1,357	\$1,357	\$1,357	\$1,357	\$1,357	\$1,357	\$1,357	\$1,357	\$1,357	\$1,357	\$1,357	\$1,357	\$16,284
Loan Payment (interest & principal)	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$154,946
<b>Total Fixed</b>	<b>\$17,639</b>	<b>\$17,639</b>	<b>\$17,639</b>	<b>\$17,639</b>	<b>\$17,639</b>	<b>\$17,639</b>	<b>\$17,639</b>	<b>\$17,639</b>	<b>\$17,639</b>	<b>\$17,639</b>	<b>\$17,639</b>	<b>\$17,639</b>	\$211,670
<b>Other</b>													
Supplies	\$556	\$556	\$556	\$556	\$556	\$556	\$556	\$556	\$556	\$556	\$556	\$556	\$6,666
Miscellaneous*	\$889	\$889	\$889	\$889	\$889	\$889	\$889	\$889	\$889	\$889	\$889	\$889	\$10,666
<b>Total Other</b>	<b>\$1,444</b>	<b>\$1,444</b>	<b>\$1,444</b>	<b>\$1,444</b>	<b>\$1,444</b>	<b>\$1,444</b>	<b>\$1,444</b>	<b>\$1,444</b>	<b>\$1,444</b>	<b>\$1,444</b>	<b>\$1,444</b>	<b>\$1,444</b>	\$17,332
<b>Total Expenses</b>	<b>\$43,324</b>	<b>\$42,811</b>	<b>\$42,811</b>	<b>\$43,324</b>	<b>\$45,420</b>	<b>\$45,933</b>	<b>\$45,933</b>	<b>\$45,933</b>	<b>\$45,933</b>	<b>\$45,933</b>	<b>\$44,349</b>	<b>\$43,837</b>	\$535,542
<b>Cash Flow</b>	<b>-\$18,499</b>	<b>-\$30,398</b>	<b>-\$30,398</b>	<b>-\$18,499</b>	<b>-\$8,183</b>	<b>\$3,717</b>	<b>\$3,717</b>	<b>\$3,717</b>	<b>\$3,717</b>	<b>\$3,717</b>	<b>\$5,301</b>	<b>-\$6,599</b>	<b>-\$88,689</b>
<b>Cumulative Cash Flow</b>	<b>-\$253,841</b>	<b>-\$284,240</b>	<b>-\$314,638</b>	<b>-\$333,136</b>	<b>-\$341,319</b>	<b>-\$337,602</b>	<b>-\$333,885</b>	<b>-\$330,168</b>	<b>-\$326,451</b>	<b>-\$322,734</b>	<b>-\$317,433</b>	<b>-\$324,032</b>	

Option C  
Monthly Cash Flow - Year 3

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
Cash on Hand	\$125,968	\$113,635	\$84,487	\$55,340	\$43,019	\$45,700	\$65,208	\$84,715	\$104,222	\$123,730	\$143,237	\$164,568	
Gross Revenue	\$35,103	\$17,551	\$17,551	\$35,103	\$52,654	\$70,206	\$70,206	\$70,206	\$70,206	\$70,206	\$70,206	\$52,654	\$631,850
<b>Expenses: Variable</b>													
Production Expenses (COGS)	\$1,450	\$725	\$725	\$1,450	\$2,176	\$2,901	\$2,901	\$2,901	\$2,901	\$2,901	\$2,901	\$2,176	\$26,108
Salaries	\$14,196	\$14,196	\$14,196	\$14,196	\$14,196	\$14,196	\$14,196	\$14,196	\$14,196	\$14,196	\$14,196	\$14,196	\$170,357
Benefits	\$4,969	\$4,969	\$4,969	\$4,969	\$4,969	\$4,969	\$4,969	\$4,969	\$4,969	\$4,969	\$4,969	\$4,969	\$59,625
Total Labor	\$19,165	\$19,165	\$19,165	\$19,165	\$19,165	\$19,165	\$19,165	\$19,165	\$19,165	\$19,165	\$19,165	\$19,165	\$229,982
Electricity/month	\$1,621	\$1,621	\$1,621	\$1,621	\$3,445	\$3,445	\$3,445	\$3,445	\$3,445	\$3,445	\$1,621	\$1,621	\$30,398
Rent/month	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water/month	\$253	\$253	\$253	\$253	\$253	\$253	\$253	\$253	\$253	\$253	\$253	\$253	\$3,035
Sewer/month	\$516	\$516	\$516	\$516	\$516	\$516	\$516	\$516	\$516	\$516	\$516	\$516	\$6,195
Phone and Internet/month	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$1,836
Inedible Expense (renderer pick-ups)	\$612	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$7,212
Microbial Testing/month	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$153	\$1,836
Solid Waste Management/month	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$821
Transportation - Fuel, repairs, tolls	\$2,022	\$2,022	\$2,022	\$2,022	\$2,022	\$2,022	\$2,022	\$2,022	\$2,022	\$2,022	\$2,022	\$2,022	\$24,262
Cash reserve interest	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$22,500
Total Monthly Operating Expenses	\$7,274	\$7,262	\$7,262	\$7,262	\$9,086	\$9,086	\$9,086	\$9,086	\$9,086	\$9,086	\$7,262	\$7,262	\$98,096
Total Variable	\$27,889	\$27,152	\$27,152	\$27,877	\$30,426	\$31,152	\$31,152	\$31,152	\$31,152	\$31,152	\$29,328	\$28,603	\$354,186
<b>Fixed</b>													
Maintenance	\$383	\$383	\$383	\$383	\$383	\$383	\$383	\$383	\$383	\$383	\$383	\$383	\$4,590
Insurance	\$3,423	\$3,423	\$3,423	\$3,423	\$3,423	\$3,423	\$3,423	\$3,423	\$3,423	\$3,423	\$3,423	\$3,423	\$41,071
Property Tax	\$1,371	\$1,371	\$1,371	\$1,371	\$1,371	\$1,371	\$1,371	\$1,371	\$1,371	\$1,371	\$1,371	\$1,371	\$16,447
Loan Payment (interest & principal)	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$154,946
Total Fixed	\$18,088	\$18,088	\$18,088	\$18,088	\$18,088	\$18,088	\$18,088	\$18,088	\$18,088	\$18,088	\$18,088	\$18,088	
<b>Other</b>													
Supplies	\$561	\$561	\$561	\$561	\$561	\$561	\$561	\$561	\$561	\$561	\$561	\$561	\$6,733
Miscellaneous*	\$898	\$898	\$898	\$898	\$898	\$898	\$898	\$898	\$898	\$898	\$898	\$898	\$10,772
Total Other	\$1,459	\$1,459	\$1,459	\$1,459	\$1,459	\$1,459	\$1,459	\$1,459	\$1,459	\$1,459	\$1,459	\$1,459	
Total Expenses	\$47,436	\$46,699	\$46,699	\$47,424	\$49,973	\$50,698	\$50,698	\$50,698	\$50,698	\$50,698	\$48,874	\$48,149	\$588,745
Cash Flow	-\$12,333	-\$29,147	-\$29,147	-\$12,321	\$2,681	\$19,507	\$19,507	\$19,507	\$19,507	\$19,507	\$21,331	\$4,505	\$43,105
Cumulative Cash Flow	-\$336,365	-\$365,513	-\$394,660	-\$406,981	-\$404,300	-\$384,792	-\$365,285	-\$345,778	-\$326,270	-\$306,763	-\$285,432	-\$280,927	

Option C  
Monthly Cash Flow - Year 4

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
Cash on Hand	\$169,073	\$174,657	\$162,121	\$149,585	\$155,168	\$166,651	\$189,006	\$211,361	\$233,716	\$256,071	\$278,425	\$302,128	
<b>Gross Revenue</b>	<b>\$56,701</b>	<b>\$37,801</b>	<b>\$37,801</b>	<b>\$56,701</b>	<b>\$64,262</b>	<b>\$75,602</b>	<b>\$75,602</b>	<b>\$75,602</b>	<b>\$75,602</b>	<b>\$75,602</b>	<b>\$75,602</b>	<b>\$68,042</b>	\$774,919
<b>Expenses: Variable</b>													
<b>Production Expenses (COGS)</b>	\$2,343	\$1,562	\$1,562	\$2,343	\$2,655	\$3,124	\$3,124	\$3,124	\$3,124	\$3,124	\$3,124	\$2,811	\$32,020
Salaries	\$15,540	\$15,540	\$15,540	\$15,540	\$15,540	\$15,540	\$15,540	\$15,540	\$15,540	\$15,540	\$15,540	\$15,540	\$186,484
Benefits	\$5,439	\$5,439	\$5,439	\$5,439	\$5,439	\$5,439	\$5,439	\$5,439	\$5,439	\$5,439	\$5,439	\$5,439	\$65,270
<b>Total Labor</b>	<b>\$20,980</b>	<b>\$20,980</b>	<b>\$20,980</b>	<b>\$20,980</b>	<b>\$20,980</b>	<b>\$20,980</b>	<b>\$20,980</b>	<b>\$20,980</b>	<b>\$20,980</b>	<b>\$20,980</b>	<b>\$20,980</b>	<b>\$20,980</b>	\$251,754
Electricity/month	\$2,148	\$2,148	\$2,148	\$2,148	\$3,496	\$3,496	\$3,496	\$3,496	\$3,496	\$3,496	\$2,148	\$2,148	\$33,863
Rent/month	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water/month	\$265	\$265	\$265	\$265	\$265	\$265	\$265	\$265	\$265	\$265	\$265	\$265	\$3,185
Sewer/month	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$7,456
Phone and Internet/month	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$1,855
Inedible Expense (renderer pick-ups)	\$618	\$618	\$618	\$618	\$618	\$618	\$618	\$618	\$618	\$618	\$618	\$618	\$7,418
Microbial Testing/month	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$155	\$1,855
Solid Waste Management/month	\$69	\$69	\$69	\$69	\$69	\$69	\$69	\$69	\$69	\$69	\$69	\$69	\$829
Transportation - Fuel, repairs, tolls	\$2,042	\$2,042	\$2,042	\$2,042	\$2,042	\$2,042	\$2,042	\$2,042	\$2,042	\$2,042	\$2,042	\$2,042	
Cash reserve interest	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$22,500
<b>Total Monthly Operating Expenses</b>	<b>\$7,948</b>	<b>\$7,948</b>	<b>\$7,948</b>	<b>\$7,948</b>	<b>\$9,296</b>	<b>\$9,296</b>	<b>\$9,296</b>	<b>\$9,296</b>	<b>\$9,296</b>	<b>\$9,296</b>	<b>\$7,948</b>	<b>\$7,948</b>	\$103,465
<b>Total Variable</b>	<b>\$31,270</b>	<b>\$30,489</b>	<b>\$30,489</b>	<b>\$31,270</b>	<b>\$32,931</b>	<b>\$33,400</b>	<b>\$33,400</b>	<b>\$33,400</b>	<b>\$33,400</b>	<b>\$33,400</b>	<b>\$32,051</b>	<b>\$31,739</b>	\$387,239
<b>Fixed</b>													
Maintenance	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$4,636
Insurance	\$3,691	\$3,691	\$3,691	\$3,691	\$3,691	\$3,691	\$3,691	\$3,691	\$3,691	\$3,691	\$3,691	\$3,691	\$44,297
Property Tax	\$1,384	\$1,384	\$1,384	\$1,384	\$1,384	\$1,384	\$1,384	\$1,384	\$1,384	\$1,384	\$1,384	\$1,384	\$16,611
Loan Payment (interest & principal)	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$154,946
<b>Total Fixed</b>	<b>\$18,374</b>	<b>\$18,374</b>	<b>\$18,374</b>	<b>\$18,374</b>	<b>\$18,374</b>	<b>\$18,374</b>	<b>\$18,374</b>	<b>\$18,374</b>	<b>\$18,374</b>	<b>\$18,374</b>	<b>\$18,374</b>	<b>\$18,374</b>	\$220,490
<b>Other</b>													
Supplies	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$6,800
Miscellaneous*	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$10,880
<b>Total Other</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	\$17,680
													\$0
<b>Total Expenses</b>	<b>\$51,118</b>	<b>\$50,337</b>	<b>\$50,337</b>	<b>\$51,118</b>	<b>\$52,778</b>	<b>\$53,247</b>	<b>\$53,247</b>	<b>\$53,247</b>	<b>\$53,247</b>	<b>\$53,247</b>	<b>\$51,899</b>	<b>\$51,587</b>	\$625,409
<b>Cash Flow</b>	<b>\$5,583</b>	<b>-\$12,536</b>	<b>-\$12,536</b>	<b>\$5,583</b>	<b>\$11,483</b>	<b>\$22,355</b>	<b>\$22,355</b>	<b>\$22,355</b>	<b>\$22,355</b>	<b>\$22,355</b>	<b>\$23,703</b>	<b>\$16,455</b>	\$149,510
<b>Cumulative Cash Flow</b>	<b>-\$275,343</b>	<b>-\$287,879</b>	<b>-\$300,415</b>	<b>-\$294,832</b>	<b>-\$283,349</b>	<b>-\$260,994</b>	<b>-\$238,639</b>	<b>-\$216,284</b>	<b>-\$193,929</b>	<b>-\$171,575</b>	<b>-\$147,872</b>	<b>-\$131,416</b>	

**Option C**  
**Monthly Cash Flow - Year 5**

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
<b>Cash on Hand</b>	\$318,584	\$331,558	\$323,002	\$314,446	\$327,420	\$348,335	\$382,168	\$416,000	\$449,833	\$483,666	\$517,499	\$552,003	
<b>Gross Revenue</b>	<b>\$67,375</b>	<b>\$44,916</b>	<b>\$44,916</b>	<b>\$67,375</b>	<b>\$76,358</b>	<b>\$89,833</b>	<b>\$89,833</b>	<b>\$89,833</b>	<b>\$89,833</b>	<b>\$89,833</b>	<b>\$89,833</b>	<b>\$80,850</b>	\$920,786
<b>Expenses: Variable</b>													
<b>Production Expenses (COGS)</b>	\$2,784	\$1,856	\$1,856	\$2,784	\$3,155	\$3,712	\$3,712	\$3,712	\$3,712	\$3,712	\$3,712	\$3,341	\$38,047
Salaries	\$16,866	\$16,866	\$16,866	\$16,866	\$16,866	\$16,866	\$16,866	\$16,866	\$16,866	\$16,866	\$16,866	\$16,866	\$202,397
Benefits	\$5,903	\$5,903	\$5,903	\$5,903	\$5,903	\$5,903	\$5,903	\$5,903	\$5,903	\$5,903	\$5,903	\$5,903	\$70,839
<b>Total Labor</b>	<b>\$22,770</b>	<b>\$22,770</b>	<b>\$22,770</b>	<b>\$22,770</b>	<b>\$22,770</b>	<b>\$22,770</b>	<b>\$22,770</b>	<b>\$22,770</b>	<b>\$22,770</b>	<b>\$22,770</b>	<b>\$22,770</b>	<b>\$22,770</b>	\$273,237
Electricity/month	\$2,770	\$2,770	\$2,770	\$2,770	\$3,441	\$3,441	\$3,441	\$3,441	\$3,441	\$3,441	\$2,770	\$2,770	\$37,267
Rent/month	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water/month	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$278	\$3,337
Sewer/month	\$728	\$728	\$728	\$728	\$728	\$728	\$728	\$728	\$728	\$728	\$728	\$728	\$8,742
Phone and Internet/month	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$1,873
Inedible Expense (renderer pick-ups)	\$624	\$624	\$624	\$624	\$624	\$624	\$624	\$624	\$624	\$624	\$624	\$624	\$7,492
Microbial Testing/month	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$156	\$1,873
Solid Waste Management/month	\$70	\$70	\$70	\$70	\$70	\$70	\$70	\$70	\$70	\$70	\$70	\$70	\$838
Transportation - Fuel, repairs, tolls	\$2,062	\$2,062	\$2,062	\$2,062	\$2,062	\$2,062	\$2,062	\$2,062	\$2,062	\$2,062	\$2,062	\$2,062	
Cash reserve interest	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$1,875	\$22,500
<b>Total Monthly Operating Expenses</b>	<b>\$8,720</b>	<b>\$8,720</b>	<b>\$8,720</b>	<b>\$8,720</b>	<b>\$9,392</b>	<b>\$9,392</b>	<b>\$9,392</b>	<b>\$9,392</b>	<b>\$9,392</b>	<b>\$9,392</b>	<b>\$8,720</b>	<b>\$8,720</b>	\$108,672
<b>Total Variable</b>	<b>\$34,274</b>	<b>\$33,346</b>	<b>\$33,346</b>	<b>\$34,274</b>	<b>\$35,317</b>	<b>\$35,873</b>	<b>\$35,873</b>	<b>\$35,873</b>	<b>\$35,873</b>	<b>\$35,873</b>	<b>\$35,202</b>	<b>\$34,831</b>	\$419,956
<b>Fixed</b>													
Maintenance	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$386	\$4,636
Insurance	\$3,957	\$3,957	\$3,957	\$3,957	\$3,957	\$3,957	\$3,957	\$3,957	\$3,957	\$3,957	\$3,957	\$3,957	\$47,479
Property Tax	\$1,398	\$1,398	\$1,398	\$1,398	\$1,398	\$1,398	\$1,398	\$1,398	\$1,398	\$1,398	\$1,398	\$1,398	\$16,777
Loan Payment (interest & principal)	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$12,912	\$154,946
<b>Total Fixed</b>	<b>\$18,653</b>	<b>\$18,653</b>	<b>\$18,653</b>	<b>\$18,653</b>	<b>\$18,653</b>	<b>\$18,653</b>	<b>\$18,653</b>	<b>\$18,653</b>	<b>\$18,653</b>	<b>\$18,653</b>	<b>\$18,653</b>	<b>\$18,653</b>	\$223,839
<b>Other</b>													
Supplies	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$567	\$6,800
Miscellaneous*	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$907	\$10,880
<b>Total Other</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	<b>\$1,473</b>	\$17,680
<b>Total Expenses</b>	<b>\$54,400</b>	<b>\$53,472</b>	<b>\$53,472</b>	<b>\$54,400</b>	<b>\$55,443</b>	<b>\$56,000</b>	<b>\$56,000</b>	<b>\$56,000</b>	<b>\$56,000</b>	<b>\$56,000</b>	<b>\$55,328</b>	<b>\$54,957</b>	\$661,474
<b>Cash Flow</b>	\$12,974	-\$8,556	-\$8,556	\$12,974	\$20,915	\$33,833	\$33,833	\$33,833	\$33,833	\$33,833	\$34,504	\$25,892	\$259,312
<b>Cumulative Cash Flow</b>	-\$118,442	-\$126,998	-\$135,554	-\$122,580	-\$101,665	-\$67,832	-\$34,000	-\$167	\$33,666	\$67,499	\$102,003	\$127,896	