Options for Increased Processing Capacity in California's Central Coast Region

Niche Meat Processor Assistance Network
Central Coast Livestock Producers
The Ecological Farming Association
California Center for Cooperative Development

NICHE MEAT PROCESSOR ASSISTANCE NETWORK

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Introduction

The purpose of this report, prepared by the Niche Meat Processor Assistance Network (NMPAN) for livestock producers in the Central Coast region of California and the Ecological Farming Association, is to assess the potential viability of four options for expanding access to slaughter and processing capacity in their region. Producers in the region initiated the project with the goal of increased USDA-inspected processing capacity and wanted to evaluate the economic feasibility of building a new plant. The information presented in this report is designed to help producers answer the following questions:

1. Is there enough steady demand for processing services to justify a new plant?
2. If yes, what type of plant? Mobile or fixed, red meat and/or poultry, and what services?
3. Based on those answers, what are the next steps?

This report contains an analysis of three different options, which were chosen as follows:

At the Central Coast Livestock Producers Summit in January 2015, producers identified three specific processing options they wanted NMPAN to examine:

1. Two new mobile slaughter units (one red meat, one poultry) plus new cut-wrap facility (red meat + poultry)
2. New cut and wrap only (red meat + poultry), with value-added capabilities
3. New brick and mortar facility for both slaughter and cut and wrap (red meat + poultry)

All three options were to be USDA-inspected facilities. After initial analysis of the second option, NMPAN and producers agreed it was unworkable and decided to replace it with:

- Slaughter and processing for poultry only, also USDA inspected

NMPAN then analyzed these three options, incorporating input from a panel of experienced processors who operate at a similar size and scope. In June 2015, we delivered our results to the producers as a written report and webinar presentation, covering the following information for each option:

- Description
- Real-world examples and lessons learned
- Sample plant construction costs (assuming shovel-ready site)
- Sample operating costs
- Sample slaughter, processing and value-added processing charges

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- Sample break-even volumes based on estimated costs/revenue
- Initial analysis of economic viability

Following the June presentation of initial results, a subset of the producer group took two additional steps: first, they requested additional information from the consulting processors on specific options (see each option for details).

Second, they decided to explore a fourth option: a producer-owned, USDA-inspected slaughter and processing facility that would handle owners' livestock only and operate on a part-time basis. NMPAN provided tools and guidance to producers to do their own analysis, which the producers then asked an experienced processor to review. At the end of the project, producers were still gathering data for this option. Information available as of September 2015 is included in Appendix A.

The rest of this report addresses these four options, providing the information listed above along with additional insights from reviews by the team of experienced processors. We also include, where possible, the current thinking by the Central Coast producer group about each specific option.

The report ends with our conclusion that some important issues (e.g., market development) still need to be addressed before any of these options is ready for a green light. To that end, we suggest some next steps.

Please note that throughout this document, beef equivalents are used for red meat. A beef equivalent is one beef is equal to two hogs, or three lamb or goats.

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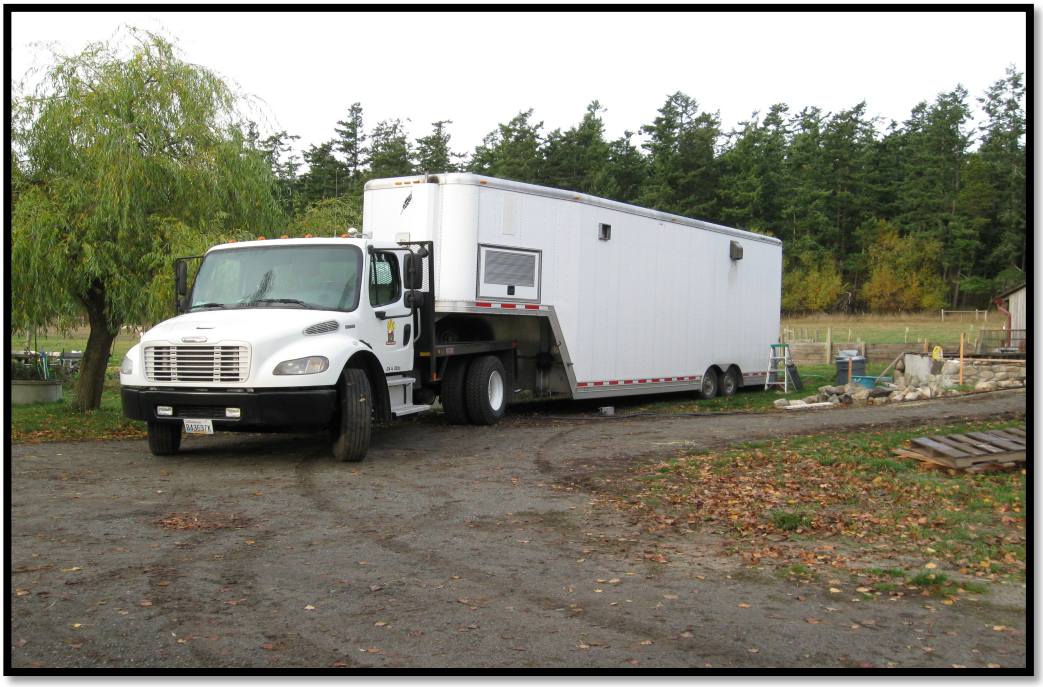
Option #1: Two new mobile slaughter units (one red meat, one poultry) plus a new cut-wrap facility (red meat + poultry)



The Island Grown Farmers Co-op MSU

Description

Option #1 would consist of two mobile slaughter units (one for red meat, one for poultry), each based at a farm or ranch site, or at the cut and wrap facility. This option also requires a "brick and mortar" cut and wrap facility, primarily for the red meat carcasses though potentially for poultry processing beyond whole birds. The cut and wrap would be located in a town setting in order to have access to municipal services (wastewater treatment being the most important). The MSUs would need to be able to discharge wastewater into a municipal sewer line at the cut and wrap site.

The two units would travel to different farms and ranches for slaughter and deliver carcasses back to the cut and wrap facility. All farm and ranch sites that host the red meat MSU would need appropriate 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.[1] On-farm infrastructure development costs are estimated at about $5,000 per site. On-farm infrastructure costs are likely to be lower for the poultry MSU, but each farm site will still need to provide power and water.

[1] Central Coast MSU case study, available here: http://www.extension.org/pages/22054/central-coast-ca-

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USDA inspectors would need to be present at slaughter sites during operations and have access to the cut and wrap facility during posted work hours.

Table 1: Sample Financial Estimates: MSUs + Cut and Wrap[2]

Approximate plant construction costs: ~ $1.1 mil. ($250k[3] per MSU x 2) + ($600k[4] for c&w)
Approximate operating costs: ~ $500,000[5] (for red meat MSU + cut & wrap), plus poultry MSU operating costs[6]
Approximate fees for services:
Beef slaughter: $105/head
Hogs: $55/hd.
Lambs/goats: $40/hd.
Cut & wrap: $1.00 - $1.25/lb.
Value-added processing: $2.50/lb. and up
Chickens: $5/bird
Break-even volumes: at least 8-10 beef equivalent/day[7], plus >20,000 birds/yr.[8]
Water use: plan on about 250 gal./beef[9] equivalent and 3-8 gal./bird[10]

Real World Examples/Lessons Learned

There are no USDA-inspected MSUs for poultry currently in operation in the United States. Reasons for this include the high costs of operating under inspection vis-à-vis the low volume capacity of a MSU, limited and inconsistent demand for fee-for-service USDA-inspected poultry processing, biosecurity risks,[11] limited wastewater treatment options,

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[2] Sample financial estimates are based on data from existing plants in various locations in the U.S. *Actual* costs for a Central Coast facility will vary.

[3] Email correspondence with Bruce Dunlop, Island Grown Farmers Co-Op. April 2014.

[4] Hardesty, S. and Harper, J. *Mendocino County Meat Plant Study*. August, 2013. Phone conversation with Amanda Carter, Foothills Pilot Plant Manager, April 2015.

[5] Island Grown Farmers Co-op Case Study.

[6] Unknown. There are no USDA inspected mobile poultry processing units in operation in the country.

[7] Island Grown Farmers Co-op Case Study: www.extension.org/sites/default/files/IGFC Case Study.pdf

[8] There are no USDA inspected mobile poultry processing units in operation in the country. For fewer than 20,000 birds per year, a unit should operate under one of the federal poultry processing exemptions. For more information on the use of the federal poultry processing exemptions in California, read this document: http://ucanr.org/sites/Grown_in_Marin/files/83622.pdf

[9] Mendocino County Meat Plant Study, 2013.

[10] Email correspondence with Maple Wind Farm, June 2015. Smithson Mills, Inc. April 2012.

[11] "In order to limit the vectors of possible disease or contaminant transmission between processing locations, stringent sanitation procedures will need to be developed and adhered to. The unit's interior processing areas will need to be completely sanitized between uses to ensure that the unit itself is not responsible for cross-contaminating final products. This includes the floors, walls, processing equipment, and the workers involved in processing. Not only can contaminants be spread through processing of birds, but also via the movement of the unit from one processing location to the next. Therefore, the exterior of the unit, especially the wheels, will have to undergo stringent sanitation as well. Failure to properly sanitize the unit's interior and exterior can have disastrous consequences for the MPU as well as impacted farming operations. Spread of disease from one farm operation to another can decimate flocks, damage farmers' reputations and

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and the overall economic inefficiencies of processing poultry at a small-scale (see *The Challenges of Inspected, Fee-For-Service Poultry Processing* below).

For red meat, however, the Island Grown Farmers Co-op (IGFC) is one of the more successful USDA-inspected MSUs in operation today. IGFC was the first USDA-inspected MSU in operation in the U.S. (they started in 2002), and the co-op currently has about 65 members.

IGFC runs their MSU and cut and wrap facility as a break-even business. Over the years, they have developed a couple of unique approaches to ensure steady throughput for the facility.

The first is that the co-op structure of IGFC assures that members have a strong incentive to work together to keep it busy enough to break even. IGFC is a semi-vertically integrated business: the plant is owned by the cooperative and only serves co-op members. Products are marketed, however, under individual farm and ranch brands with producers maintaining ownership of the meat throughout the process (this is important for cash flow: the co-op does not have to buy the live animals from members).

Because the unit only serves IGFC members, the customer-base is easier to communicate with and organize. At the beginning of each year, IGFC members get together and select their slaughter dates for the entire year. Members do this even though it necessarily requires guesswork on their part. "Sometimes, particularly with hogs," IGFC founding member Bruce Dunlop explains, "you're scheduling slaughter dates for animals that have not yet been born."[12] If members need to move or change dates, it is up to them to arrange that individually by swapping slaughter dates with each other: a steady, reliable stream of live animals to the plant is of the utmost importance.

The second key approach is IGFC's system of financial incentives: they offer a ten percent discount for any slaughter in the slow period, February through April, and a flat rate discount to process animals that will be ground, typically culls, and can be held past the busy fall period.[13]

IGFC also penalizes producers who aren't ready when the MSU shows up at their farms. "If we have to turn around and leave, they get billed. We don't like assessing penalties, but as soon as a producer knows that he's going to get charged for not having his animals ready, the problem tends to go away."[14] The MSU, like all USDA-inspected plants, only receives 8

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cause substantial financial hardships for farmers. Disease transmission will also bring increased regulatory scrutiny to the operation, possibly shutting it down permanently." - *Development Options for Small-Scale Poultry Processing Facilities in Georgia*. April 2012.

[12] Gwin, L., A. Thiboumery and R. Stillman. 2013. *Local Meat and Poultry Processing: The Importance of Business Commitments for Long-Term Viability.* ERR-150, U.S. Department of Agriculture, Economic Research Service.

[13] Gwin, Thiboumery, and Stillman (2013)

[14] Island Grown Farmers Co-op Case Study.

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hours of inspected processing time per day free of charge, so it needs to be in operation for all of that time.

Finally, having the MSU and cut and wrap integrated into one business entity is important. As demonstrated by the experience of existing MSUs, it is too difficult to create a viable business on slaughter alone: the MSU needs the cut and wrap revenue, and the ability to keep staff busy and share costs, to be financially solvent.

A note on "mobile": IGFC has a truly mobile MSU. However, based on the experiences of other MSU operators, it may be more practical for MSUs be "mobile" in name only. Most MSU operators report that actually driving the unit to each individual farm is often not cost effective. It can be better to park the MSU at one location and have producers bring livestock to the MSU. The red meat and poultry MSUs could be at the same site or different sites.

Is this option viable for the Central Coast?
Our analysis suggests that it is not. It costs nearly as much to purchase a MSU (let alone two) *and* build a new cut and wrap as it does to just build a regular, non-mobile facility (slaughter plus cut and wrap, all under one roof). Often, operating at several different locations is an inefficient use of labor and resources: in many cases, MSU operators struggle to fully utilize processing capacity. MSUs are best utilized in situations where a brick and mortar, "all-in-one" plant simply won't work (e.g., in the case of J&R Meats where they already have a successful cut and wrap business and probably could never get a kill floor addition permitted within Paso Robles city limits). In addition, producer survey results suggest that the Central Coast region lacks a steady supply of livestock to keep a red meat MSU, a poultry MSU, and a multi-species cut and wrap busy enough to be profitable.

Are producers interested in pursuing this option?
No. Even if this option were viable, producers determined that it would not provide the desired range of services. They have chosen not to pursue this option.

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The Challenges of Inspected, Fee-For-Service Poultry Processing[15]

Very few[i] inspected poultry processors do fee-for-service processing, far fewer than for red meat, largely because it is very hard to be profitable. One solution is to be one's own "anchor tenant," processing primarily in-house birds for in-house sales. As a small, USDA-inspected poultry processor explains, "We have a successful plant but would be a complete failure if we were relying on processing for others." He is willing to process more for other farmers but needs them to bring "relatively consistent numbers for most of the growing season."

He cites three primary challenges for fee-for-service, inspected poultry processors. First, poultry are highly seasonal, and most farmers cannot commit to bringing birds regularly. Second, poultry are far less flexible than red meat species in terms of scheduling, because they can gain so much more weight in a short period of time. Third, the cost per pound to process poultry in a small facility is very high. The technology needed to decrease costs is expensive and requires much more throughput for payback. He estimates that a poultry processor needs to process 2000 birds per day, five days per week, to gain any economies of scale. As a result, to stay in business, poultry processors typically must maintain high prices and require farmers to bring a minimum of 50 to 100 birds at a time.

"We used to do a bunch of birds for others," he says. "Lots of times we spent all the money we made during the weeks we had birds to keep the competent help on the weeks we didn't have birds." He added, "1600 birds one week, zero the next. How do you staff for that?"

[I] The actual number of Federally-inspected (FI) poultry processors is unavailable because of potential confidentiality infringements due to the small number of FI poultry plants in operation.

[15] Gwin, Thiboumery, and Stillman (2013)

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Option #2: Slaughter and processing for poultry only

"Plant in a Box" small-scale poultry processing

Description

As noted in the introduction, the original second option the Central Coast Livestock Producers group wanted to consider was a cut and wrap only, with no slaughter, for further processing of red meat and poultry. After initial research, including conversations with several small-scale poultry processors, we quickly learned that this option was not viable enough to pursue. This is because it is not economically feasible to separate poultry slaughter and processing: the profit margin to slaughter and process a small number of birds is so thin to begin with that separating the two activities is cost prohibitive.

In addition, a red meat cut and wrap would still require a local slaughter facility to slaughter cattle and hogs. The closest facility, Los Banos, currently slaughters beef but not hogs and is unlikely to add hogs in the near future: they estimate that they would need to slaughter 50,000 hogs per year to make up for lost beef slaughter revenue.[16]

Therefore, with agreement from project partner California Center for Cooperative Development, we shifted Option #2 to look at poultry processing only, focusing on the "Plant in a Box" model (PIB). The PIB, one of the few "turnkey" options for small-scale poultry processing, is built and sold by David Schafer of Featherman Equipment[17] in Missouri. It is designed to be a turnkey answer for those looking to process chickens, turkeys and other poultry under USDA-inspection. The PIB unit utilizes a recycled shipping container, 40' long by 8' wide and 8' or 9' high. The unit comes ready to connect to water

[16] Phone conversation with Los Banos, May 2015.

[17] www.featherman.net

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and sewer with all the required equipment in it for approximately $80,000. A site pad, water, power, and a plan for effluent are not included and must be provided on site.

Storage must also be provided on site: the PIB unit takes a chicken from "crate to chill tank" and doesn't include storage. Schafer recommends moving chilled poultry with large totes that can be lifted with a forklift and wheeled into a separate packaging and storage area or back into the (cleaned) evisceration room for drying and packaging. A video of the prototype can be seen here: https://www.youtube.com/watch?v=FC4amKn7L10

The unit is designed to operate seasonally and can in theory process up to 500 birds per day with a crew of three trained people; that said, the first PIB in operation has so far done up to 320 in a day with four people (see below). Schafer calculates that 500 birds per day, 100 days per year, at $3 per bird (the Midwest price) would gross the unit $150,000 in processing fees. "Even at half that volume," he notes, "your payback is less than 3 years."

Table 2: Sample Financial Estimates: Poultry Slaughter & Processing[18]

Approximate plant construction costs: ~ $80,000 for the unit (includes equipment) + site costs + cold storage **Approximate operating costs**: ~ $100,000 - $125,000/yr. **Approximate fees for services:** $5/chicken, $10/turkey for slaughter and packaging (whole birds only). No value-added processing. **Break-even volumes**: ~ 20,000 to 25,000 birds/yr. **Water use:** t.b.d., estimated at 3 - 8 gal./bird[19]

Real World Example: Maple Wind Farm[20]

The first, and currently only, PIB unit in operation started processing in 2013 at Maple Wind Farm (MWF) in Richmond, VT. "The 'plug and play' aspect was really nice," says John Smith, poultry manager at MWF. "It was delivered and we were operating under inspection within a week or two."

In that first year of operations, the facility was state-inspected (Vermont has an "equal to" inspection program). In 2014, MWF started operating under USDA inspection. MWF has increased their throughput and efficiency over the last two years. Smith recalls, "our best day was 320 birds slaughtered, processed and packaged. We did that with 4 people." MWF would like to build upon the PIB infrastructure and expand their operations to have a separate space for cutting up and packaging birds. Right now, they slaughter in the morning, clean the evisceration room at lunch, and then package in that same room after lunch. It works, but involves hauling a lot of things in and out, which isn't very efficient.

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[18] Sample financial estimates are based on data from existing plants in various locations in the U.S. *Actual* costs for a Central Coast facility will vary.

[19] Email correspondence with Maple Wind Farm, June 2015. Smithson Mills, Inc. April 2012.

[20] Adapted from NMPAN Update May 2015: *Plant in a Box: A Solution for USDA-inspected Poultry Processing?*

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As with many small-scale meat processing facilities, MWF's biggest challenge is labor: how to keep skilled staff busy year round. "We're a three season facility, but we are trying to move in the direction of keeping people busy year round so we can keep them on staff," says Smith. MWF has a core crew of 4 employees and employs 2 additional, seasonal workers from Memorial Day through Thanksgiving. MWF is their own largest customer, raising and marketing about 75% of the birds they process. They fill in the rest of their processing days with birds from other producers, charging $5/chicken and $10/turkey for processing. They sell their own MWF branded chicken, retailing at $5/lb.

Equipment has also been a bit of a challenge. "A lot of the equipment that came with the unit didn't quite work for us," Smith reports. MWF has had to add additional equipment to increase efficiency. With their current set-up, they can slaughter 10 birds at a time, and then scald and pluck in batches of 5. They use a 300-gallon chill tank from Featherman Equipment that holds 150-200 birds, plus additional 44 gal. food-grade barrels that can hold another 25-50 birds a piece, depending on the broiler size. MWF utilizes 2-3 lbs. of ice per bird for chilling and about 1,000 -1,200 gallons of water per day for all processing activities.

Smith believes they need to process at least 20,000 - 25,000 birds per year to cover operating costs. MWF processes as many birds as possible on processing days. "Setup and cleanup accounts for a significant portion of our time and takes the same amount of time no matter how many birds we do." Overall, Smith says the PIB unit has been a great move for them and he would recommend it to others. The demand for both processing services and MWF's chicken has been higher than anticipated and MWF is looking to expand now by adding additional brick & mortar processing space to complement the PIB unit.

Is this viable?

This is one of the few options that could work for those looking to process poultry in relatively small volumes. It would need to be structured similar to MWF: one or two farms need to provide the bulk of the processing business with very small producers rounding out the processing day. Ideally, the PIB would be located on a poultry farm where labor could be shared with the farm: on days that staff is not busy in the processing unit, they could be doing other tasks on-farm. In short, this option is only viable if there is a poultry producer that wants to purchase the PIB unit and run the facility.

It is important to note that wastewater permitting and management for this unit might be difficult in California. At MWF in Vermont, wastewater is captured in a series of concrete tanks on site, pumped into a 400 gallon tank on the back of a truck and spread on hay fields and pasture. It is unlikely that this land application of wastewater would be allowed year round in California: any potential site would need to check with the Regional Water Quality Control Board.

Are producers interested in pursuing this option?

Yes. Following the June 2015 meeting, a self-selected group of Central Coast poultry producers indicated that they are interested in further exploring this option. A follow-up

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call with John Smith of Maple Wind Farm was held in August 2015 to learn more about that operation. Central Coast poultry producer Sarah Lopez of Fiesta Farm has developed rough cost and revenue estimates for operating a PIB unit. Those interested in getting involved should contact Sarah at farmers@fiestafarm.net.

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Option #3: New brick and mortar facility for both slaughter and cut and wrap, for both red meat + poultry

A new meat processing facility under construction.

This option requires a somewhat different approach to the "bottom line" than the previous two. The question, "how much throughput do we need to build and maintain a small, inspected slaughter and processing facility?" has been asked for many years by many people with different business ideas in many different parts of the country, resulting in numerous studies. There is no perfect answer, but some useful and practical models are available.

One set of models, included in *Local Meat and Poultry Processing: The Importance of Business Commitments for Long-Term Viability*, was developed by researchers and processors in 2013 for USDA's Economic Research Service. The models in the study were based on real processing plants and have been vetted by many more processors and other analysts since they were published. No model is perfect – circumstances will always vary somewhat – but these estimates are generally accepted as accurate. We have included the models here in this report.

A key element of these models is not just what throughput is required for break-even but what *specific services* can be provided at each of the three plant sizes. Central Coast producers, based on discussions so far, appear to want a facility that provides the services of the "small" plant (in the middle of the table below). That plant is estimated to require 1,084 beef equivalents per year for cash flow and 1,130 beef equivalents per year to break even.

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It is worth noting that processing revenue estimates in the model – that is, what the processor will charge for services – are lower than what is common in California. However, other establishment and operational costs – e.g., the cost of labor, utilities, and supplies – are much higher in California, offsetting the higher revenue.

Table 3: Expense Models for Three Scales of Local Processing[21]

Expenses	**very small**	**small**	**regional**
	custom-exempt	*USDA*	*USDA*
Raw materials/ingredients/packaging	$50,000	$120,000	$700,000
Labor (all inclusive)	$110,000	$300,000	$2,800,000
Office-related overhead[a]	$1,000	$4,000	$25,000
Processing-related overhead[b]	$30,000	$61,000	$450,000
Other overhead[c]	$20,000	$32,000	$150,000
Loan Interest	$10,000	$25,000	$165,000
Depreciation	$10,000	$23,000	$152,000
TOTAL EXPENSES	**$231,000**	**$565,000**	**$4,442,000**
Beef revenue equivalent per yr. for break even[d]	**462**	**1,130**	**8,884**
Beef revenue equivalent per yr. for cash flow[e]	**442**	**1,084**	**8,580**

[a] E.g., Office supplies and equipment, advertising, phone/postage.

[b] E.g., Utilities, small tools, supplies, repairs/maintenance, vehicle expense, laundry.

[c] E.g., insurance, license, property taxes, legal/accounting services, donations, dues, travel, misc.

[d] Assumes average total processing revenue for all plants of $500 per beef, $150 per hog, $150 per sheep or goat.

[e] Cash flow excludes depreciation expenses.

[21] Gwin, Thiboumery, and Stillman (2013)

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Table 4: Expense Model Features and Assumptions[22]

Very Small Custom Exempt Plant	Small Inspected Plant	Regional Inspected Plant
• 2,000 sq. ft. facility • Slaughters/fabricates beef, pork, sheep, goats • Limited sausage making, smoking, curing services • All raw meats packaged in butcher paper & frozen • Option for some vacuum packaging for cooked sausages • No scale labeling (applying labels with actual, "catch" weight to individual packages or cases) • 4 FTE employees	• 4,000 sq. ft. facility • USDA or State-inspected; may still do custom exempt work • Slaughters/fabricates beef, pork, sheep, goats • Sausage making, smoking and curing services • All raw meats packaged in butcher paper and frozen • Vacuum pack cooked sausage, boneless cured meats • Very basic scale labeling • 10 FTE employees	• 15,000 sq. ft. facility • USDA-inspected • Regular 3rd-party audits (GMPs, food safety, animal welfare, certified organic) • QA department monitors sanitation, product safety, quality, shelf life via microbial testing, sensory evaluation • Slaughters/fabricates beef, pork • Sausage making, smoking & curing services • Exact weight retail portion, exact weight portion cutting of steaks and roasts offered • All raw and cooked meats are vacuum packaged fresh or frozen, usually Thermoformed roll stock for retail sale • Complex scale labeling for pieces & cases • 4-color preprinted labels applied uniformly to packages • most product boxed & palletized to ship • 60 FTE employees • Offers health insurance and retirement matching benefits

[22] Gwin, Thiboumery, and Stillman (2013)

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To some degree, these models can be applied to poultry plants. On a revenue basis, at $3/bird, a processor must process 167 birds for the revenue equivalent of one beef ($500). Therefore, a very small poultry plant with annual expenses similar to a very small beef plant needs to process 77,000 birds each year to break even. However, adding a poultry processing line will increase startup and operating costs.

These models are national in scope: they were developed through a review of multiple existing, viable businesses within these categories. Closer to home is a feasibility study[23] conducted in Mendocino County, CA, in 2013. The Mendocino study has different estimates for throughput requirements: the proposed ~2,400 sq. ft. facility has a capacity for 1,500 beef equivalent per year but the study authors estimated that the plant could break even somewhere between 50% and 70% of capacity utilization, or at 750 to 1,050 beef equivalent per year. However, this estimate has not been verified by an operating processor.

The Mendocino Study also includes estimates for:

Plant construction costs: ~$1.4 mil.
Operating costs: ~$600,000 per yr. at capacity[24]
Slaughter, processing and value-added processing charges:
Beef slaughter: $105/hd.
Hogs: $55/hd.
Lambs/goats: $40/hd.
Cut & wrap: $0.70 - $0.95/lb.
Value-added processing: *not included. Estimate at $1/lb. and up*

Real World Example: Foothills Pilot Plant
Neither of the models discussed above represent plants that process red meat *and* poultry. The Foothills Pilot Plant (FPP) in Marion, NC, however, processes poultry and will add hogs in late 2015/early 2016. Their operational experience and projections are instructive.

The FPP was born out of a producer and non-profit led endeavor to increase access to processing in their region. In 2003, a rabbit producer approached the North Carolina Department of Agriculture seeking a rabbit processor. This conversation eventually led to the development of a non-profit entity that applied for grant and foundation funding to conduct a feasibility study for a new plant. Approximately 9 years later, the Foothills Pilot Plant in Marion, NC opened its doors to small-scale poultry and rabbit producers.

In 2012 the plant processed approximately 30,000 broiler equivalents and is aiming for 75,000 broiler equivalents this year. They will be adding a pork processing line this year. "With pork, we can finally be profitable," says plant manager Amanda Carter. "We've been

[23] Hardesty and Harper (2013)

[24] The Mendocino study shows the plant hitting capacity in year 5 with total expenses of $633,428. Projections through year 10 show expenses decreasing each year, to $593,812 in year 10.

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running at break-even since about June 2014." The FPP anticipates processing about 30 hogs/day, with a maximum throughput of 50 hogs/day. They will slaughter and cut into primals only – no further fabrication or value-added processing – so they can turn the product around in 24 hours, one day a week. "The difference in income [by adding hogs] allows us to stay open and be grant independent. There is simply no way to make the chickens come year 'round, but hogs will."

Table 5: Foothills Pilot Plant

Volume Projections: 2015 and 2016	~ 75,000 broilers/yr. ~ 1,500 hogs or small ruminants/yr.
Processing charges per head	$4.65/broiler $125/hog
Services	~ 60% of broilers packaged as whole birds ~ 40% of broilers cut and packaged Hogs cut to primals only (no further processing)
Operating costs	~ $505,000/yr.

FPP has 15 people on staff and can slaughter, cut and package about 1,000 birds per day. About 2/3rds of their staff are work-release inmates from a nearby minimum-security prison. "The pay for work-release inmates is $7.25/hr. (minimum wage) plus merit bonuses. We also offer transitional employment to people getting out of prison: under parole they have to maintain a job." Carter suggests three supervisors on staff: "you really need three supervisors: one person to handle operations, one person to handle regulations, and one to handle financial. If you can't find 3 people and only hire one or two, they will burnout. And, you have to compensate them adequately so they can maintain a decent standard of living: good wages, benefits, and so on."

The plant was owned by the county until 2015 and just recently transferred ownership to the non-profit. Carter would not necessarily suggest this structure to others: "if I had to do this all over again, I would not structure it as a non-profit and chase grant money all day. What you don't pay in interest, you pay in hassle." The plant ended the use of grant funds in 2014 and was finally able to pay all operating costs out of revenue.

Carter suggests a bigger facility than their current footprint: FPP is 3,500 sq. ft. but could use more like 5,000 sq. ft. She estimates that to build a facility that would meet their needs for poultry, rabbit, and pork processing would cost about $1.6 million.

Is this viable?

Not under current conditions. Central Coast producers do not, together, have enough livestock to process for their own meat sales to justify a brand new facility. To start a facility like the FPP, Carter recommends an identified population of at least 50,000 broilers and 1,200 small ruminants or hogs per year, raised by producers who already have meat businesses or very clear prospects/plans for selling the meat at an adequate premium.

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Are producers interested in pursuing this option?
Yes. Following the June 2015 meeting, a select group of Central Coast producers indicated that they were interested in further exploring this option. Producers acknowledged that there is not enough demand for livestock processing in the region to support a new facility as originally conceived and analyzed with the models above. However, they decided to explore a part-time, closed (only open to facility owners) facility to provide USDA-inspected slaughter and cut and wrap services. That analysis led to the development of Option #4 (see Appendix A).

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Conclusion

Given the analysis above, NMPAN does not recommend a new facility for the Central Coast region. A consistent supply of slaughter-ready livestock – with dedicated buyers or very real market prospects – simply does not exist at the volumes needed to justify a new red meat plant.. One of the few options that may work for new infrastructure is the Plant in a Box model for poultry, if one or two poultry producers have enough of their own volume of birds and sales to justify the investment.

At the close of this project, producers are continuing to explore the viability of a part-time facility. Analysis and experience suggest that this model is unlikely to be financially viable. While the motivation to cut costs through part-time operation is to some degree understandable, it is also a decision to underutilize very expensive capital resources. Meat processing is a capital-intensive business, and the large investment required demands that the plant be used as much as possible. Most meat processors aim to increase throughput, to better utilize the plant, equipment and workforce that has taken significant time, money and expertise to acquire.

As noted above, a small plant with the services desired by producers for their markets should expect to process at least 1,000 to 1,500 beef equivalents to be viable. That is, the producers who use the plant need, together, to account for that much demand for processing services, which means they have to have committed markets (at premium prices, across all parts of the carcass) for all that meat. A recent survey[25] of Central Coast producers projected about 786 slaughter-ready beef equivalents for 2015 available in the region, resulting in a gap of about 214 to 714 beef equivalents per year in terms of demand for processing needed to justify a new plant.

However, we do not suggest that simply raising that much more livestock will be enough. As these producers well understand, they must also develop demand for their product at a high enough price per pound, for all cuts on the carcass, to support and sustain a new processing facility. Furthermore, this demand must be generated in a region – not just the Central Coast but the Bay Area, just north – where producers are and will be competing with many other established brands, in a very challenging market environment. Central Coast producers may well be able to compete, based on product quality and differentiation. But it will be far less financially risky to build that market demand by working with existing processors.

Overall, the analysis done in the course of this project suggests that the focus on a new plant is not likely to be the most effective strategy to improve the profitability of Central Coast meat producers and marketers. By saying they can't afford the transportation costs to regional plants, local producers are saying that their meat sales do not generate enough revenue to cover their *true* costs. Building a local plant will not increase revenue but will

[25] Monterey Bay Livestock Producer Survey. Luis Sierra, California Center for Cooperative Development. June 2015.

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be a huge cost (cash, debt, and opportunity cost) burden for the producers who own and operate the plant. If producers do not currently generate enough revenue, and they have done all they can to increase efficiencies and lower costs (e.g., through shared transportation), they need to sell more meat and/or raise prices. Selling more meat requires increasing herd size and finding additional customers. Raising prices requires finding a customer base willing to pay a premium. Time, money, and energy are likely to be more effectively focused on increasing sales to generate additional revenue for local producers. In addition, higher sales volumes and more animals to bring to slaughter per trip will decrease per-head transportation costs. This is a more efficient and effective approach than building a new plant.

We recommend that Central Coast producers find a way to better utilize the existing plants in the broader region. Possible strategies include:

- **Shared transportation:** find ways to reduce hauling costs by transporting livestock to processing and meat back with other producers;
- **Active scheduling:** take advantage of the "slow season" at local processing facilities by adjusting feeding and finishing schedules;
- **Organize:** work together with other producers to streamline processing, providing steady, reliable throughput to your processor. Larger, steadier volumes may allow negotiation on the price of services;
- **Increased sales = increased production:** expand marketing and distribution to get livestock numbers up. More livestock = more demand for processing services;
- **Financial investment:** work with your local processor to help finance the changes you want to see;
- **Communication:** what do you need to improve your relationship with your local processor? What do they need?
- **Increased commitments from buyers:** just as your processor needs your commitment, you need your buyers to commit. How much meat will they buy, at what price, over what period of time? Can you balance the carcass – sell all the parts – through those sales? Does that translate into viable economics for you?

Strengthening commitments between producers and processors is essential to maintaining the existing processing infrastructure needed to bring local meats to market; growing the market for Central Coast meats is essential if that region is to support additional infrastructure. Working with the resources already on the ground is the best next step for red meat producers in the Central Coast region. Poultry producers interested in further exploring the Plant in a Box option are likely to find that a viable solution for regional poultry slaughter and (limited) processing.

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Appendix A

Option #4: "The Alternative Scenario." A private, part-time, USDA-inspected slaughter and processing facility for hogs and poultry.

Following the June 2015 meeting, Central Coast producer Sarah Lopez of Fiesta Farms and others came up with an Alternative Scenario. "Given the preliminary conclusion that the Central Coast meat producer community does not clearly have the capacity to support a full-time, full-service, public-facing USDA slaughter and cut-and-wrap facility, we asked, 'Is it feasible for a core group of farms with regular production schedules to have a part-time, closed USDA facility?'" said Lopez. She and other producers investigated an Alternative Scenario with that business structure. NMPAN suggested that the producers use an interactive, spreadsheet-based cost calculator created by Oklahoma State University (OSU) to analyze the financial viability of this idea. OSU developed this feasibility template to guide potential plant operators through financial planning for construction and/or operation of a small, multi-species meat processing facility.[26] Lopez and others developed the Alternative Scenario, with NMPAN providing guidance during this process and arranging for an initial data review by an experienced processor.

The Alternative Scenario is actually two scenarios: poultry-only and poultry plus hogs. Producers developed throughput, costs and revenue estimates for these two scenarios to present at a wrap-up meeting for this project in September 2015. Amanda Carter, plant manager at Foothills Pilot Plant in Marion, NC (a USDA-inspected poultry and hog slaughter and processing facility) provided review and feedback for these initial estimates. There were concerns that the results as of September 2015 significantly underestimated operating costs. As of September 2015, producers are continuing to research operating costs and revenue with the goal of developing more accurate financial projections for Option #4. Those interested in getting involved in these efforts should contact Sarah Lopez at farmers@fiestafarm.net or EcoFarm at info@eco-farm.org.

[26] This template (along with many other business planning resources) can be found here: http://www.extension.org/pages/17166/meat-processor-business-development

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Appendix B: NMPAN Resources

The Niche Meat Processor Assistance Network is a national network and information hub for small meat and poultry processors and the farmers and ranchers who depend on them to get their product to market.

NMPAN online: www.nichemeatprocessing.org. The go-to website on small-scale meat and poultry processing for local markets:

- Business planning and management
- Policy and regulations
- Plant design
- Processor case studies
- Mobile processing
- Best practices and guidance from innovative processors

NMPAN listserv: join processors, producers, marketers, agencies, nonprofits, and other stakeholders for info sharing and problem solving: ask questions, get answers, share ideas.

Webinars: educational sessions on a wide range of topics, from cost analysis to improving in-plant efficiencies to dry cured meats to regulatory policy.

Research: Peer-reviewed research by NMPAN leadership on challenges and solutions related to small-scale processing and the local meat sector:

- *Local Meat and Poultry Processing: The Importance of Business Commitments for Long-Term Viability* (USDA-ERS Economic Research Report 150)
- *Local Meat Processing: Business Strategies and Policy Angles* (Vermont Law Review)
- *Beyond the Farmer and the Butcher: Institutional Entrepreneurship and Local Meat* (Journal of Agriculture, Food Systems, and Community Development)

NMPAN Business Planning Resources:
Online at www.extension.org/pages/17166/meat-processor-business-development

- NMPAN Business Planning Guide for Small Meat Processors
- Small Meat Plant and Marketing Company Business Plan Models
- Cash Flow Template and Feasibility Template for Small Plants (CISA)
- Financial Planning Template for a Small Meat Plant (Oklahoma State University)
- Cost Analysis: Are You Making Money?
- Meat Processing Feasibility Studies
- Producer-Processor Communication
- Meat Processing Business Planning Webinars

Feasibility Studies and Business Plans
Producer groups, non-profits, economic development agencies, and others dive into meat processing feasibility studies hoping the analysis will result in a new facility. Yet most studies do not lead to new plants. Why? Three main reasons:

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1. **Not enough supply** – not enough livestock to process at a high enough price for services that will generate enough revenue for cash flow or profitability;
2. **Not enough demand** – not enough market demand for meat processed at the plant, which will have to be sold at a price that supports small-scale processing;
3. **No one with the skills and experience to run the plant.** This is a challenging business.

We recommend starting with a business plan that addresses all three of these. A plan that has solid answers for all three points can then be tested for feasibility.

Selected NMPAN Webinars Related to Processor Business Development
Find them at www.extension.org/pages/33477/nmpan-webinars:

- **To Build or Not to Build: Lessons Learned from New Processing Ventures:** Finding a processor that does what you need, when you need it, can be challenging. Building a new facility to meet that need might seem like a good idea. Sometimes it is, but often it isn't. This webinar covers what works (and what doesn't) when building new facilities.
- **Local Meat Processing: Successes and Innovations:** Farmers want more processing options to bring local meat and poultry to market, but with complex regulations and slim profit margins, how do successful processors make it work? The webinar features innovations and lessons learned from successful processors around the country.
- **The Business of Meat Processing: Planning and Profitability:** Planning to expand, change, or build a new meat processing business? Trying to figure out how to make your small processing business more profitable? On this webinar, business management and planning experts address these important topics.
- **Cost Analysis: Are You Making Money?** Many meat processors watch their checkbook balances and hope for the best. Some wade through P&L statements looking for answers and often come up short. Most small processors don't fully understand why they are or aren't making money and what they can do about it. Learn how to develop systems that will give you the financial information you need to improve your business performance.

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