So You Want To Start A Meat Plant?

A short primer on what you need to know

A resilient food system requires a diverse group of meat processors when it comes to scale, services provided, and location. The coronavirus pandemic has stretched small and mid-sized slaughterhouses and meat processors thin. Demand has outstripped supply in many places. The bottlenecks in parts of this system have encouraged many entrepreneurs, start-ups, and frustrated livestock producers to consider opening new meat processing facilities. The Niche Meat Processor Assistance Network (NMPAN) website has a variety resources available for people to learn more about what it takes to plan, design, and construct a meat processing facility, as well as how to run it efficiently and profitably. Those resources are summarized in this information brief which includes links to additional resources that delve deeper into specific topic areas.

What is required to successfully build and launch a new meat processing facility?

Customers: that bring a consistent volume of animals to your facility and are willing to pay for your services

Capital: which includes both owner investment plus outside capital, not only for start-up costs but also to cover operations for the first couple years

Location: ideal site, suitably zoned for what you plan to do, accessible to highways and producers, near a population that can provide a workforce

Resolve: determination, patience, and grit to see the project through

People: the right team with experience, business savvy, regulatory understanding, etc.

Potential Barriers

Regulations

Animal slaughter, and the processing and sale of meat are regulated in the United States to ensure food safety and accurate product labeling. At the most basic level, regulations include custom-exempt, state inspected, or federally inspected. What do you need to know to get started? See this beginners' guide on meat regulations for more information.

Financing - Small Plant Economics

Building and operating a meat processing facility can be very expensive. Operating costs are also quite high and profit margins tend to be low. Average costs to build are around $350/square foot and another $50/square foot for equipment. That places a modest 5,000 sq. ft. facility at a price tag of around $2,000,000.

The following table describes average operating costs for a very small custom-exempt plant, small federally inspected plant, and regional federally inspected plant. These data are from 2016 and it is likely that in five years these costs have increased by about 20% across all expense categories.

Expenses	Very Small	Small	Regional
Raw materials/ingredients/packaging	$50,000	$120,000	$700,000
Labor (all inclusive)	$110,000	$300,000	$2,800,000
Office-related overhead	$1,000	$4,000	$25,000
Processing-related overhead	$30,000	$61,000	$450,000
Other overhead	$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 year for break even	462	1130	8884
# Beef revenue equivalent per year for cash flow	442	1084	8580

Assessing Feasibility

New Plant Checklist

If you are thinking of embarking on the planning process to construct or buy a meat processing facility (fixed or mobile), there are important questions you should first answer. This list of questions, also know as the "new plant checklist," was developed from responses to a survey of meat processors around the country who were asked what they wished they had known when they got started. Topics covered by the checklist include getting producer commitments, obtaining appropriate zoning and utility connections, getting the right technical expertise and skilled-labor force and acquiring appropriate financing.

Feasibility Study

Every meat processing plant needs at least the following equation to be successful: Capital + Customers + Talent/Staff = Potential Success. The best way to ensure the key parts of the equation are there, is to first write a feasibility study (watch this webinar here to learn more about what these studies should contain). Then, if the project appears feasible, write a business plan. From there you can look into pulling together financing, followed by developing the design, getting all the appropriate permits, finding builders, and finally beginning construction. Read a couple of the feasibility studies in this archive to get a sense of what goes into them.

Business Planning

Every business needs a plan, whether you're just getting started or changing course after many years. This short guide walks you through a basic business plan from a hypothetical processor looking to upgrade and expand its facility. It contains detailed financial projections and suggestions for planning other plant configurations. Be creative when you decide your business model. What gaps are there in the existing industry and how can your plant profit from helping to fill those gaps?

Marfa Meats

Marfa, Texas

A brand new West Texas plant that just received its federal grant of inspection for red meat slaughter and processing but is not yet open as of the writing of this paper.

Marfa Meats was compelled to open due to the high volume of cattle in West Texas and the limited number of processing facilities there. While they purchased a pre-manufactured modular processing building from Friesla Corporation, the owners did a significant amount of planning to obtain loans for start-up costs and initial operating costs. They also researched the job market and prevailing wages in order to recruit initial employees.

Their advice to others includes:

- Be patient. It will take far longer than you think.
- Consider not only the facility needs, but also related infrastructure such as waste management, septic systems, and permitting for those things.
- For everything, make sure the facility designers and various contractors are all talking to each other on a regular basis and speak the same language.

Although the initial price of this facility is quite high (~$750sq ft), the compact design means that the overall price tag will come in around $1.8 million including land, equipment, septic, and other related infrastructure.

Meatworks

Westport, MA

Meatworks, another recently constructed USDA facility in Westport, MA, had these thoughts to share (loosely quoted):

- All spreadsheet models are wrong; but some are useful.
- Do not trust any cash flow projections that go beyond three years.
- Finding and keeping quality labor will be your biggest and most important challenge.
- You will need more cooler and freezer space than you think.
- Do a lot of planning and do it with the right people. Go with someone who has built more than one plant and see the plants they've built.
- It will cost more than expected, more than it should have and the reasons for that are many - site, site prep, waste systems, machinery, etc.

Implementing Your Plan

Funding

"Creativity before capital. Have you explored all your other options, such as partnering or investing in an existing facility?"— Iowa State Extension agent

As mentioned above, the cost to build and operate a meat processing facility, even a mobile one, is expensive. This is not for the faint of heart. You will likely need to raise capital for the build out beyond what you can bring to the table. Consider agricultural lenders, private investments, USDA Agricultural Marketing Service grants, USDA Rural Development loans or other federal grant opportunities. Here is a webpage to dig deeper into the subject of financing for meat processors.

Plant Design

Building a meat plant is no easy job. Even commercial contractors may not be familiar with the ins and outs of building a food processing plant that needs to be constantly washed down, contains rooms held at -20˚F, and has 1,000+ lb. carcasses hanging from rails throughout the plant. Much information concerning building meat plants is proprietary. Here are some great resources that are available to the public. **Remember: check with your food safety inspection agency and local planning department before beginning any construction.**

Waste Management

In meat processing, there are two kinds of waste streams — solid and liquid. Much of it can be captured and sold or utilized for other purposes. It will benefit you to plan carefully to avoid as much waste as possible. Solid waste (like hides, bones, trim and offal) can be made into other valuable products by the processor, sold, or sent for a fee to compost or fertilizer companies, rendering companies,

or sent to the landfill. Liquid waste includes blood and wastewater and disposal is a little more complicated. Blood should be captured separately from the wastewater and sent to a renderer or landfill. It can also be field applied in some locations.

The design, permitting, and installation (as well as cost) of your wastewater treatment will be one of your most important challenges and could make or break a project. Learn more about waste management here.

Labor

"Invest money as much as you can afford in automated packaging, labeling, and inventory/barcoding systems. Because good labor is so scarce and expensive, you will be making a wise investment in equipment."—Washington processor

Even if you have the land, capital, animals, and other right ingredients to launch, if you can't find the right talent to run and operate your plant, you will be doomed out of the gate. Attracting and retaining good labor is the biggest challenge for small meat processors according to every survey that NMPAN has ever administered. Learn more about workforce management here.

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Thanks for reading!

For more information and resources on *Local and Regional Food Systems Response to COVID: Building Better Beyond,* **visit: https://lfscovid.localfoodeconomics.com/**
where you can sign up for our project listserv, read other innovation briefs, and check out resources put forth by other sectors of the local and regional food system.

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