Assessing Needs and Opportunities:

A Feasibility Study for USDA-inspected Livestock Slaughter in Okanogan County, Washington

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Prepared by the Methow Conservancy

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On behalf of the TwispWorks Foundation, the Okanogan Conservation District, and the USDA Rural Business Development Program

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1.0 INTRODUCTION

This study assesses the need for USDA-inspected slaughter in Okanogan County, a rural county of North-Central Washington. The study also identifies a feasible opportunity to serve the identified demand for USDA-inspected livestock processing.

This study was supported by a grant from the United States Department of Agriculture's (USDA) Rural Business Development Grant Program. The grant was implemented by three partners: the **TwispWorks Foundation**, the **Okanogan Conservation District,** and the **Methow Conservancy**. The TwispWorks Foundation is a non-profit in the Methow Valley that works to create economic development opportunities, with a particular focus on the arts and education, but also on technology and agriculture, as well. The Okanogan Conservation District is a governmental, non-regulatory agency that offers support to landowners and land managers wishing to conserve natural resources in the county. They frequently work with local farmers and ranchers, offering stewardship planning services, conservation incentives and workshops and educational opportunities. The Methow Conservancy is a conservation land trust, established in 1996 and based in the Methow Valley, thatf works to protect wildlife habitat and agricultural lands from development. The Methow Conservancy has also recently been developing a more active program to offer diverse support to small farms and ranches in the Methow Valley, to support a vibrant future for working farms, regardless of whether they are under conservation.

Project work was conducted primarily by project manager, Alyssa Jumars, a member of the Methow Conservancy staff. Further assistance was provided by Kayla McIntyre, an independent agricultural consultant; by Kathryn Quanbeck, niche meats consultant and project advisor; and by diverse staff from each of the partner organizations. Other supporting partners in this study were an indispensable Producer Advisory Committee of nearly a dozen producers raising diverse livestock and representing the geographic diversity of Okanogan County[1]; affiliates of Washington State University[2]; as well as three additional consultants from the niche meat industry.[3]

This study was motivated by anecdotal accounts from livestock producers who raise meat for local and expanding niche markets. Across the county, producers feel that the success and sustainability of their operations are severely challenged by limited access to USDA-inspected livestock processing services. There are currently no USDA-inspected slaughterhouses in Okanogan County, and most producers are traveling 250 to 500 miles, round trip, to access USDA-inspected processing. Additionally, producers from the Okanogan have increasingly struggled with limited availability of appointments at the handful of small USDA plants in eastern Washington that continue to serve small farms. In the last 2-3 years, both the travel distance and the difficulty of securing slaughter appointments have begun to wear particularly hard on producers. Given the deep and personal impact to family farms and ranches, most producers have a sense that the need

[1] Betsy Devin-Smith; Jennifer Hover; Deb Jones-Schuler; Rachel McClure; Rod Haeberle; Bill Kresge; Mark Timmerman; Carey Hunter; Albert Roberts; Casey Smith; Howard Asmussen

[2] Dr. Paul Kuber, WSU livestock extension agent and PhD of meat science, and WSU masters-candidate in Animal Science, Natasha Moffit-Hemmer.

[3] Shane Nelson, S&K Meats; Bruce Dunlop, Island Grown Farmers' Cooperative; Greg Sherman, GCS Northwest HACCP Consultants.

for improved access to livestock processing services in Okanogan County is urgent – and assume that it must also be large, when aggregated county-wide.

However, there was a clear need for data to better understand the scope of the problem, and the range of possible solutions. Most feasibility models for new, small meat plants estimate a required minimum flow of 1,200 beef (or beef equivalents)[4] per year for profitability.[5, 6] Over the course of this feasibility study, it became clear that the identified demand among producers in Okanogan County would fall far short of 1,200 beef equivalents, and that other options for serving the demand would need to be explored in greater detail.

WSDA-inspected "custom-exempt" processing vs. USDA-inspected processing

Custom-exempt processing can take place at meat plants that are certified by the Washington State Department of Agriculture. Custom-exempt facilities are subject to semi-annual oversight and inspection from the state, whereas facilities certified by the Food Safety Inspection Service (FSIS), a branch of the United States Department of Agriculture (USDA), are inspected daily by a federal inspector. All animals slaughtered under USDA-inspection must be inspected live by a FSIS agent, prior to slaughter.

Most farms that process meat under the custom-exemption choose to slaughter on-farm, for the sake of convenience and to avoid additional stress to the animal. Typically, farms will hire a WSDA-certified kill service, to slaughter and break the carcass, and ultimately deliver the carcass to a custom-exempt, cut-and-wrap shop.

Farms may sell custom-exempt meat *only* by the quarter, half or whole animal and *only* to individuals who purchased the animal while it was still alive, "on the hoof." USDA-inspected product can be sold freely **by the cut** to individuals, stores, or restaurants, whereas custom-exempt meat *cannot.*

The study ultimately worked closely with two existing, custom-exempt, cut-and-wrap plants in the county: one in Twisp, and one in Tonasket. The study assessed whether either of them would be suitable to expand and upgrade to a USDA-inspected slaughter plant. After an initial assessment, the plant in Twisp presented several barriers to successes, but the plant in Tonasket proved to be an extremely promising option. The Tonasket plant, Double S Meats, is of new and modern construction that already meets USDA specifications for cut-and-wrap. Double S Meats already operates under USDA inspection for a wholesale cutting and distribution arm of their business. They are also located in closest proximity to the majority of livestock raised in the county, and the town of Tonasket proved extremely receptive to a slaughterhouse. Most importantly, the survey process revealed that Double S Meats appears to be well-trusted by producers.

[4] While there is some variation within the industry and among feasibility studies, for the purposes of this study, we consider 1 beef to be equivalent 2.5 hogs, 6 lamb, or 6 goats.
[5] Community Involved in Sustaining Agriculture (CISA). "Demand and Options for Local Meat Processing: Finding the way from pasture to market in the CT River Valley." USDA Rural Development, 2008.
[6] Niche Meats Processor Assistance Network. "Options for Increased Processing Capacity in California's Central Coast Region." USDA Agricultural Marketing Service, 2015.

1.1 EXECUTIVE SUMMARY

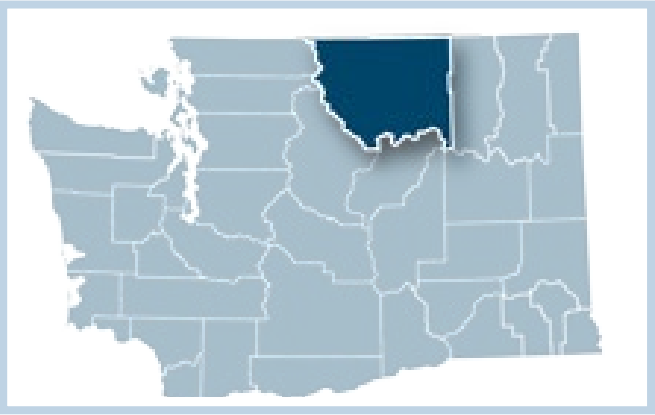
In the following feasibility report, we describe the regional context for livestock production in Okanogan County and the approach taken by the study team to conduct both a ***Needs Assessment*** and an ***Opportunity Assessment*** for improving access to livestock slaughter and processing in the region. Our work revealed a significant demand for USDA-inspected slaughter in Okanogan County and a promising opportunity to meet that demand by expanding the capacity of Double S Meats, in Tonasket.

Our study of feasibility of USDA-inspected slaughter at Double S Meats is divided into three sections: an ***assessment of the market*** for slaughter services; a discussion of the ***technical feasibility*** of developing slaughter capacity at the existing facility; and an evaluation of ***financial feasibility*** in light of market potential, infrastructure costs, and operating costs. While there remain some further areas of research, our study concludes that ***an incremental, collaborative approach to developing USDA-slaughter services at Double S Meats is feasible***.

The incremental approach proposed in this feasibility study is to develop a permanent docking station for a USDA-certified, Mobile Slaughter Unit (MSU). The Methow Conservancy is willing to purchase a MSU and lease it to Double S Meats for a period of 5 years. The proposed, 5-year pilot project would allow Double S Meats to test assumptions about demand for USDA-slaughter and to navigate the learning curve of this new venture. At the end of this period, Double S Meats could decide to purchase the MSU from the Methow Conservancy or to build a more efficient, permanent kill floor. If demand for services were to fall drastically short of predictions, this incremental approach would prevent undue risk to Double S Meats -- a small, family-run business.

The final sections of this report describe the process by which the Methow Conservancy determined how a non-profit organization could support a for-profit entity, in order to serve livestock producers and address a long-standing community need. The report also describes possible ***barriers to success***, as well as some of the ***unique opportunities*** that could result from a ***concerted effort to develop a spirit of collaboration*** among livestock producers, the Methow Conservancy, and staff of Double S Meats.

1.2 BACKGROUND AND REGIONAL CONTEXT



Okanogan is Washington State's largest, and one of its least-populated counties, located in the north-central portion of the state -- just east of the Cascade Mountain Range and just south of the Canadian border. Population density is 7.8 people per square mile, as compared to the state's average of 101.2 per square mile.[7] Okanogan County enjoys a

[7] 2016 United States Census Bureau: American Community Survey.

particularly wild and rugged landscape, much of which is public land. Roughly 78% of Okanogan County lands are owned by Federal, State, or Tribal entities. [8]

Okanogan ranks 9th of Washington's counties, in estimated value of agricultural goods produced; and 10th in the number of acres dedicated to cropland.[9] The bulk of irrigated agricultural lands are dedicated to commercial tree-fruit, hay and pasture, and grain crops.[10] However, much of the county's livestock production involves large areas of both private and public native rangeland. Historically, the upland shrub steppes and higher elevation forests have been an integral component of spring, summer, and fall grazing rotations.

Ranching in Okanogan County has weathered its fair share of challenges over the decades. The volatility of the commodity cattle market has always threatened small and medium ranches operating in a high-risk, low-margin business. Pressures from development and increasing land values have also steadily whittled away the large, historical ranches. And the potential for drought conditions and low forage yields, in addition to the increasing threat of catastrophic wildfires, are risks that continue to grow in a changing climate.

In 2002, the last remaining livestock sale yard in the county closed its doors, forcing ranchers to haul their livestock to the Toppenish and Davenport sale yards, a 200-mile round trip, or to explore new alternatives, like online auction houses. The sale yard closure occurred during a time of historically-low prices for cattle on the commodity market, causing significant strain on the viability of long-time family ranches in Okanogan County.

2012 Census of Agriculture,
Okanogan County:

Number of farms: **1,449 farms**
Acres in farm ownership: **1,205,265**
Acres of harvested crops: **129,232**
Average farm size: **832 acres**
Median farm size: **42 acres**
Farms grossing less than $2,500: **542**
Farms grossing over $50,000: **160**

The value of livestock products produced in Okanogan County was estimated to be $37.3 million in 2012, making Okanogan the 9th highest-grossing producer of livestock among Washington's counties.

QuickFacts from U.S. Census Bureau (2017 PEP): Okanogan County

Population: **41, 742**
Population employed by farming/fishing: **7.8%**
Median household income: **$41,158S**
(State-wide median household income: **$62,848**)

2016: Top Five Economic Sectors Okanogan County

Agriculture, forestry, fishing	32.1%
Local government	22.4%
Retail Trade	9.9%
Health Services	8.3%
Hospitality	6.5%
All other industries	20.7%

Source: Washington State Employment Security Department: Quarterly Census of Employment and Wages (QCEW)

[8] 2014 Okanogan County Comprehensive Plan (page 4): www.okanogancounty.org/planning
[9 & 10] 2012 United State Department of Agriculture, National Agricultural Statistics Service: State and County Profiles: www.agcensus.usda.gov

Over the last decade, Okanogan County has also begun to witness the entry of corporate cattle ranches quietly purchasing ownership in family-run ranches. As in every other sector of agriculture, increases in the costs of doing business have outpaced the returns, and small-to-medium size ranches have found it increasingly hard to compete with well-financed, vertically-integrated operations that enjoy economies of scale.

Estimates from the USDA's Agriculture Census for Okanogan County reveal a dramatic decline in recent years of the numbers of cattle, sheep, and pigs raised on the land, as well as a decline in the numbers of total farms in operation.

	2007 Ag Census	2012 Ag Census	% change 2007-2012
Inventory: Cattle/Calves	44,551	35,471	– 20%
Farms: Cattle/Calves	518	466	– 10%
Inventory: Sheep/Lambs	1,725	1,527	– 11%
Farms: Sheep/Lambs	92	75	– 18%
Inventory: Pigs	256	248	– 3%
Farms: Pigs	42	33	– 20%

And yet, despite the challenges, many family ranches continue to adapt and employ characteristic creativity. Ranching also remains core to the heritage and ethos of Okanogan County, and a large part of what distinguishes the county's cherished rural character.

An Important Distinction

Ranches in Okanogan County have traditionally been multi-generation, family-run operations raising 100 to 1,000 cow-calf pairs on large acreages of dryland range, including both public and private lands. Long, cold winters and hot, dry summers limit the growing season for native forages and for hay production, making the region challenging for finishing cattle. Most ranches produce calves and sell them to operations in other parts of the state where it is easier and cheaper to produce feed. The calves are then raised by "feeder operations" on hay, pasture, silage, and/or grain for an additional 6-12 months, to "finished," butcher weight. For the purposes of this feasibility study, the distinction that ***ranches in Okanogan County generally do not produce beef, but rather calves*** is critical.

Typically, calves are born in the spring and sold in the fall – either through the Davenport Livestock Sale Yard, or through online livestock auctions. For a cow-calf operation to keep steer calves through the winter and raise them for an additional season to finished weight means incurring additional feed and labor costs, as well as opportunity costs and significant risks. Additionally, finishing steers creates additional tasks, complexities, and inefficiencies within an operation that is structured around raising calves. Despite these drawbacks, an increasing number of family ranches in Okanogan County are exploring the growing niche opportunities for farm-to-table meats. Particularly as ranches change hands from one generation to the next, the new generation seems particularly motivated to explore value-added ventures, partially as a way to diversify ranch

revenue streams. However, it's important to note that very few of the cow-calf ranches that participated in the survey indicated that they have any intention to consider a large-scale shift in the structure of their operation, from producing calves to producing beef. So while there are large numbers of cattle raised on the land in Okanogan County, those numbers do not translate into high demand for slaughter and meat-processing services.

However, the traditional cow-calf ranches that are cautiously exploring farm-to-table opportunities as a minor component of their operations were not the sole focus of this study.

There are a large number of small farms across the county, with well-established brands that are raising diverse livestock solely for meat production. The focus of these small operations is invariably humanely and wholesomely-raised meats, including beef, pork, lamb, goat, bison, and poultry – although poultry producers are not included in this study. These small farms have growing opportunities in niche markets for farm-raised meats. However, these producers overwhelmingly indicate that long-term growth and success is unattainable without improved access to USDA-processing.

Old News

The perception of an urgent need for USDA-processing among producers of farm-raised meat products is not new. This study is not even the first feasibility study that has been conducted in Okanogan County for USDA-inspected slaughter and processing. In 2003, a non-profit called the Project for a Sustainable Methow was awarded a grant by the Washington State Department of Agriculture's (WSDA) Small Farms and Direct Marketing Program, to explore the feasibility of a USDA-certified, mobile livestock processing unit in Okanogan County.

A small history lesson on federal meat legislation and state inspection programs:

Congress passed the Federal Meat Inspection Act, in 1906, to protect consumers and ensure a "wholesome" and safe meat supply. The legislation made it a crime to adulterate or misbrand meat, and required that meat be processed under sanitary conditions. The Department of Agriculture was authorized to conduct ongoing monitoring and inspection of slaughtering and meat packing plants, and given the authority to inspect and condemn meat products determined to be unfit for human consumption; to require inspection of livestock before slaughter; and conduct a postmortem inspection of every carcass.

Under the Federal Meat Inspection Act of 1906, inspection was the responsibility of each state's Department of Agriculture. However, because state funds for inspection were typically limited, abuses were not infrequent. By the mid 1960's, consumer group began to lobby for an overhaul of the 1906 act, with the hopes of better protecting consumers and ensuring more humane handling of livestock.

The 2003 study explored producer interest in using a mobile, on-farm, USDA-inspected slaughter unit and interest among local restaurants and stores in sourcing locally-raised meats. A preliminary assessment of the technical and financial feasibility of operating a mobile slaughter unit was also conducted. While the study concluded there was moderated interest among producers, a cautious willingness among local buyers, and some promise of overall feasibility based on a successful mobile slaughter unit in western Washington State, the study never resulted in project implementation.

It is important to note that the 2003 study indicated livestock producers who were selling meat products were primarily processing under the WSDA's custom-exemption and selling direct-to-consumer. According to the study, producers worried about the additional cost of processing under USDA-inspection, and wondered if their existing customers would see the value in USDA-labeling.[11] Producers indicated an interest in selling meat by the cut to individuals, stores, and restaurants -- but at the time in 2003, few producers were actively engaged in those market opportunities or had an understanding of the complexities of selling by the cut, as compared to selling quarter, half or whole shares of an animal under the custom-exemption. However, despite having no established markets for USDA cuts of meat, the study indicated that several producers were willing to commit to processing 160 head of cattle, 360 hogs, 100 sheep, 10 goats, and 100 buffalo if a mobile slaughter unit became operational.[12] A concern with these estimates from the 2003 feasibility study is that producers may have believed that USDA-processing would somehow be coupled with future marketing and sales, or some kind of collaborative brand effort. It is unclear whether these responding producers had established market opportunities for the animals they were promising to commit to processing under USDA inspection.

Fast-forward 15 years. Farms in the Okanogan are actively developing niche market opportunities for their unique farm brands. They are taking animals to USDA facilities in other parts of the state, and slowly building a diverse customer base. They have websites, active social media sites, and online shopping platforms. They are selling locally, as well as to the urban markets in western Washington. They are working with Seattle-based restaurants, regional food hubs, large multi-farm CSA programs, or farm-direct platforms like Barn-2-Door or Crowd Cow.

History lesson, cont'd…

The Wholesome Meat Act of 1967 required state inspection programs to be "at least equal to" that of the federal Food Safety and Inspection Services (FSIS) of the United States Department of Agriculture (USDA). States that were unable to upgrade their inspection program and maintain the standards established by the FSIS, were allowed to relinquish their inspection programs to the FSIS. Washington State was among the states that ultimately relinquished their own inspection program and allowed the FSIS to administer meat inspection in the state.

In 1967, there were nearly 10,000 slaughterhouses across the country. Fifty years later, there are currently less than 3,000. Only four companies control over 80% of the beef processing in the United States, and four companies control over 60% of the pork processing. Many attribute the demise of small, regional meat packers and the consolidation of slaughterhouses to the passage of the Wholesome Meat Act.

Our feasibility study was particularly cautious to clarify that a USDA-processing facility would not offer marketing or sales services of any kind. In the survey process, respondents were asked about their established markets, and whether they had additional market opportunities they were unable to serve because access to USDA-processing was a primary barrier. They were asked how many animals they are currently processing under USDA-inspection, and how many additional animals

[11] Dune Ives. "Okanogan County USDA Certified Mobile Livestock Processing Unit Feasibility Study." Partnership for a Sustainable Methow, and WSDA Small Farm & Direct Marketing Program, 2003. Page 12.
[12] Dune, page 14.

they would raise for opportunities they already have, but cannot meet because of limited access to processing.

While the perception of the urgent need for improved access to USDA-inspected processing is not new -- a lot of things have changed over the last 15 years that make the scope and context of the need different than in 2003. Many more farms in Okanogan County *do* have established markets for USDA-processed meats, and many more *do* understand the complexities and the effort involved in marketing to stores, restaurants, CSA's, etc. The emergence of platforms and food hubs connecting online consumers directly to farms has greatly changed the landscape for high-value niche markets for farm-raised meats. While the market for local, sustainable, farm-raised meats may be beginning to experience some saturation, and also some competition from larger brands, there continues to be room for strategic growth (APPENDIX: Kayla).

Unfortunately, what may also be changing is access to the limited number of small USDA-inspected plants in eastern Washington that are willing to serve small farms. Currently, there are five small plants used by producers in Okanogan County, that are within a 200 mile radius of points in the county. Of those five, each have navigated their own unique struggles -- from startup struggles, to ownership changes, to aging facilities -- and have at times been unable to reliably offer appointments to producers in the Okanogan region. Uncertainty of this nature makes the growth and success of small-farm brands extremely challenging.

The challenge of limited access to USDA-inspected processing is not unique to Okanogan County. Producers in rural communities across the West and across the entire United States have been grappling with this problem for decades.[13] What continues to be at stake are the livelihoods of small farms, the viability of small-scale agricultural economies, and the vibrancy of working agricultural landscapes.

1.3 METHODOLOGY

The study was conceptualized as two components: as a Needs Assessment and as an Opportunity Assessment. The first component was intended to better understand the needs of diverse livestock producers, and to determine the potential demand for USDA-inspected slaughter and processing services. An intensive, county-wide producer survey process was launched in February, and reached nearly 100 producers over the course of four months. The second major component of the study was a simultaneous exploration of the range of feasible opportunities to better serve the anticipated need. Alternatives initially considered included a brand new plant; expansion of an existing (custom-exempt) plant within the county; and a collaborative trucking program to increase the sustainability for producers of using existing USDA plants outside the county. It quickly became clear that a new plant might not be realistic, and that collaborative trucking would not adequately serve the needs of producers. As a result, the study focused on exploring opportunities to work with existing, WSDA-certified, custom-exempt, cut-and-wrap plants that might be suitable for expansion to include USDA-inspected slaughter and processing.

[13] Laruen Gwin, Daniel Marti, Rachel Johnson. "Slaughter and Processing Options and Issues for Locally Sourced Meat." Economic Research Service, United States Department of Agriculture. June 2012.

1.3.1 NEEDS ASSESSMENT

The Needs Assessment began with the careful formation of a Producer Advisory Committee. Nearly a dozen producers were invited to advise the study process and lend their insight. The producers represented diverse operations raising calves, beef, pork, lamb, and goats; and they were also representative of the geographic diversity of Okanogan County. They provided invaluable suggestions and context that shaped the survey questions and outreach strategy. They met a total of four times; however, most producers also offered the project manager advice and suggestions outside of the group meetings.

PRODUCER ADVISORY COMMITTEE

Betsy Devin-Smith & Casey Smith	BCS Livestock	Lamb	Winthrop
Rachel McClure	McClure Ranch	Cow-calf	Nespelem
Bill Kresge	Island Mountain Farm	Lamb & pork	Tonasket
Deb Jones-Schuler	Wild Plum Farm	Pork	Winthrop
Mark Timmerman	Oberge Brothers Beef	Beef	Havillah
Kayla McIntyre	Double J Ranch	Cow-calf	Okanogan
Carey Hunter & Albert Roberts	Pine Stump Farms	Goats	Omak
Rod Haeberle	Haeberle Ranch	Cow-calf	Omak
Jennifer Hover	Hover Highland Cattle Co.	Beef	Winthrop
Howard Asmussen	Double R Ranch	Cow-calf	Pateros
Natasha Moffit Hemmer	WSU, Master's Candidate		Okanogan

Survey Design

With guidance from the Producer Advisory Committee, we developed a survey questionnaire to gather information about the scope of the need for improved access to livestock-processing services. The Producer Advisory Committee was instrumental in influencing the design of a survey that asked for as much detail as possible, without asking socially-unacceptable questions that would allow one to infer herd sizes or the aggregate value of a ranch operation. Questions were framed only as they were relevant to this study: for example, how many animals did a rancher process and sell each year, for meat alone? A cow-calf operator might process only 5 beef for meat, but sell 100-200 calves per year. We deliberately chose not to ask how many animals a producer had in his or her herd, as this line of questioning is likened to asking a rancher how much money s/he has in the bank.

Upon the advice of the Producer Advisory Committee, the survey was designed so that respondents could choose to complete the survey anonymously. Given fairly widespread sensitivity among the ranching community to privacy concerns, this approach was important. About half of respondents chose to respond anonymously.

Two distinct surveys were actually designed: one for small farms raising diverse livestock, specifically for meat (including lamb, pork, goat, and beef); and the other for cow-calf operations

whose primary product is calves and not finished beef. Because the two types of operations have some significant structural differences, some of the questions were approached differently.

Producers were asked:

- How many and what species of animals do you process for meat each year? How many are processed under USDA-inspection, and how many under the custom-exemption?
- Which types of markets are most important for your farm-raised meat products (individuals, restaurants, groceries, farmers' markets, institutions)?
- What percentage of your market is outside of Okanogan County?
- Which urban markets do you serve? (Wenatchee, Seattle, Spokane, Portland, Other)
- Where is your farm located in the county?
- Are your current options for meat processing meeting your needs?
- How far are you traveling to access a processing facility?
- What do you consider a maximum "sustainable" distance to travel to access processing services?
- Would you be interested in cooperative freight services, to access regional, USDA-inspected facilities more efficiently?
- If you had access to a plant that could process both USDA-inspected and custom-exempt products, which type of processing would you prefer? (Or would you prefer both, depending on the end customer?)
- Do you have existing market opportunities for USDA or custom-exempt product that you are not fully able to serve? Is access to slaughter and processing a limiting barrier to growth?

Producers were also asked to rate their customer experiences using regional USDA slaughter plants in eastern Washington[14] as well as custom-exempt plants in Okanogan County.[15] Producers were asked to score each plant, on a scale of 1-5 (1 being unsatisfactory, 5 being excellent) in each of the following categories: cutting quality, affordability, customer service, plant sanitation, and capacity for multi-species.

Additional information was gathered about:

- Factors influencing producers' preferences for USDA-inspected or custom-exempt processing;
- Preferred times of year for slaughter, and willingness to slaughter at other times of the year;
- Additional value-added services that would be desired from a processing facility (dry-aging, cured meats, smoked meats, access to long-term freezer storage, vacuum packing, flash freezing, scald-and-scrape, etc.)

Cow-calf producers were also asked about potential interest finishing beef for a regional brand, and about considerations and criteria that would influence their desire to participate. However,

[14] Livestock Processor's Cooperative Association (LPCA), Odessa; Pure Country Harvest, Moses Lake; Smokey Ridge, Chewelah; McCary's, Basin City; Cascade Food Corp, Lynden.
[15] Thomson's Custom Meats, Twisp; Okanogan Custom Meats, Okanogan; Black Dog Meats, Brewster; Superior Meats, Ellisforde; Double S Meats, Tonasket

the survey question was careful to clarify that any future sales and marketing efforts were well beyond the scope of this study.

Outreach Strategy

With the help of the Producer Advisory Committee, the project team was able to develop an extensive list of over 120 farms and ranches to reach in the survey process. Between the project manager, Alyssa Jumars, and the outreach coordinator, Kayla McIntyre, an outreach plan was developed, and roughly 100 producers were reached by phone and invited to participate in the study process. This approach was time consuming, but highly effective. It provided the opportunity for farmers and ranchers to ask questions about the study, and to take a more vested interest in the project. It also allowed the opportunity for the outreach team to capture insight and information outside of the survey form. The outreach team made over 100 phone calls, in many cases, leaving voice mails and trying back a week or two later. Ultimately, the outreach team was able to successfully connect with about 60% of these producers over the phone.

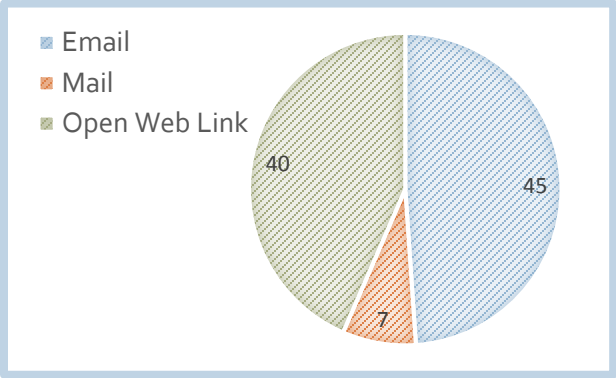
Rather than administer the survey over the phone, Kayla or Alyssa asked if producers would agree to receive a copy of the survey via email, to complete at their convenience. About a dozen producers requested that a hard-copy survey be mailed to them instead. However, most producers agreed to receive an email invite via SurveyMonkey, which allowed the project team to track whether a producer had responded or not – but also still allowed for producer responses to be anonymous on the SurveyMonkey platform. This allowed for reminders to be sent through SurveyMonkey, while still preserving the anonymity of respondents. Ninety percent of the survey invitations sent via SurveyMonkey were completed, and 45 responses were ultimately gathered via email.

In addition to personalized invitations to take the survey, a webpage and an open survey link were also developed – so that producers who learned about the study and wanted to participate could navigate to the survey on their own, without an invitation. Information about the study and a link to the webpage and open survey were shared through a variety of producer networks, non-profits, and agencies: including the Farm Service Agency, the Okanogan Conservation District, Okanogan County 4H, the Okanogan Natural Resources Conservation Service (NRCS), Washington State University Extension, the Economic Alliance of Okanogan County, Tilth Producers of Washington, and the Initiative for Rural Innovation and Stewardship. A Facebook page was also developed for the study, which allowed the survey link to be shared widely across Facebook. In addition, with the help of the Producer Advisory Committee, approximately 30 fliers were posted at feed stores and other locations across the county where producers might see them. Small business cards with the website address and survey link were placed near the posters. Forty-three web responses were gathered from distinct IP addresses through the open survey link, although two were not sufficiently completed, and were discarded. One producer raising a small number of sheep responded to the open survey for cattle producers; and unfortunately, this survey had to be discarded.

Lastly, both outreach coordinator Kayla McIntyre and project manager Alyssa Jumars attended several events over the course of the spring. These events included a Cattleman's Appreciation Dinner; several Cattleman Association meetings; and the annual Verjaska Bull Sale. Attending these events provided an opportunity to share information about the study process, as well as to

distribute hard-copy surveys. Of the nearly two dozen hard-copy surveys distributed by mail and at events, seven surveys were returned.

SURVEY RESPONSES, BY MEDIA



*n = 92

Overall, this multi-pronged, multi-media approach proved highly effective. In all, 95 surveys were received, and 92 surveys were counted in the analysis (3 responses were insufficiently completed and were discarded). By comparison, the 2003 feasibility study administered 105 hard-copy surveys by mail, and received 23 responses. Our survey process was greatly aided by an organized outreach strategy, advances in social media, the general public's growing level of comfort with the internet, and the relative painlessness of completing online surveys.

1.3.2 OPPORTUNITY ASSESSMENT

The second component of the study focused on exploring the range of feasible opportunities to better serve the anticipated need. Alternatives initially considered included a small, brand-new plant; collaborative trucking to increase the efficiency and sustainability of using existing USDA plants outside the county; and the possible upgrade and expansion of an existing (custom-exempt) plant within the county.

A Brand New Plant for Okanogan County?

Some members of the Producer Advisory Committee were initially hopeful that the study process would determine that a small, modern, new, centrally-located plant was feasible. However, most models indicate that a minimum flow of 1,200 beef (or beef equivalents[16]) per year is necessary to sustain a small plant.

In most of the existing studies that explore the feasibility of constructing new, ***small-scale USDA plants in rural communities similar to Okanogan County, the costs for development range from***

[16] While there is some variation within the industry and among feasibility studies, for the purposes of this study, we consider 1 beef to be equivalent 2.5 hogs, 6 lamb, or 6 goats.

$1 to $1.5 million, or more.[17, 18, 19, 20, 21] These costs include the purchase of real estate; developing power, water, and sewer; excavation and site preparation; permitting; plant construction; and equipment.

Over the course of the study, an ***annual demand of approximately 685 beef equivalents was identified in the region***. Without the development of a larger brand, reaching the 1,200-mark seemed implausible. During the survey process, producer interest in a cooperative brand was measured. While the project team was extremely careful to design a survey about demand for slaughter among producers *with established markets* for farm-raised meat products, and to avoid any implication that future project implementation might include sales or marketing, we did include a question in the cow-calf producer survey regarding producer interest in a cooperative brand of Okanogan-raised beef products. Sixteen producers responded to the question, indicating they were potentially interested in a cooperative brand and would be willing to commit, on average, between 25 and 15 beef per year to the brand, at a price near $2/lbs live weight.[22] In light of these survey results, ***it would take 25 to 40 ranches committing to a cooperative brand, in order to provide a minimum flow of 600 beef per year, to make up the difference between current, identified demand and the necessary minimum demand to support a new processing facility.***

A more likely scenario would be for a handful of the largest ranches to work cooperatively to develop a consistent brand, with uniform genetics and production criteria. However, under this scenario, it would be more likely for these ranches to use one of the very large and efficient meat packing plants in the southeast corner of the state -- such as Agri Beef Co's plant in Toppenish, or Tyson Food's plant in Wallula, near Tri-Cities. These facilities are accessible only to ranches able to process beef at a certain scale, generally by the tractor-trailer load.

Moreover, a new plant posed a series of difficult questions that were beyond the capacity of this study's team to answer: ***Who would run a new plant? Who would own it? How would they pay for it?*** Producers were generally drawn to the idea of a new plant run by a cooperative of some kind. Project Advisor, Kathryn Quanbeck provided an overview of possible business models, including cooperative structures (see Appendix E). However, the recent lessons learned by the Livestock Processors Cooperative Association (LPCA) in Odessa, Washington were particularly impactful in guiding the team towards other alternatives.

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[17] Wendy Lockwood Banka. "Architectural and Business Plans for a Multi-species Meat processing, Aggregation, Storage, and Distribution Facility in an Urban Area." Might Fine Poultry Processing, LLC and ONESource Facility Solutions, 2018: articles.extension.org/sites/default/files/Final%20MFPP%20Report.pdf

[18] Food & Livestock Planning, Inc. "Business Plan for a New Small USDA Inspected Meat Processing Plant to Serve Local Livestock Producers." USDA Rural Development, 2011.

[19] Niche Meats Processor Assistance Network. "Options for Increased Processing Capacity in California's Central Coast Region." USDA Agricultural Marketing Service, 2015. (pg. 19)

[20] Arion Thiboumery. "Guide to Designing a Small Red Meat Plant." Iowa State University Extension, 2009.

[21] Lauren Gwin; Arion Thiboumery; Debra Garrison; Nick McCann. "Business Planning Guidebook." Niche Meats Processors Assistance Network, 2011.

[22] The *average* and *median* number of animals that producers would want to sell through a brand was 24 and 20, respectively. The minimum number of animals producers were willing to commit to a brand, regardless of possible high prices for calves, was 15 beef (this was both the *average* and *median*).

The LPCA is a multi-species, producer cooperative that opened a small, state-of-the art, USDA slaughter facility in Odessa, in 2013. Several producers in Okanogan County are members of the cooperative, and many Okanogan producers have used the facility during the last five years. Most producers report satisfaction with their experience at LPCA, but have often struggled to get an appointment, due to a series of plant closures. The LPCA launched on an accelerated timeline, and unfortunately made several miscalculations in their business plan as well as in the plant design. Some of LPCA's challenges have been the result of management decisions made cooperatively by livestock producers, with limited experience in the meat industry. While the LPCA is perhaps cresting that learning curve, their experience offers valuable lessons about producer-run cooperatives. According to a case study by the Washington State University (WSU) Extension, the LPCA has

> "not found the cooperative model to be entirely functional. They don't have great buy-in from the majority of members, just a select few. There has not been a strong understanding of cooperative principles by the members, many of which are used to operating as independent ranchers … To build trust, good communication, and create a strong cooperative structure usually takes a great deal of time."[23]

While a cooperatively-run plant in Okanogan might not represent a viable opportunity to serve small and medium producers in the immediate future, the study outreach revealed an eagerness among livestock producers to develop stronger connections with fellow farmers and ranchers, and to share knowledge and ideas about both production and marketing strategies. Future efforts could include the development of opportunities to develop stronger producer networks in Okanogan County, perhaps laying the foundation of what could someday evolve into a cooperative processing or marketing venture.

Improving Access with Collaborative Trucking

At the recommendation of the Producer Advisory Committee, the survey process also explored producer interest in some form of collaborative trucking. Encouraging producers to look into collaborative trucking has been a key suggestion made by the Niche Meats Processing Assistance Network (NMPAN) recently.[24] In the face of a plethora of studies that have concluded that most of the studied communities don't have adequate demand to support a new processing plant, NMPAN has suggested that producers explore the opportunity to alleviate the individual burden of transportation to existing USDA facilities by working cooperatively.[25]

In our survey, producers were asked if they would be willing to pay someone to haul their animals. The results were inconclusive. Only 16 producers indicated they would be willing to pay someone to haul their animals; 11 producers indicated they would really prefer to haul their own animals; and 10 producers said they would be willing to haul animals for others. While 75% of respondents to

[23] "Livestock Cooperative Producer's Association, Odessa, Washington." Cooperative Extension, June 22, 2017: articles.extension.org/pages/74355/lpca-plant:-odessa-wa

[24] Laruen Gwin, Daniel Marti, Rachel Johnson. "Slaughter and Processing Options and Issues for Locally Sourced Meat." Economic Research Service, United States Department of Agriculture, June 2012.

[25] Lauren Gwin and Kathryn Quanbeck. "The Economics of Local Meat Processing." The Ag Mag, Fall 2014: create.extension.org/sites/default/files/AgMag%202014%20Gwin%20%26%20Quanbeck.pdf

this question indicated a willingness towards collaborative trucking of some kind, only 38% of surveyed producers responded to this question. Given the inconclusive survey results, organizing transportation and coordinating slaughter schedules across Washington's geographically-largest county seemed unlikely to be a reasonable or profitable task.

However, the survey also asked if producers would be willing to pay someone to back-haul their meat, or if they would be willing to back-haul product for someone else. Fourteen producers indicated they would pay someone to back-haul product for them; and 12 producers indicated they would be willing to back-haul product for someone else. Producers were also asked if they would like access to long-term freezer storage; 32 producers responded positively.

Collaborative back-hauling does pose some concerns about product chain-of-custody that could be problematic for food safety concerns or for individual farms' product liability. Also of concern are possible head-aches for producers and processors alike, in the event of any miscommunication about the items being picked up for another producer. If these concerns could be addressed, ***and*** freezer storage/drop sites could be developed across the county -- there is real potential that a back-hauling and frozen storage service could greatly benefit producers.

While collaborative trucking or simply back-hauling of product could alleviate some of the burden to producers of having farm-raised meat products processed at USDA plants far from home, the problem of uncertainty remains. The closest and ideal plant under a collaborative trucking scenario would be the LPCA, in Odessa. However, recent producer experience has been that appointments can be extremely difficult to get for smaller member and non-member farms; that month-long or longer shutdowns have occurred without any warning to producers with scheduled appointments; and that the plant has often and inconsistently decided not to accept species other than beef, particularly during the busy harvest season. If the uncertainties of slaughtering at Odessa were reduced, collaborative trucking might be a more viable opportunity to solve the problem of limited access to USDA services.

Existing, Custom-Exempt Facilities in Okanogan County

The study focus quickly began to narrow to exploring opportunities to work with existing, WSDA-certified, custom-exempt, cut-and-wrap plants that might prove suitable for expansion to include USDA-inspected slaughter and processing.

In early March, project manager Alyssa Jumars reached out to all four of the existing, WSDA-certified, custom-exempt meat processors in Okanogan, as well as one former custom processor who was building a new facility[26]. All were invited to participate in the feasibility study, and to explore whether an expansion to include USDA-inspected slaughter might work for their business. One processor indicated he was content with the scope and size of his current operations; another considered the possibility in-depth, but ultimately decided his operation was more efficient without the addition of USDA paperwork and oversight; and one processor declined to return

[26] At the time he was contacted, Larry Brownlee was building a new facility for Okanogan Custom Meats. He had been forced to close, during the 2016-2018 seasons, after a prior facility lease was not renewed.

phone calls.[27] Two additional individuals who were each considering opening custom-exempt meat shops, one in the Methow Valley, and one in Omak, approached the study team, hoping to learn more about the study process and any opportunities to participate.[28] Ultimately, ***two existing processors agreed to participate in the study process: Thomson's Custom Meats, in Twisp, and Double S Meats, in Tonakset.***

In early April, a Washington State University (WSU) extension agent and PhD of meat science, Dr. Paul Kuber, agreed to accompany the project manager and several members of the Producer Advisory Committee on preliminary site visits to both Double S Meats and Thomson's Custom Meats. Assessments from these site visits were then brought to the Producer Advisory Committee. Based on the information and assessments provided by Dr. Paul Kuber, the Producer Advisory Committee quickly determined that the most feasible opportunity to serve the needs of producers was to work with Double S Meats, in Tonasket.[29] The Double S Meats facility is of new construction that already meets USDA specifications. Double S Meats operates under USDA-inspection for a wholesale cutting and distribution arm of their business that serves regional stores, restaurants, and catering companies. Tonasket is also in closest proximity to the majority of livestock raised in the county. Thomson's Custom Meats, in Twisp, presented several significant challenges to success: including an aging building, a long list of upgrades that would be required by the USDA within the facility, and a relatively far distance from the bulk of livestock producers in Okanogan County.

In late April, the project team hosted two additional consultants and conducted a second site visit and preliminary feasibility assessment of Double S Meats. Bruce Dunlop, of Island Grown Farmers' Cooperative, and Greg Sherman, a retired USDA inspector, visited the site with the project manager, outreach coordinator, and a member of the advisory committee. Bruce and Greg each brought different sets of experiences and perspectives, but they each determined Double S Meats to have a high potential for a successful upgrade and expansion to USDA-inspected slaughter and processing.[30]

Summary

It quickly became clear that the best, and possibly only viable opportunity to improve access to USDA-inspected livestock slaughter and processing for small and medium farms and ranches in Okanogan County was a facility expansion of Double S Meats, in Tonasket. Following the initial feasibility assessments, the study began to explore the technical and financial feasibility of adding USDA-inspected slaughter at Double S Meats. The project team also conducted a market analysis, drawing on findings about producer demand for USDA-slaughter services, as well as contextual market research on the opportunities for farm-raised, niche meats. Simultaneously, the project team worked to identify any potential barriers to the success of USDA-slaughter at Double S Meats.

[27] Thomson's Custom Meats, Twisp; Double S Meats, Tonasket; Superior Meats, Ellisforde; Okanogan Custom Meats, Okanogan; and Black Dog Meats, Brewster were all invited to participate in the study process.
[28] At the time, both Dusty Ravenstein and Lonnie Dixon were considering opening custom-exempt meat shops, and were interested in learning about the opportunity for USDA-processing.
[29] See Appendix A: Dr. Paul Kuber, Preliminary Feasibility Assessment, Summary Report
[30] See Appendix B and C: Bruce Dunlop and Greg Sherman: Preliminary Feasibility Assessment, Summary Reports

The rest of this report describes how feasibility was assessed within the context of a ***market analysis, technical analysis,*** and ***financial analysis***.

2.0 MARKET ANALYSIS

The following market analysis evaluates the market opportunity, as defined by the *demand among livestock producers for USDA-inspected slaughter services*. The producer survey, which reached 92 producers in Okanogan County is the source of data for this market assessment.

The survey process was careful to distinguish between 1) responding producers who already process farm-raised meats under USDA inspection, have established markets, and perceive opportunities for growth with increased access to USDA-slaughter services and 2) farms who express interest in USDA-inspected processing, but are currently processing only under the custom-exemption. ***The project team was especially careful to clarify, in the survey and in all outreach, that any future project implementation would likely only include slaughtering services, and would not include any sales, marketing, or brand development.***

Although fully assessing opportunities for coordinated marketing and sales was beyond the scope of this feasibility study, we did conduct a thorough evaluation of the ***regional context of consumer demand, trending product attributes,*** and ***evolving market opportunities*** for regional, farm-raised meat products. Through extensive outreach to farms, restaurants, stores, CSA's, food hubs, food distributors, farmer cooperatives, farmers' market associations, and research institutions, we found that consumer demand in the region for high-quality, niche meat products is growing, but that accessing the growing consumer base requires a strategic approach. *(See Appendix D for Kayla McIntyre's complete report.)*

2.1 SURVEY FINDINGS

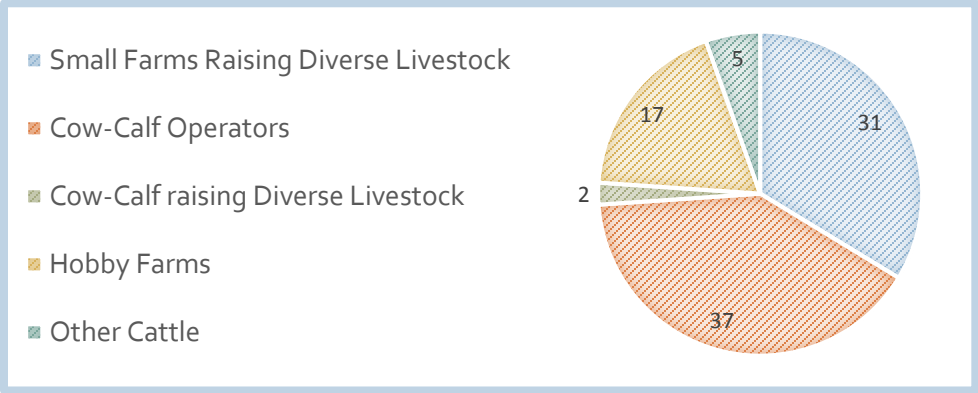
The survey received 95 responses, 92 of which were sufficiently completed to be utilized in the analysis. Of the ***92 responses***, 45 were received via email, seven by mail, and 40 through an open survey link that was shared via Facebook, through agency email listserves, on printed feed-store fliers, and on a temporary webpage.

There were actually ***two distinct surveys***, one for small farms raising diverse livestock (beef, pork, lamb, and goat), and another for cow-calf producers. The Producer Advisory Committee suggested that the distinct nature of these different types of operations necessarily required distinct survey questions.

Fifty responses were generated by small farms raising diverse livestock, including sheep, goats, pigs, and cattle. However, of those 50 responses, 17 came from extremely small farms raising a half-dozen animals for meat production, or less. For the purposes of this feasibility study, these very small operations were considered hobby farms that likely do not generate a significant source of household income from the production of livestock. While we evaluated the responses of these

hobby farms, there were a few questions for which the analysis removed their responses. Forty-two responses to the survey for cow-calf producers were collected, although five respondents indicated that they do not consider themselves "calf" producers. These five respondents do raise cattle and were able to respond meaningfully to the survey. Conversely, there were two respondents to the survey for diverse livestock operations who indicated they also raise between 60-100 calves, in addition to diverse livestock.

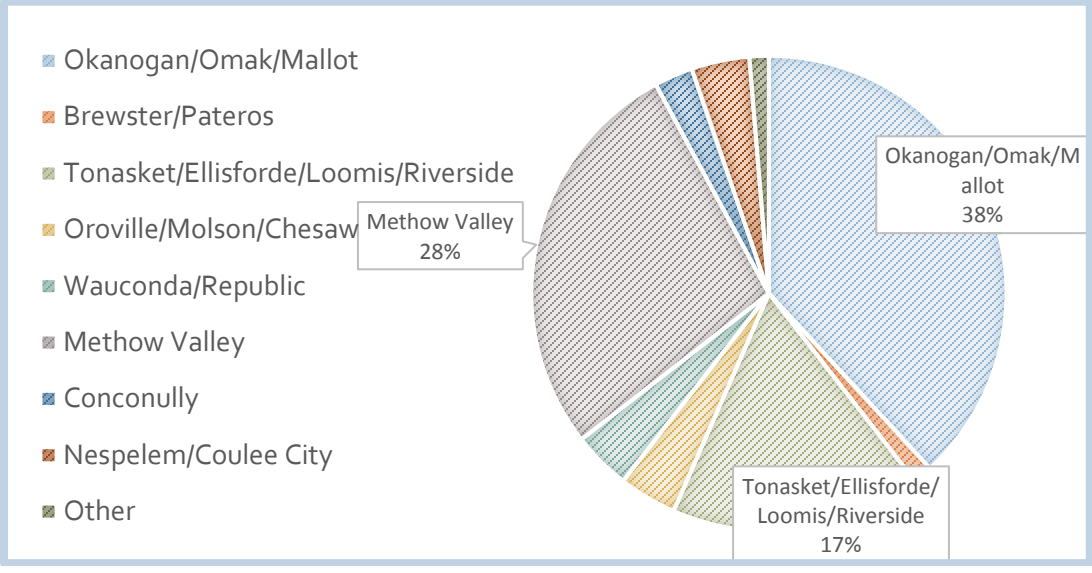
RESPONDENTS BY TYPE OF FARM OPERATION



*n = 92

Forty-one percent of respondents were small farms raising diverse livestock (including the five respondents to the cow-calf survey who produce cattle, but not calves, and the two respondents raising diverse livestock in addition to calves). Forty percent of respondents were cow-calf operators, and 19% of respondents had very small farm operations, or "hobby farms."

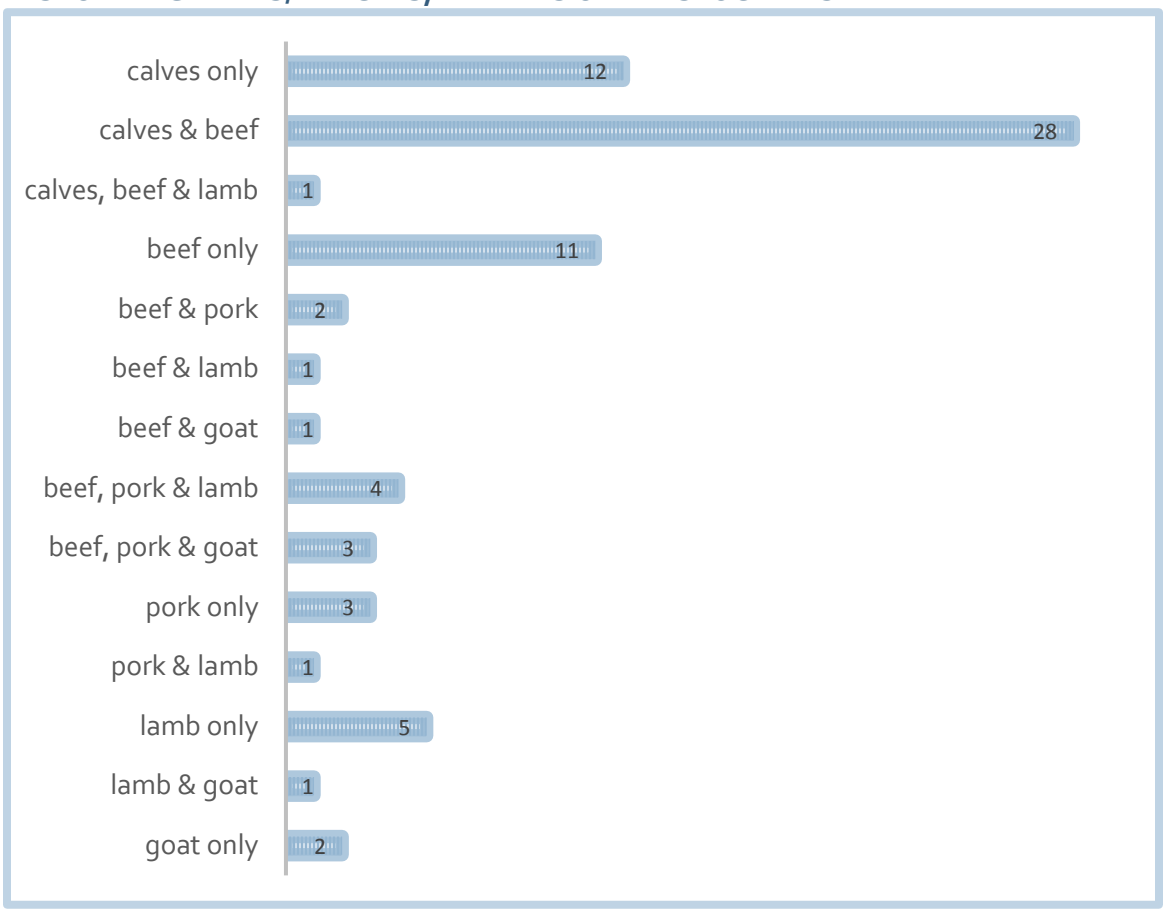
FARM/RANCH LOCATION IN OKANOGAN COUNTY



*n = 92

Survey respondents represented not only the diversity of types of operations, but also the geographic diversity of Okanogan County. Twenty-eight percent of responses came from the Methow Valley; 38% from the Okanogan, Omak, and Mallot Areas; 17% from the Tonasket, Ellisforde, Loomis, and Riverside Areas. Responses also came from the Brewster-Pateros area (1%); the Oroville-Molson-Chesaw area (4%); the Wauconda-Republic area (4%); Conconully (3%); and the Nespelem-Coulee City area (4%). It should be noted that the two members of the outreach team were located in the Methow Valley and just outside Okanogan, and drew on their personal relationships and local knowledge of farming networks to facilitate a high response rate in those areas. It should also be noted that while response rates from areas in the northern and eastern corners of the county were significantly lower, perhaps the greatest numbers of livestock are raised in these areas, especially relative to the Methow Valley.

RESPONDING FARMS/RANCHES, BY TYPES OF LIVESTOCK RAISED

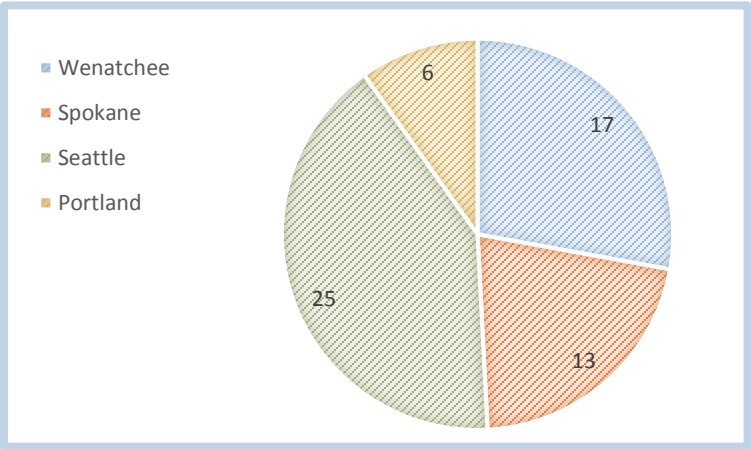


*n = 75
**Does not include hobby farms

Of the 92 respondents, 12 raise only calves, 28 raise calves and produce some finished beef, and 11 produce only beef. In other words, 55% of respondents are raising only calves and/or cattle, and no other species. Just over one-third of respondents are raising more than one species, and only 11% of respondents are raising only one species that is not cattle.

To look at the data a bit differently, the numbers of responding farms (not including hobby farms) engaged in raising pigs was 13 -- or 17% of responding small farms. The numbers of responding farms engaged in raising sheep was 12 -- or 16% of responding small farms. The numbers of responding farms engaged in raising goats was seven -- or 9% of responding small farms.

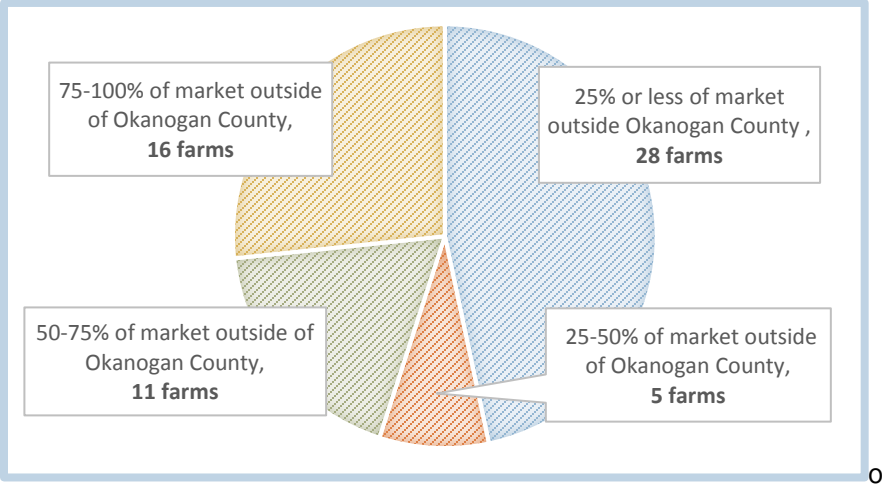
PRODUCERS SELLING TO REGIONAL URBAN MARKETS



*n = 61

Many producers are selling farm-raised meat products (both USDA-inspected and custom-exempt) in the Seattle urban markets, as well as the Wenatchee, Spokane, and Portland markets.

PRODUCERS WITH MARKETS OUTSIDE OF OKANOGAN COUNTY



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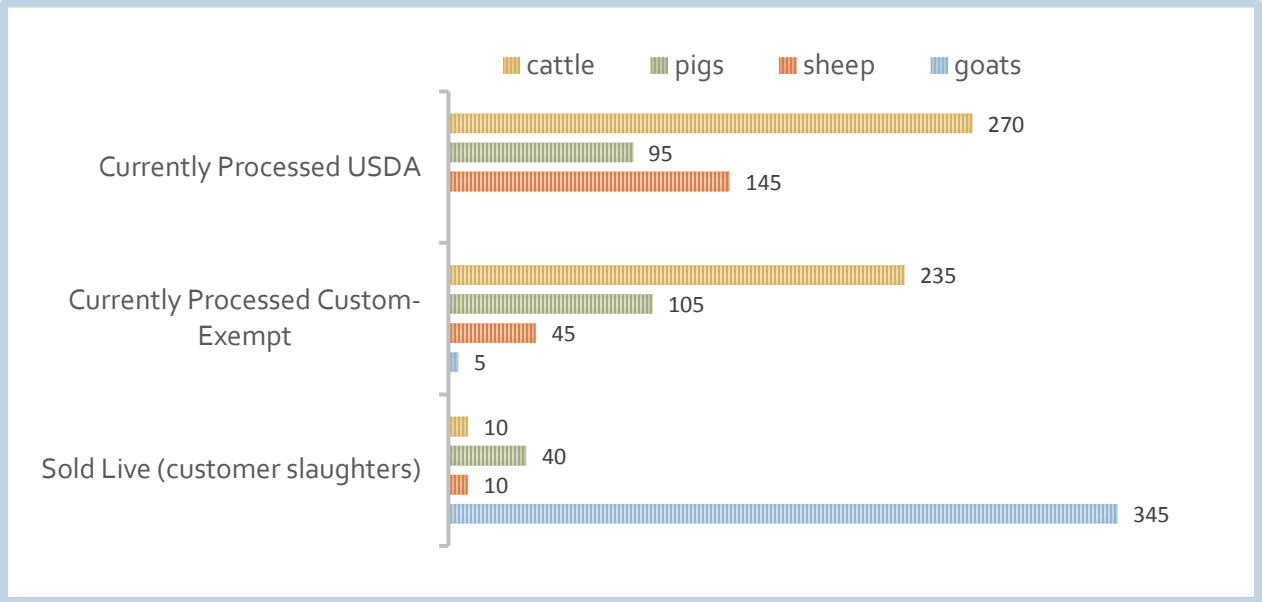
*n = 60

Forty-seven percent of respondents indicated they sell farm-raised meats predominantly within Okanogan County. Eight percent of respondents indicate that 25-50% of their market for farm-raised meats is outside of Okanogan County. Eighteen percent indicated that 50-75% of their market is outside of the county; and 25% indicated that over 75% of their market is outside of Okanogan County. The survey attempted to gather information about the importance of different

market avenues for each farm: individuals and families; restaurants; grocery stores; farmers' markets; and institutions. However, the data proved difficult to interpret.

NUMERS OF ANIMALS PROCESSED/SOLD ANNUALLY BY RESPONDENTS, FOR MEAT



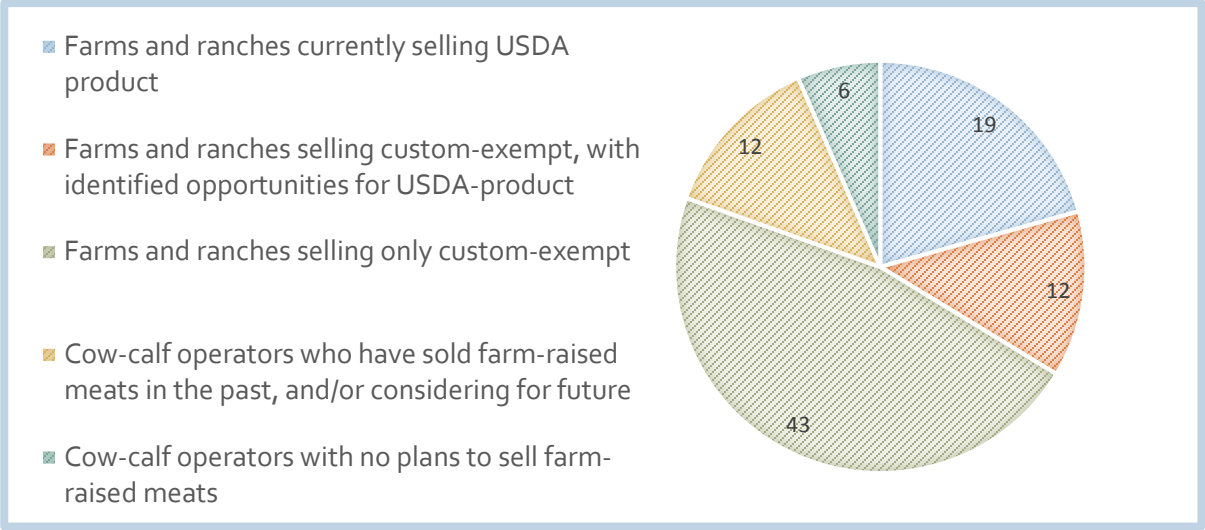
*n = 92

The numbers of cattle, pigs, sheep, and goats being processed and sold for meat each year under USDA-inspection by responding producers is approximately 270, 95,145, and zero, respectively. The numbers of cattle, pigs, sheep, and goats being processed and sold for meat under the custom-exemption each year by responding producers is approximately 235, 105, 45, and 5, respectively. The numbers of cattle, pigs, sheep, and goats sold live by producers to customers who conduct their own slaughter and butchering each year is 10, 40, 10, and 345, respectively. Of particular note are the producers raising and selling 345 live goats each year, who indicate they have extremely limited access to both USDA-inspected and custom-exempt slaughter, because most processors won't process goats on account of limited carcass size and therefore limited potential cut-and-wrap revenue. Producers indicate that they have identified strong market opportunities for USDA-inspected product, and would greatly prefer to sell processed meat, rather than live animals -- so that they can oversee the final step of the each animal's life and ensure a humane end.[31] Two producers indicated that access to USDA-inspected halal-slaughter would vastly expand their market opportunities.

[31] Interviews: Gary Walker, Darin McLaughlin, Carey Hunter.

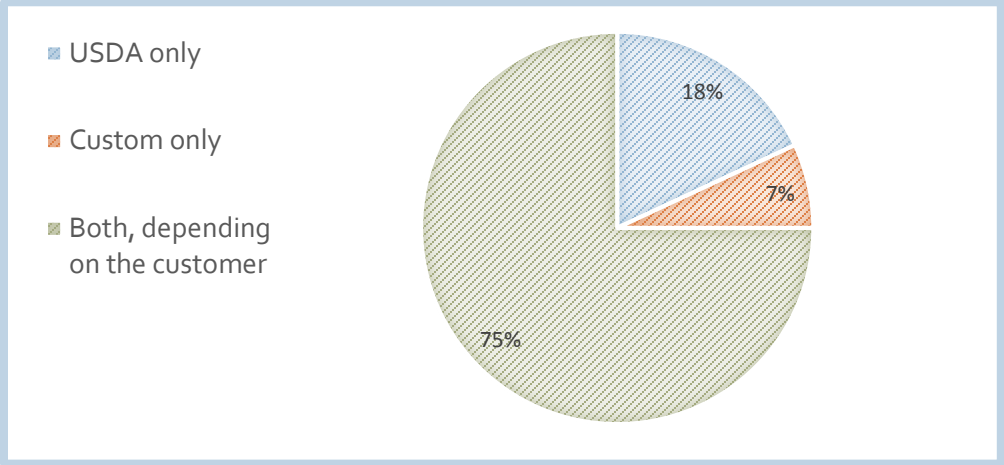
FARMS CURRENTLY PROCESSING USDA-INSPECTED OR CUSTOM-EXEMPT

* n = 92



Twenty-one percent of farms surveyed are currently selling farm-raised meats under USDA inspection, and an additional 13% of farms currently selling product only under custom-exemption indicated they have ready market opportunities for USDA-inspected product. Forty-seven percent of surveyed farms are currently selling only custom-exempt product. Thirteen percent of surveyed farms indicated they have either produced farm-raised meats in the past, or are considering it for the future. Six percent of surveyed farms, all of whom were calf producers, indicated they have never sold farm-raised meats and have no plans to do so.

PREFERENCE FOR USDA or CUSTOM-EXEMPT PROCESSING

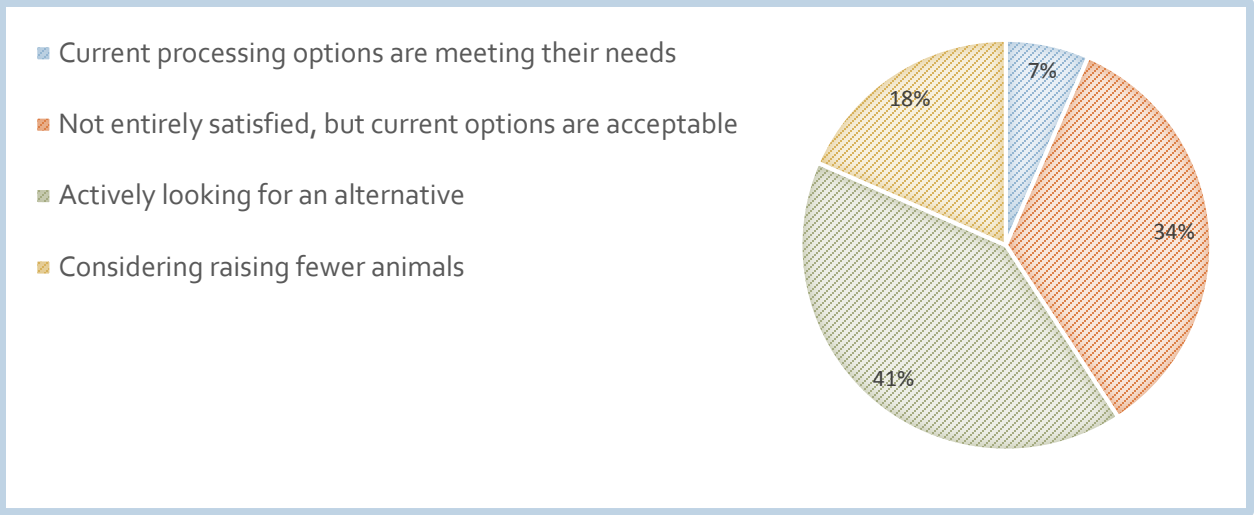


*n = 72

Ninety-three percent of all respondents indicated that they would like access to USDA processing. When asked if their preference was for USDA or custom-exempt processing, 75% of producers responded that they would like access to a facility that could do both, depending on the

end-customer of the product. Only 7% of respondents indicated that they wanted access to custom-exempt processing only, and 18% of respondents indicated they wanted access to USDA-inspected services only.

PRODUCER SATISFACTION WITH AVAILABLE OPTIONS FOR MEAT PROCESSING



*n = 76

We had expected to find a relatively low level of satisfaction among producers, given the anecdotal accounts that motivated this study. Of the responding producers, only seven percent indicated they are content with their current options for processing, and one-third indicated they are not completely content, but are making-do, for now. Forty-one percent of respondents indicated they are actively looking for a better alternative, and nearly 20% indicated they are considering raising fewer animals because they cannot find an alternative that meets their needs.

The responses to this question cannot necessarily be interpreted directly as indication that a USDA-inspected slaughter facility located within Okanogan County would alleviate the currently unmet needs of producers. The surveys were gathered from a mix of farms that currently process under USDA inspection, farms that process under the custom exemption but would like to process under USDA inspection, farms that would like to do both, and farms that wish to process only under the custom exemption. While we know that distance to existing USDA facilities is a big factor in satisfaction among producers with established markets and opportunities for USDA-inspected product, our survey was not designed to capture statistical information about the factors influencing satisfaction among producers whose preference is to process partially, primarily or solely under the custom exemption.

What we do know, from anecdotal accounts, is that producers processing under the custom exemption have struggled especially in the last 2-3 years to get appointments with WSDA-certified,[32] on-farm kill services. Generally, farms that process meat under the custom exemption

[32] On-farm kill services are required to inspected and certified by the Washington State Department of Agriculture (WSDA).

have their livestock slaughtered on-farm by a certified kill truck, and then delivered to the custom-exempt, cut-and-wrap shop as an eviscerated, headless, skinned, clean carcass. (Offal, heads, and hides typically remain on the farm.) Many producers prefer on-farm slaughter because the animal is never subject to the stress of being transported off-farm. Many producers and consumers alike consider that on-farm slaughter produces the best-quality meat, because the animal never produces adrenaline in response to stress, which can affect the flavor and quality of the end product.

In the last few years, there has been as few as one kill truck serving the entire Okanogan County, but rarely more than 2-3 conducting on-farm slaughter of the 800 or so beef that are raised for custom-exempt processing in Okanogan County each year.[33] We heard numerous accounts from producers that they either couldn't get a scheduled appointment with the kill truck, or they had an appointment scheduled, but the kill service simply didn't show up, or wasn't able to visit their farm until months later. For farmers and ranchers raising livestock, this kind of uncertainty can have a huge negative impact, including unanticipated feed costs or spoiled customer relationships with the end consumer.

However, we also know that limited kill-truck services are not the only limiting factor for custom-exempt processing. There has been a significant amount of turnover among the custom-exempt meat shops in the county. Currently, there are five WSDA-certified processors in Okanogan County: Double S Meats, in Tonasket; Superior Meats, in Ellisforde; Black Dog Meats, in Brewster; Thomson's Custom Meats, in Twisp; and Okanogan Custom Meats, in Okanogan. However, Superior Meats and Black Dog Meats are both fairly new and fairly small operations, processing only 100 or so beef and 100 or so hogs, each per year. Thomson's Custom Meats began scaling back their custom-exempt processing of farm animals significantly in the fall of 2016, and by 2017 was no longer accepting any farm animals. Okanogan Custom Meats temporarily shut their plant doors in 2016, due to a soured relationship between the plant operator and landowner. However, they are expected to re-open at new location in 2019.

While the focus of this study has been the need for improved access to USDA-inspected processing, we also clearly found that ***producers feel the need for improved, reliable access to on-farm kill and custom-exempt cutting services services is also unmet.***

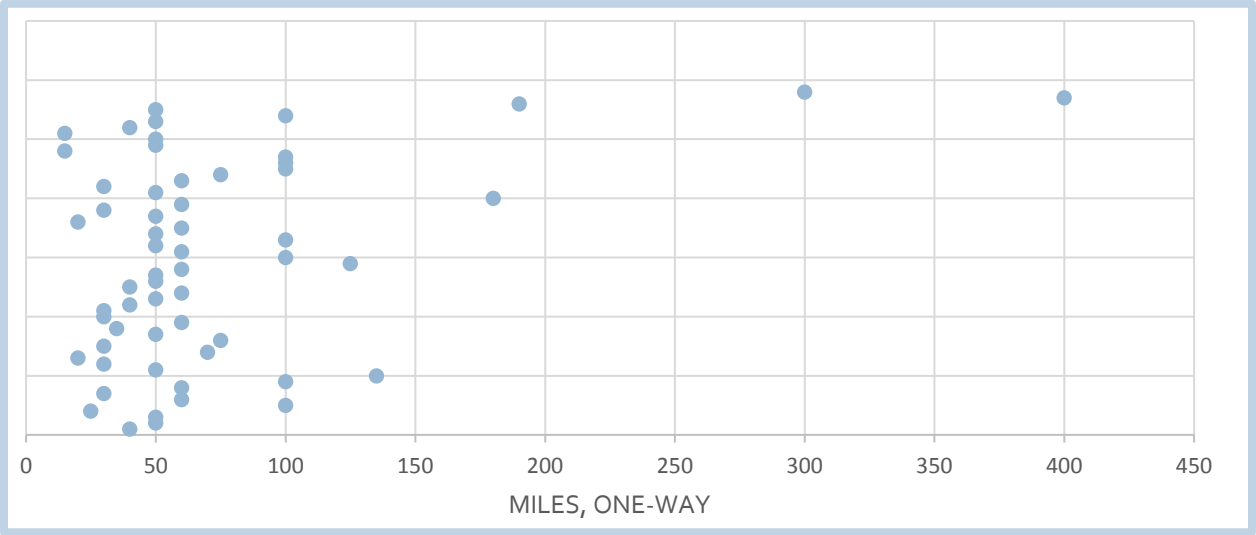
It is important to note, however, that ***producers' perception of limited availability of slaughter and processing appointments is not always shared by meat processors.*** While producers express frustration with the seeming unavailability of appointments, small meat processors express frustration that most producers want to slaughter and process animals during the same fall harvest window. While many meat processors are "slammed" from September through December, they find that business can be quite slow during the shoulder seasons.

While it is difficult to fully dissect the factors influencing each respondent's satisfaction with current processing options, we concluded that much of producers' frustration stems from

[33] We estimate that among Okanogan County's custom-exempt processors, an average of 800 head of beef are processed under custom-exemption each year. This estimate was derived through conversations with the various meat processors over the course of this study.

problematic ***scheduling*** and/or ***distance***. Quality of cutting services, affordability of services, customer service, and plant sanitation at the available plants are also important factors affecting producer satisfaction.

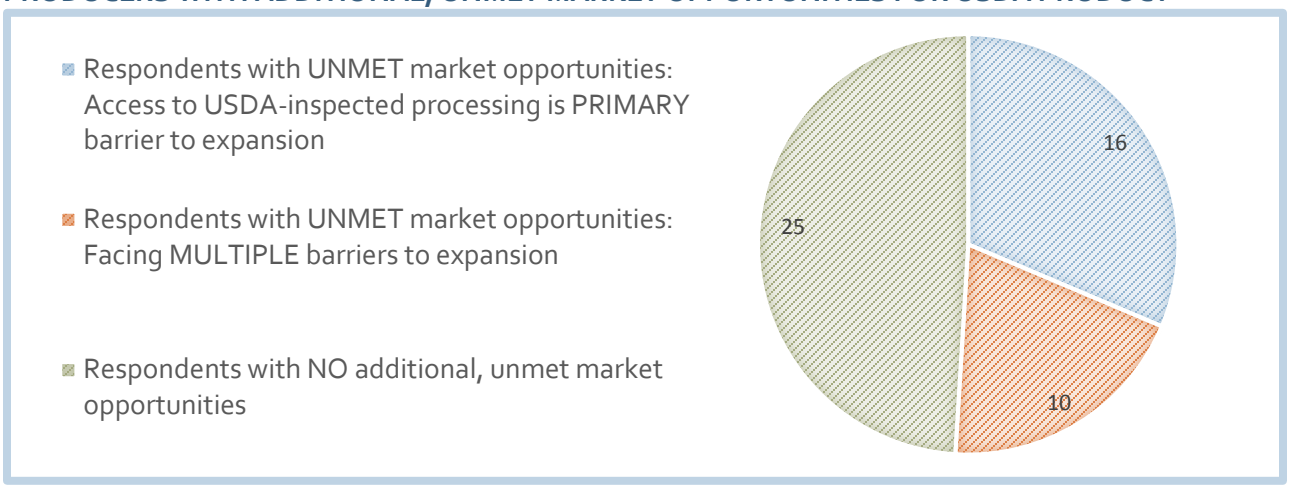
MAXIMUM, ONE-WAY DISTANCE PRODUCERS CONSIDER SUSTAINABLE TO ACCESS SLAUGHTER AND PROCESSING SERVICES



*n = 58

We asked producers what they felt was a maximum sustainable distance to travel for processing services. Responses from 58 producers (processing both USDA and custom-exempt), indicate that the average distance that producers feel is a maximum, sustainable distance to travel to access slaughter and processing is 71 miles, one-way (142, round-trip). When two outlier responses were removed (values = 400, 300), the average was 61 miles. ***Given that approximately 60 miles is considered by producers to be a maximum reasonable, one-way distance to travel for slaughter services, it is worth noting that, on average, producers who sell USDA-inspected product are traveling on average 135 miles, one-way (270, round-trip).*** In summary, we have concluded that many responding producers feel that their opportunities for growth are impeded by excessive travel distances and lack of schedule availability.

PRODUCERS WITH ADDITIONAL, UNMET MARKET OPPORTUNITIES FOR USDA PRODUCT

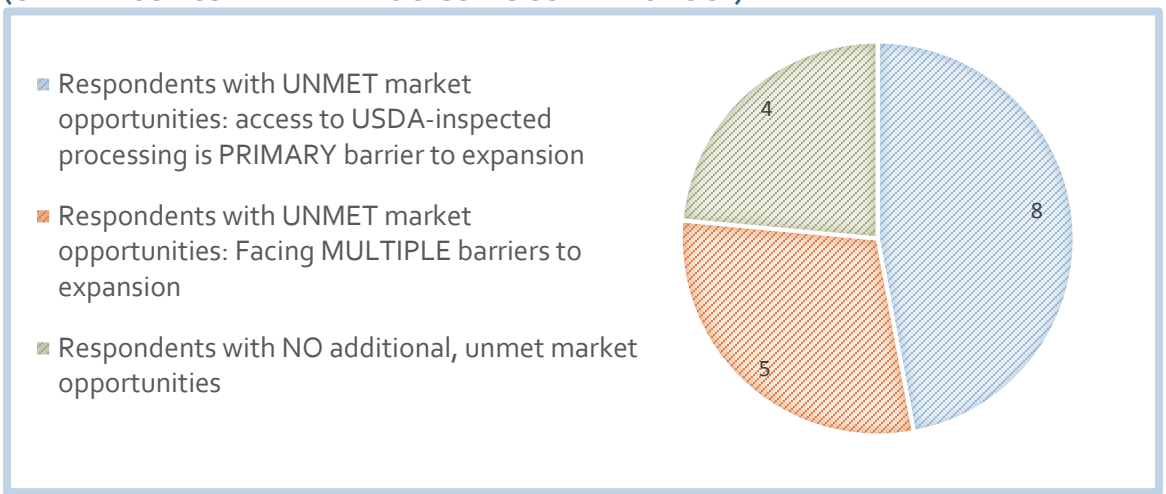


*n = 51

One of our survey questions asked: "do you have established market opportunities for USDA-inspected product that you are not fully able to serve?" Responses to the survey question included: "no, I have no additional market opportunities at this time;" "yes, but there are multiple barriers to expanding into those opportunities;" or "yes, and the primary barrier to growth into those opportunities is access to USDA-inspected processing." ***Thirty-one percent of respondents indicated that access to USDA-inspected processing is a primary barrier to growth.***

Interestingly, while we carefully framed the question to understand perceived opportunities within *established markets for USDA product*, 51 producers responded to this question, even though only 19 of the survey's 92 respondents indicated they are currently selling USDA-inspected product. When only the responses for producers currently selling USDA-inspected were analyzed, the distribution of producers responses to the same question were as follows:

PRODUCERS WITH ADDITIONAL, UNMET MARKET OPPORTUNITIES FOR USDA PRODUCT (ONLY THOSE CURRENTLY PROCESSING USDA PRODUCT)

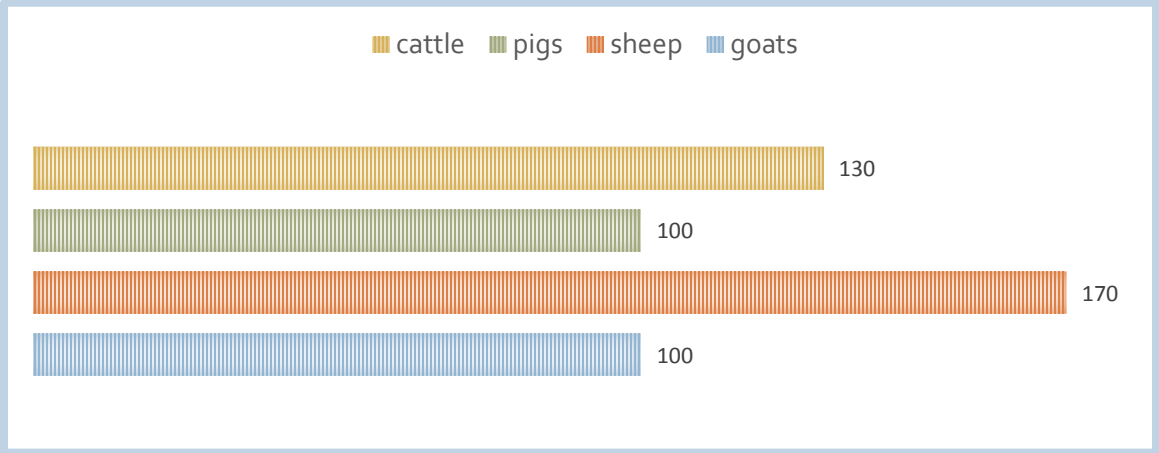


Four respondents currently selling USDA-inspected product do not have additional market opportunities beyond what they can serve; five respondents perceive additional market opportunities for USDA-inspected product but face multiple barriers to growth; and eight producers feel that the limiting barrier to expansion into existing market opportunities for USDA-inspected product is access to processing.

By comparing the two charts, we could conclude that there are an additional eight producers who do not sell USDA-inspected product at this time, but have cultivated potential market opportunities for USDA-inspected product. After taking a closer look at each of these eight survey responses, we found that with the exception of one farm, all of these producers are already selling significant amounts of farm-raised meat under the custom-exemption. We might conclude that ***these producers are ready to make the transition from custom-exempt markets to market opportunities where USDA-inspection is required, but are constrained by limited access to USDA processing***. This finding supports the premise that a USDA-inspected facility in the region would benefit small farms and ranches wishing to grow and expand their markets.

The following chart illustrates how many additional animals responding producers might raise to serve existing or identified market opportunities for USDA-inspected product, if the access to processing were improved.

ADDITIONAL ANIMALS PRODUCERS WOULD ANTICIPATE RAISING FOR ESTABLISHED MARKETS OPPORTUNITIES, IF USDA-INSPECTED PROCESSING WERE MORE ACCESSIBLE



* n = 51

Through the survey process, we have established that a very diverse and large pool of producers in Okanogan County perceives the need for improved access to slaughter and processing -- urgently. Eighteen percent of respondent are considering down-scaling their operations because of inadequate access to processing services, and 41% are actively looking for better, more sustainable options. Limited or uncertain access to slaughter and processing has a big economic impact at the farm level, and it should be no surprise that producers perceive this need as extremely urgent.

2.2 ESTIMATED DEMAND

An important part of the analysis has been to answer the question: ***just how large is the aggregated demand for USDA-inspected slaughter services in Okanogan County?***

As previously described, the survey process was able to determine the numbers of animals that responding producers are currently taking to USDA facilities in other parts of the state. We were also able to determine how many *additional* animals producers with established market opportunities would anticipate raising if access to USDA-inspected processing were improved:

	beef	pork	lamb	goat
Animals currently being processed under USDA inspection	270	95	145	--
Additional animals to be raised, for USDA market opportunities	130	100	170	100

A further consideration, given the limited availability of WSDA-inspected, on-farm, slaughter-truck services and the potential continued variability of existing custom-exempt plants, is the potential conversion of producers currently processing under the custom exemption. A conservative estimate is that 20% of the animals processed custom-exempt by *responding* producers might be processed under USDA-inspection if it were geographically convenient -- especially if scheduling were more reliable or transparent than currently-available, custom-exempt options. Given that 93% of responding producers indicated wanting access to USDA-inspected slaughter, a 20% conversion rate seemed realistic:

	beef	pork	lamb	goat
Animals processed custom-exempt by survey respondents	235	105	45	5
Approximate potential conversion from custom-exempt to USDA	50	20	10	n/a

Animals currently sold live is another potential source of demand for USDA-inspected slaughter. In particular, goat producers were extremely eager to have access to a slaughter facility that would accept goats. Many goat producers find themselves unable to access even locally-available custom-exempt processing, and resort to selling animal live to customers who are willing to do their own slaughter. Producers indicate that they would much rather sell processed meat and oversee the final step of each animal's life to ensure a humane end.[34] Several of these producers indicated that access to USDA-inspected processing would allow them to expand into market opportunities they have already identified – especially into diverse ethnic markets in Seattle.

	beef	pork	lamb	goat
Animals sold live, with likely producer preference for USDA slaughter	10	40	10	345

Lastly, there were a half-dozen cow-calf operators that indicated they don't currently sell finished beef products, but are seriously considering exploring farm-to-table opportunities. While there is admittedly a long road and a steep learning curve to develop a market for each ranch's niche

[34] Interviews: Gary Walker, Darin McLaughlin, Carey Hunter.

product, these six producers indicated they would like to finish approximately 80 beef per year, in total.

Cow-calf producers anticipating producing farm-raised meats in future	80 beef

Determining to what extent to use this number in estimating potential demand for USDA inspected slaughter is somewhat of a challenge. In outreach to small meat plants in our region, we have been advised to apply some skepticism to estimates from producers who are not currently and actively engaged in marketing farm-raised meats.

At the end of the day, it's also extremely difficult to know how many responding producers who indicated they are unsatisfied with their current options would ultimately utilize a new facility located in Tonasket. While scheduling and distances have proven to be the biggest hurdles for producers, we also know that there are many other relevant details driving producer preference. ***The influence of good communication and customer service, skill of cutting, labeling, and availability of value-added options should not be under estimated.***

What also is extremely difficult to determine is ***how much to extrapolate the survey's identified demand for USDA-inspected slaughter.*** If we were to utilize the most recent statistics from the USDA's Agricultural Census, we might conclude that we reached 92 of the 574 farms raising beef, pigs, or sheep in Okanogan County – in other words, only 16% of the farms potentially producing farm-raised meats in Okanogan County.

2012 AGRICULTURAL CENSUS

Inventory: Cattle/Calves	35,471
Farms: Cattle/Calves	**466**
Inventory: Sheep/Lambs	1,527
Farms: Sheep/Lambs	**75**
Inventory: Pigs	248
Farms: Pigs	**33**

However, we have assumed that the farms with the highest dissatisfaction with current available options and the greatest interest in using a local, USDA-inspected facility would have been motivated to respond to the survey. Based on further insights provided by the Producer Advisory Committee, we question whether the estimates provided in the 2012 Ag Census about the number of working farms in Okanogan County might be a little optimistic. Ultimately, we decided not to use a multiplier to estimate county-wide demand. Instead we evaluated the direct survey results, and also considered potential factors affecting the identified demand. Based on the survey results, based on outreach to small meat plants in our state, and based on discussions among the Producer Advisory Committee and "ground-truthing," our estimated potential demand for USDA-inspected process in Okanogan County and neighboring areas is approximately 500 beef, 300 pork, and 400 lamb or goat -- or 685 beef equivalents:

	beef	pork	lamb & goat
Estimated Potential Demand for USDA-inspected processing	500	300	400

Additional Factors Affecting Identified Demand

We acknowledge that the potential demand estimates could be affected by a variety of factors. We clearly did not reach all producers in Okanogan County, although we believe that respondents may have been self-selecting and that those motivated to respond to the survey are those most interested in accessing USDA-inspected processing.

Factor	Affect on demand
Okanogan County producers ***not*** reached in the survey wanting USDA processing	↑
Producers in neighboring counties wanting to use a USDA plant in Tonasket	↑
Double S Meats' ability to offer desired value-added processing	↑
Future technical assistance provided to producers to help develop new market opportunities	↑
Future development of a private or cooperative brand for small-and-medium Okanogan ranches	↑
Producers reached in the survey, who may choose to continue using other processing options	↓
Future fluctuations in the calf market (higher prices for calves result in fewer finished beef)	↓

It is difficult to know how much of the demand we identified for USDA-inspected processing would ultimately be served by Double S Meats. Some number of the producers reached in the survey will undoubtedly elect to continue using their currently-available options, and won't shift their business to a facility at Double S Meats. ***At the end of the day, distance and scheduling are only two of multiple factors affecting how producers decide where to process their meat. Double S Meats will need distinguish itself from other small plants in eastern Washington – with excellent communication and customer service; with strategic value-added processing; and by accepting species that other plants do not prioritize.***

A "next step" beyond the feasibility study that was extensively discussed by the project team and Producer Advisory Committee was the potential to develop workshops for livestock producers, to help them identify and target niche markets for farm-raised meat products. In particular, the research conducted by Kayla McIntyre about the regional, consumer market context illuminated some of the evolving opportunities for small farms, as well as the need for strategic efforts in a market place that is experiencing a significant amount of competition and some saturation. (See Appendix D.) The Producer Advisory Committee suggested that providing resources and workshops to build producers' knowledge of the market opportunities and challenges could ultimately result in expanding production and increased demand for USDA services at Double S Meats.

While the development of an Okanogan-raised brand was beyond the scope of the study, we did determine that there is some interest among producers to explore the opportunities in a cooperative brand – or to explore potential collaborative efforts to target institutional markets. While these opportunities would take years and dedicated effort to develop, they do represent a potential for increased demand for USDA-inspected processing.

Based on accounts from USDA plants in other parts of the state, small plants typically draw from 4-5 counties. However, Okanogan County is bordered to the north by Canada, and bordered to the west by the Cascade Mountains, over which the primary pass is closed between the months of November and May.[35] That said, a USDA plant in Tonasket could reasonably expect to draw producers from Ferry, Douglas, and Chelan Counties. Based on some limited outreach to Ferry County, we believe that livestock producers from the Republic area would be extremely likely to use a facility located in Tonasket.[36] How far producers are willing to travel from other counties will be determined by Double S Meats' ability to offer good customer service, certain value-added processing, and processing for diverse species. Producers in neighboring counties are in closer proximity to the established USDA plants in Moses Lake, Odessa, and Chewelah – so offering an excellent customer experience, as well as strategic value-added processing would be necessary to access the potential demand from neighboring counties.

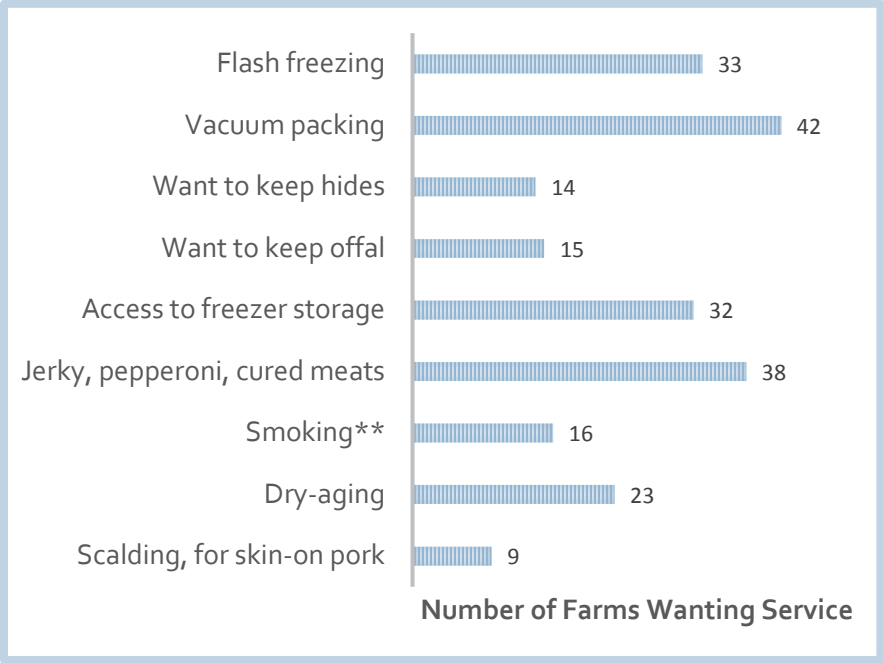
Desired Value Added Services

In the survey, we asked producers a number of questions about the types of services they would want in a USDA facility. This included flash freezing, vacuum packing, cured meats, and dry-aging. We also asked producers whether they would want access to long-term freezer storage for their products, and if they would want hides or offal returned to them. Of particular note are the number of producers who indicated they wanted access to ***smoking*** and ***scalding*** for skin-on processing for pork. (We should clarify that we did not ask respondents to the cow-calf producer survey if they wanted access to scalding or smoking.) Seventy-five percent of the 13 producers raising pigs indicated they wanted access to scalding, and all of them indicated they wanted access to smoking services. ***For Double S Meats to increase production in the shoulder seasons,*** outside of the traditional months for beef harvest (September thru December), ***it would be important to consider opportunities to increase services that would entice producers of pork and lamb, who generally have more flexibility in slaughter seasons.***

[35] Washington Pass, which is located on Highway 20 and separates a major corridor between Okanogan County and the western part of the state, is closed during the winter months, due to avalanches. During the winter, producers must travel an extra 1-2 hours, over Stevens Pass or Snoqualmie Pass, to reach markets on the western side of the Cascade Range.

[36] Conversations with Trevor Lane, WSU extension agent for Ferry County, and Mary Ciais, Forsee Ranch, Republic.

SPECIAL SERVICES DESIRED BY PRODUCERS



* n = 67
** Smoking and Scalding were not responses offered in the cow-calf producer survey

Notes About the Data

There are, of course, always concerns with anonymous responses. Just under half of the surveys were completed anonymously. Each survey was reviewed for consistency and plausibility. In some cases, respondents had indicated they were willing to take follow-up questions about the survey, which allowed the survey team to resolve questionable responses. However, there were some responses to individual questions from anonymous respondents that seemed inconsistent – and these were not included. Of the surveys collected by the open survey link, three were discarded for incompleteness. Because SurveyMonkey allowed for tracking IP addresses, we are confident that none of the surveys were duplicates.

At the time the survey was launched, Double S Meats had not been identified as the best opportunity to serve the needs of producers. If the survey had been launched after the possibility of working with Double S Meats had become clear, it would have been possible to ask the direct question: if Double S Meats offered USDA-inspected slaughter and processing -- would you be likely to use them? This would have allowed the survey to be more concise, and it would have allowed producers to feel they were responding to more concrete, tangible questions. The timeline was admittedly unfortunate. As a result, the survey was only able to gather information about producers' general level of satisfaction with existing processing opportunities and information about their experiences with existing plants. While we can generally surmise from these responses that many producers would be eager to use Double S if they offered USDA-slaughter, we unfortunately lost an opportunity for a more accurate and precise analysis.

3.0 TECHNICAL FEASIBILITY

As described previously, the project team's exploration of feasible opportunities to meet the need for improved access to USDA-inspected livestock processing ultimately narrowed to assessing the suitability of existing, custom-exempt meat plants in Okanogan County. All five custom-exempt meat processors in the county were invited to participate in the study process, and two accepted the offer: Thomson's Custom Meats, in Twisp, and Double S Meats, in Tonasket.

A series of initial site and facility assessments were conducted in April, to determine overall feasibility of each custom-exempt processor. WSU Extension agent and PhD of Meat Science, Dr. Paul Kuber, conducted site visits to both Double S Meats and Thomson's Custom Meats, and provided an initial assessment.[37] Dr. Kuber's assessment concluded that bringing the Thomson's Custom Meats facility up to USDA standards would be prohibitively expensive due to the age, construction, and disrepair of the facility. He concluded that Double S Meats presented a significantly more viable opportunity, given that the facility was recently constructed (2013) to USDA specifications, and given that Double S Meats was already conducting wholesale cut-and-wrap under USDA-inspection.*

> *Many custom-exempt butcher shops have a **USDA retail-exemption**, which allows them to purchase USDA-inspected meat (in primals or quarters), and sell specialty cuts direct-to-consumer at their on-site retail counter. The USDA retail-exemption does **not** allow custom-exempt butcher shops to sell wholesale cuts or cured meats to restaurants, catering companies, or other retail outlets. Double S Meats, on the other hand, is inspected by the USDA for wholesale cut-and-wrap. This means that their cut-and-wrap facility is inspected to USDA standards, that they have a Food Safety Inspection Service (FSIS) inspector *on-site* while they are processing wholesale cuts, and that they can sell wholesale products to stores, restaurants, and other outlets.

After a decision by the Producer Advisory Committee to focus the study's efforts on Double S Meats alone, the project team conducted a second preliminary site assessment. Two industry consultants, Bruce Dunlop, of

Contributing Expertise:

Dr. Paul Kuber is livestock extension agent for Washington State University (WSU) and a PhD of meat science. Dr. Kuber conducted an initial site and feasibility assessment for both Thomson's Custom Meats and Double S Meats. *(See Appendix A for summary report.)*

Bruce Dunlop is a livestock producer and member of Island Grown Farmer's Cooperative. He helped to develop and build one of the first USDA-inspected mobile slaughter units for red meat species and has since consulted on various MSU projects and small plant feasibility studies. Previously, he was a chemical engineer in the bio-ag and food industries. Dunlop conducted a second site visit and initial feasibility assessment of Double S Meats. *(See Appendix B for summary report.)*

Greg Sherman is a retired FSIS inspector of 30 years experience in public health and food safety, with a focus on humane handling and slaughter of livestock, as well as HACCP protocols. He currently consults for small meat plants across the country, through GSC Northwest HACCP Consultants. Dunlop conducted a second site visit and initial feasibility assessment of Double S Meats. *(See Appendix C for summary report)*

[37] See Appendix A.

Island Grown Farmers' Cooperative, and Greg Sherman, a retired FSIS inspector for the USDA, provided their expertise. In each of their summary reports, Dunlop and Sherman indicated Double S Meats to have a high potential for success in an expansion to USDA-inspected slaughter and processing.[38] Following this second optimistic assessment, the study began to focus on evaluating in greater detail: the ***market feasibility***, ***technical feasibility***, and ***financial feasibility*** for an expansion at Double S Meats.

One particularly interesting opportunity that developed over the course of the feasibility work was the ***chance to acquire a used, discounted Mobile Slaughter Unit (MSU)*** from a non-profit in Stevens County, a northeast county of Washington. The Community Agriculture Development Center (CADC) of Colville is a non-profit that purchased a MSU with the help of WSU Extension and a grant from the USDA's Rural Business Development Grant program. The CADC leased their MSU to a private operator, S&K Meats, for a period of over 10 years. Shane Nelson, of S&K Meats, operated the unit in conjunction with Smokey Ridge Meats, a small meat shop in Chewelah, Washington that was able to do both custom-exempt and USDA-inspected cut-and-wrap. Due to changing circumstances and ownership, Smokey Ridge Meats purchased their own MSU in 2017 and Shane Nelson relocated his business to another part of the state. As a result, the CADC found themselves with a MSU that was going unused, and they decided to develop a "Request for Proposal" process to see the unit put into service in another rural community in North-Central Washington.

At the suggestion of Dunlop, Sherman, and Quanbeck, the project team began to explore the feasibility of Double S Meats, or of a collaborating non-profit such as TwispWorks or the Methow Conservancy, acquiring the CADC's MSU as ***an intermediary step to test assumptions about the demand for USDA-inspected processing*** in the region and to inform future efforts to build a more permanent kill floor at Double S Meats. Given Double S Meats' concern about over-extending

Contributing Expertise, cont'd:

Natasha Moffit-Hemmer is a masters candidate at the Washington State University's Animal Science program, and was recently hired as an agent for Okanogan County's WSU extension office. Her research has included pre- and post- harvest livestock management, food safety, and meat quality and yield; safety and development of processed meat products; improving efficiency and sustainability in livestock production; humane and low stress livestock handling and production. Moffit-Hemmer offered her insight throughout the course of the study process.

Kathryn Quanbeck worked for the USDA as a livestock economist, and later for the Niche Meats Processor Assistance Network. She has consulted on over three dozen feasibility studies for small to medium scale meat processors in communities across the West. Quanbeck served as a project advisor through the study's entirety.

Shane Nelson successfully operated a USDA-inspected MSU for 12 years in Chewelah as S&K Meats. He has consulted regionally for livestock producers and small niche meat processors. Nelson contributed to the project's assessment of financial feasibility, as well as potential site design.

[38] See Appendix B and C.

their small, family-run business on well-informed, but un-tested assumptions, exploring a relatively low-cost, low-risk, intermediary option seemed truly ideal.

The study progressed, focusing on the feasibility of offering USDA-inspected slaughter at Double S Meats, using a USDA-certified, "permanently-docked" MSU. In June, the feasibility project contracted with Shane Nelson, consultant and former operator of the CADC's MSU. Nelson offered cost estimates for site development to create a docking station for the MSU. Nelson also developed a series of profit-and-loss scenarios for slaughter, based on his extensive, hands-on experience operating a MSU, and based on the estimated potential demand for USDA services in Okanogan County.

The following assessment of technical feasibility explores the ***infrastructure components*** necessary for the addition of a USDA kill floor at Double S Meats: in particular, the site needs to become a "permanent docking station" for a Mobile Slaughter Unit (MSU). Also addressed are potential ***regulatory and permitting requirements***.

3.1 INFRASTRUCTURE NEEDS

In general, primary components necessary for the expansion of any meat facility are access to sufficient ***electrical utilities for refrigeration; access to potable water; and adequate wastewater handling capacity***. To become a "docking station" for an MSU, the Double S Meats site would also need a concrete kill pad, animal holding pens, and additional refrigerated capacity. Special consideration would need to be given to flow and design for humane handling, as well as operation during winter conditions.

Double S Meats has 3-phase power on-site and an electrical panel that can accommodate expanded refrigeration needs. Double S Meats' current refrigeration capacity would not be adequate to handle increased production, although they might be able to accommodate increased production in the first year or two by adding a drip cooler for cooling "hot" carcasses. This would allow the existing hanging cooler to be packed more tightly. At optimum production, Double S Meats estimates they will need an additional 400 square feet of hanging cooler space. They also anticipate needing more freezer space, and may like to offer long-term freezer storage to customers. Lastly, they will need expanded capacity for holding offal and rendering.

ADDITIONAL REFRIGERATION NEEDS

Drip Cooler	300 sq ft
Additional Hanging Cooler	400 sq ft
Additional Freezer Storage	350 sq ft
Offal Cooler	150 sq ft

Double S Meats is already connected to Tonasket city water. ***Wastewater handling, however, is a component that will need additional research.*** Double S Meats' current septic system can accommodate 360 gallons per day. Based on past efforts to meter water use on the cutting floor, Double S Meats estimates that water usage at the facility is approximately 120 gallons per day,

which includes a daily wash-down of the cutting room and equipment. Based on estimates provided by both Bruce Dunlop[39] and Shane Nelson,[40] we anticipate that Double S Meats would use approximately 400 gallons of water for each day of slaughter. This would exceed the septic system's daily capacity. However, it is most likely that slaughter will be conducted 3 days per week, at most, and that wastewater could be captured in a temporary holding tank. This temporary, 1500-gallon holding tank would also allow for pre-filtering of hair, large particles and grease, enabling Double S Meats to reduce the Total Suspended Solids (TSS) and Biological Oxygen Demand (BOD) load to the septic system. The holding tank would also allow wastewater to be pumped slowly into the existing septic system.

	Daily (gallons)	Weekly (gallons)
Water used in cutting room	120	600
Water used on kill floor (MSU)	400	1,200
Septic capacity	350	2,450

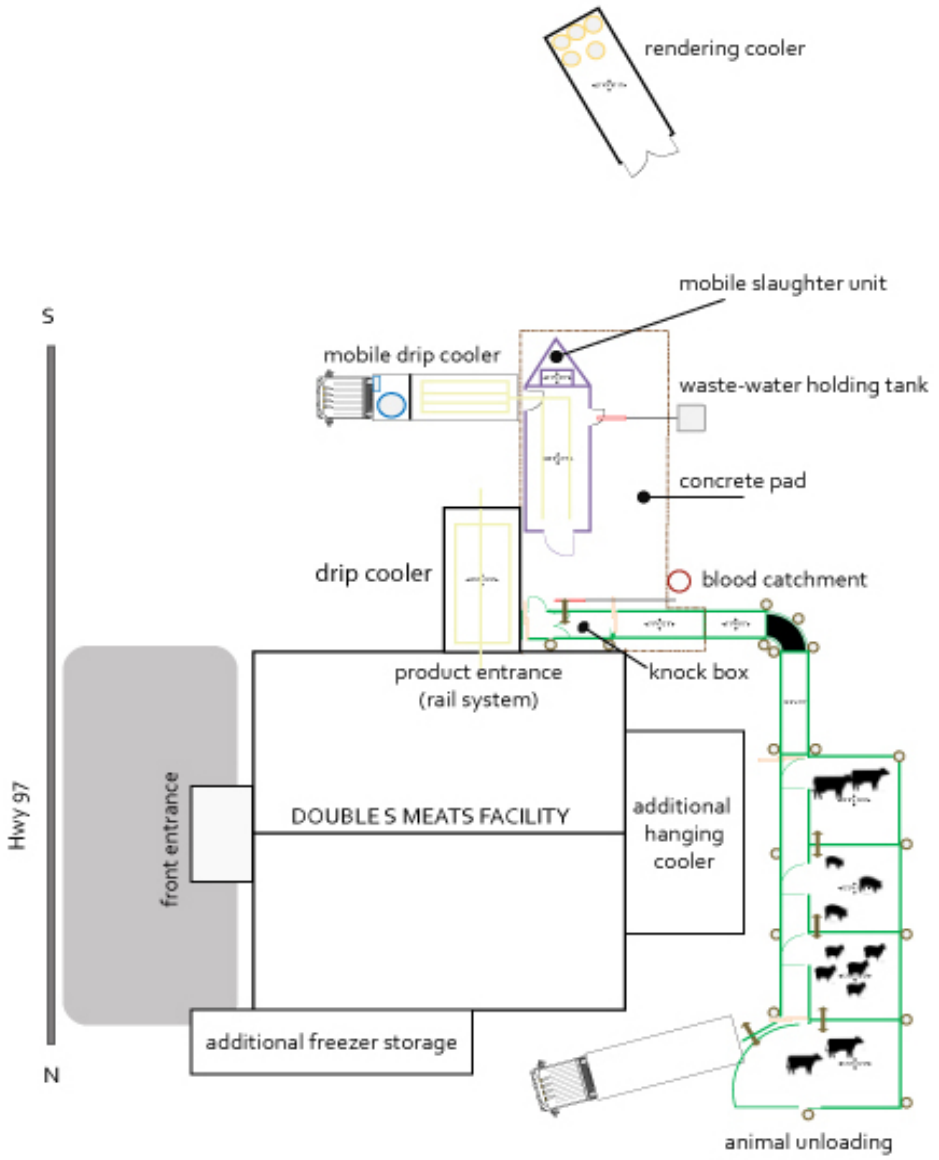
Wastewater from slaughtering and facility cleanup is characterized by high levels of fats, proteins, manure, and other solids in both particulate and dissolved form. Levels of BOD and TSS, nitrogen, phosphorous, coliforms, and other pathogens can vary, depending on process and mechanisms for capturing waste. NMPAN has reported values of 150 ppm BOD and 58 ppm TSS for a similar, small plant in Washington State.[41] Further research is needed to determine an appropriate filtration and possible chemical treatment process, and to determine acceptable levels of BOD and TSS for both inflow and outflow of the current septic system. Plant owner, Gavin Pratt, made initial outreach to the Okanogan County Department of Public Health, but at the time of writing of the final report, had not been able to discuss possible septic upgrades in detail with the department.

In the event that an upgraded septic were to prove prohibitively expensive, a holding tank could be used and pumped weekly by a pumping service. Double S Meats could even consider purchasing an inexpensive flatbed truck and tank, to deliver transport wastewater to the Tonasket sewer treatment plant. This intermediary alternative would allow Double S Meats to await the arrival of expanded town sewer services, which are expected to reach their site in 2-3 years.

Docking Station

The biggest challenge with accommodating slaughter at Double S Meats is the limited, buildable area. The available footprint for a docking station is highly constrained by property boundaries and by topography. The following design developed by Shane Nelson provides the necessary components of a docking station, despite these constraints.

[39] The Island Grown Farmers Cooperative MSU has a 400-gallon on-board water tank that is used for washing carcasses and for equipment cleanup at the end of the day. The MSU typically processes 8-10 beef per day.
[40] While he operated a MSU at Smokey Ridge Meats, in Colville, Shane Nelson estimated using approximately 400 gallons per day, or less.
[41] Shermain Hardesty; John Harper. "Mendocino County Meat Plant (MCMP) Study." University of California Agriculture and Natural Resources, Cooperative Extension, 2013: http://edfc.org/wp-content/uploads/2014/02/Meat-Study-Final-Report-2013.pdf (page 26)



Animal Holding Pens

Animal holding pens would need to allow for separation of each species, and ideally separation by ownership when possible. One pen would need to be able to serve as a clearly-marked "suspect pen" in the event that an animal exhibits signs of illness. The animal holding pens would ideally be covered, as would the walkways and outdoor kill pad – for the comfort of livestock, as well as for the efficient and safe operation of slaughter during the winter months. Pens and walkways would not necessarily need to be concrete, but would need to provide adequate footing for the animals and would need to be easily and routinely cleaned to reduce odors, runoff, and flies. Shane Nelson indicated he cleaned animal holding pens on a weekly schedule, with a tractor bucket.

Both Double S Meats and the Town of Tonasket are in agreement that animal holding pens should also be screened from view of Highway 97. Their suggested placement is on the west side of the building, opposite the highway. One of the conditions established by the Town of Tonasket for a

Conditional Use Permit for slaughter includes adequate setback from neighboring residences. Animal holding pens must be least 100 feet from a neighboring residence. The town would allow animal holding pens to be as close as 50 feet to the nearest residence, provided that a privacy fence were erected along the property boundary. The slaughter pad would need to located 100 feet or more from the nearest residence.

Kill Pad

The suggested concrete pad would be approximately 20 by 20 feet. The MSU would be parked with the trailer door opening toward the knock box. Once loaded into the knock box, the animal would be killed with a captive bolt gun. The animal would then be tipped out of the knock box and bled on the concrete. Blood would be captured by a special drain in the concrete pad and diverted into a catchment drum. Once bled out, the animal would be drug inside the MSU with the on-board wench. Once inside the unit, the hide, head, and entrails would be removed; and finally the carcass would be broken into halves or quarters.

Highway 97 runs parallel to the east side of the building, so shielding the slaughter pad from public view would be essential. In the site plan developed by Shane Nelson, the kill pad would be screened by the addition of a strategically-placed drip cooler. Any additional needs for a visual barrier could be achieved with concrete ecology blocks.

Drainage on the concrete pad would need to be carefully designed and managed, to prevent nutrient-rich runoff or erosion to the hillside abutting the west side of the proposed slaughter area. Further research with the Okanogan Department of Health will be needed to determine how wastewater from the cleanup of the outdoor kill pad might be captured and handled differently than storm water.

Water used inside the MSU, for carcass processing as well as end-of-day cleanup, would be captured and diverted to a 1,500 gallon holding tank on the west side of the kill pad. Wastewater would then be pumped, at a determined daily rate, into the facility's septic system with a sump pump. The holding tank would allow for some filtration and possible chemical treatment, thus reducing the Total Soluble Solids (TSS) and Biological Oxygen Demand (BOD) load to the septic system. Further research and communication with the Okanogan County Department of Health will be needed to better understand a suitable pre-treatment protocol.

Humane Handling

The precise techniques for humane handling and slaughter were beyond the expertise of the study team and beyond scope of this study. However, through the study process, it became abundantly clear that humane handling of animals in the final stage of their life is of critical importance to producers – and that ***the success of Double S Meats will depend heavily on producers' perception of humane animal handling and well-designed holding pens, walkways, knock box, and kill pad***. Double S Meats would need to consider how the alleys, sight lines, footing, and protection from the elements affect each species' safety and comfort while awaiting slaughter. The study team recommends that Double S Meats refer to methods recommended by ***Temple Grandin***[42], and take

[42] Comprehensive guidelines for humane slaughter can be found on Temple Grandin's website: www.grandin.com

advantage of the expertise and resources available through Washington State University's Animal Science and Extension programs when considering facility design, as well as slaughter protocol.

Mobile Drip Cooler & Additional Drip Cooler

The slaughter unit belonging to the Community Agriculture Development Center (CADC) has an associated mobile drip cooler, on a tractor-trailer. The unit has built-in rails and can hold carcasses from one full day of slaughter.[43] At the end of the work day, the mobile drip cooler can be moved and backed up to a stationary drip cooler, and unloaded. Ultimately, the docking station could be designed so that carcasses went directly from the MSU into an attached, stationary drip cooler -- avoiding this extra step at the end of the day. However, this design would have to accommodate access to the drip cooler by Double S Meats' WSDA-certified, custom-exempt, on-farm kill truck to unload custom-exempt carcasses into the drip cooler. While somewhat inefficient, the mobile drip cooler actually allows for some initial flexibility among Double S Meats' existing operations.

The stationary drip cooler would be roughly 300 square feet and with sufficient refrigeration capacity to bring the temperature of hot carcasses down to 40 degrees within a period of 24 hours. The stationary and mobile drip cooler refrigeration would also need to be able to reduce humidity generated by the "wet" carcasses. From the stationary drip cooler, carcasses would be moved into the facility's existing hanging cooler. Currently, Double S Meats' hanging cooler serves as a drip cooler for custom-exempt animals slaughtered on-farm. Unlike many custom-exempt facilities, Double S Meats does not process wild game – which avoids any concerns about storing wild game with USDA-inspected carcasses. Custom-slaughtered carcasses are permitted to be stored in the same cooler as USDA-inspected carcasses, however they require separate rails. While the addition of a drip cooler would allow for fully-cooled carcasses to be packed more closely in the the hanging cooler, Double S Meats would ultimately need to expand their existing hanging cooler capacity – as well as their freezer capacity.

Rendering Cooler

The rendering cooler could be located in proximity to a power source at the base of a telephone pole, at the southernmost end of the parking lot. Locating the rendering cooler away from the facility and kill pad would help to reduce concerns about flies and other pests. Offal, hides, and rendering could be stored inside a 8-foot by 20-foot, insulated shipping container, and refrigerated using a low-tech Coolbot[44] refrigeration system. Generally, the offal, paunch, and other rendering generated by 1 beef fills approximately one, 50-gallon barrel. The waste from four or five pigs typically occupies one barrel. Three to four cow hides will typically fit a in a barrel, and can be worth a small amount to the rendering company, reducing the cost of rendering fees slightly. It's important to note that rendering companies won't take offal or hides from lambs or goats, so that waste will have to be hauled separately to the dump, or perhaps to a farm willing to make compost. Under a USDA Grant of Inspection (GOI), waste must be managed in a fashion that does not encourage pests (rodents, flies, etc) and does not create odors. Rendering would likely need to be collected every week.

[43] Typically, 15 sqft of refrigeration floor space is needed per beef carcass.

[44] Commonly used by small farms, the Coolbot is sensor that allows household air conditioners to be run at 40 degrees and utilized for refrigeration purposes: www.storeitcold.com.

Winter Operation

Operation of an MSU in the harsh winter climates of North Central Washington will be a challenge. From Shane Nelson's accounts, water and drainage systems will require constant attention to keep from freezing. Animal walkways and the kill pad would need to be maintained for proper animal footing and human safety. This would mean shoveling and/or the use of sand or salt. Water lines to the MSU would need to be heated to prevent freezing, and all drain lines would need to be adequately sloped to prevent clogging and freezing. The wastewater holding tank could be heated with the use of a stock-tank heater. Water for livestock would also need to be heated.

3.2 REGULATORY AND PERMITTING CONSIDERATIONS

Before Double S Meats can become an operational, USDA-inspected facility, the processor would need to navigate a variety of local and federal regulatory processes.

Double S Meats would need to apply for a ***Grant of Inspection (GOI) from the USDA's Food Safety Inspection Service (FSIS).*** What makes Double S Meats a particularly promising candidate for expansion to USDA-inspected slaughter is that, unlike most custom-exempt meat plants, they already operate under USDA inspection for their wholesale, cut-and-wrap and distribution activities. In order to conduct wholesale production, Double S Meats is inspected regularly by an FSIS inspector. As a result, Double S Meats is familiar with the oversight, procedures, and documentation required by USDA inspection. Double S Meats' relative comfort with the protocols and paperwork associated with USDA-inspection is a critical indicator of their high likelihood for success.

To apply for a Grant of Inspection, Double S Meats would have to provide documentation of an ***approved potable water source*** and ***an approved wastewater handling system***. Double S Meats would also need approval from the Town of Tonasket for a ***Conditional Use Permit (CUP)*** to conduct slaughter at their plant location within town boundaries.

Double S Meats is already connected to town water, which is considered an approved water source. The Town of Tonasket's municipal water system would simply need to provide a letter for Double S Meats' GOI application.[45] Unfortunately, although Double S Meats is located within the town limits and is connected to town water, they are not connected to town sewer at this time. The public sewer system is expected to arrive in the next few years. Double S Meats currently utilizes an on-site septic system that is inspected by the Okanogan County Department of Public Health. The Okanogan County Department of Public Health regulates septic systems processing up to 3,500 gallons per day.[46] While the Department of Public Health has the authority to work with Double S Meats to determine whether the existing treatment system is adequate, the department could also elect to involve the Washington State Department of Ecology if further evaluation were deemed necessary. Initial contact was made with Dave Hilton, agent for the

[45] Example template letters are available letter on the FSIS website: www.fsis.usda.gov/shared/PDF/Grant_of_Inspection_Attachment3.pdf

[46] Okanogan County Public Health, webpage: www.okanogancounty.org/ochd/Septic.html

Okanogan County Department of Public Health; however a determination of adequacy of the existing septic was not made by the time of writing.

Aside from access to an approved potable water source and proof of an adequate waste treatment system, other relevant local and state permitting requirement are the responsibility of the applicant, and do not necessarily affect the GOI process. What makes up the rest of the GOI application process is demonstration of the plant's compliance with ***Sanitation Performance Standards of Title 9, Code of Federal Regulations, Sections 416.2 and 416.3 (9 CFR 416).***[47] These performance standards do not dictate precise metrics or specific guidelines for plant construction, design, or materials. The FSIS generally cannot offer specific guidance about construction or design, but can suggest whether or not a material or design-outcome would be acceptable. The requirements focus on performance outcomes that achieve:

- Pest and odor control
- Adequate drainage that prevents backflow of waste water
- Adequate lighting and ventilation
- Sufficient rest rooms, hand-washing stations, and garbage cans
- Materials for walls, floors and ceilings that are easily cleaned, and are impervious to moisture
- Prevention of conditions resulting in product alteration or unsanitary conditions[48]

While there may be a few minor changes that Double S Meats will be required to make within their existing cut-and-wrap facility, changes will likely be minimal and at the discretion of the individual FSIS inspector. Double S Meats already operates under USDA inspection for their wholesale cut-and-wrap and distribution activities. They are inspected regularly by a FSIS inspector, who conducts routine facility inspections and microbial testing, and ensures that the Sanitary Standard Operating Procedures (SSOP) and Hazard Analysis and Critical Control Point (HACCP) plan are followed.[49]

Double S Meats would need to develop new HACCP and SSOP plans for slaughter using the MSU. While Double S Meats already operates in accordance with HACCP and SSOP plans for their current USDA-inspected cut-and-wrap activities, they would need new plans for slaughter. Luckily, the Niche Meats Processors Assistance Network has already developed HACCP and SSOP templates designed specifically for MSUs that are freely available online.[50] While these templates

[47] Subchapter E ("Regulatory Requirements Under the Federal Meat Inspection Act and the Poultry Products Inspection Act) of the Code of Federal regulations is available online: www.gpo.gov/fdsys/pkg/CFR-2011-title9-vol2/pdf/CFR-2011-title9-vol2-part416.pdf

[48] NMPAN provides a summary of facility requirements and performance standards: articles.extension.org/pages/17979/step-3:-facilities-must-meet-regulatory-performance-standards

[49] HACCP, or Hazard Analysis and Critical Control Point, is a methodology for determining food safety hazards reasonably likely to occur in the production process. HACCP also identifies preventative measures, or "critical control points." Hazards are generally grouped into three categories: physical, chemical, or biological. Standard Operating Procedures (SSOP) plans provide the documentation and protocol for ensuring critical control points are reached, and identified potential hazards are avoided.

[50] NMPAN's templates for HACCP and SSOP's are available, online: https://articles.extension.org/pages/27297/msu-model-haccp-plan-ssops-and-sops

will certainly need some tailoring to Double S Meats' operation and site, they will save Double S Meats time, effort, and expense in getting started.

Double S Meats may also need to update their existing HACCP and SSOPs within the cut-and-wrap facility, in any circumstances where this new venture would impact process or product. Before submitting an application for a Grant of Inspection, Double S Meats would likely reach out to their regional FSIS office and discuss their detailed plans for plant expansion. The USDA's FSIS also has a "Small Plant Help Desk" that provides a variety of online resources and information relevant to small plants trying to navigate GOI's and FSIS compliance.[51]

In addition to applying for a Grant of Inspection from the FSIS, Double S Meats will also have to obtain ***approval from the town of Tonasket to conduct slaughtering activities within the town boundaries***, where the facility is located. Double S Meats is zoned in the C-2 commercial district of Tonasket, in which slaughterhouses have ***historically been a prohibited use***. The following is an account of how Double S Meats and the project team worked to navigate this major potential barrier and identify whether it was even possible for this prohibition to be removed so that Double S Meats might be permitted to conduct slaughter at their site.

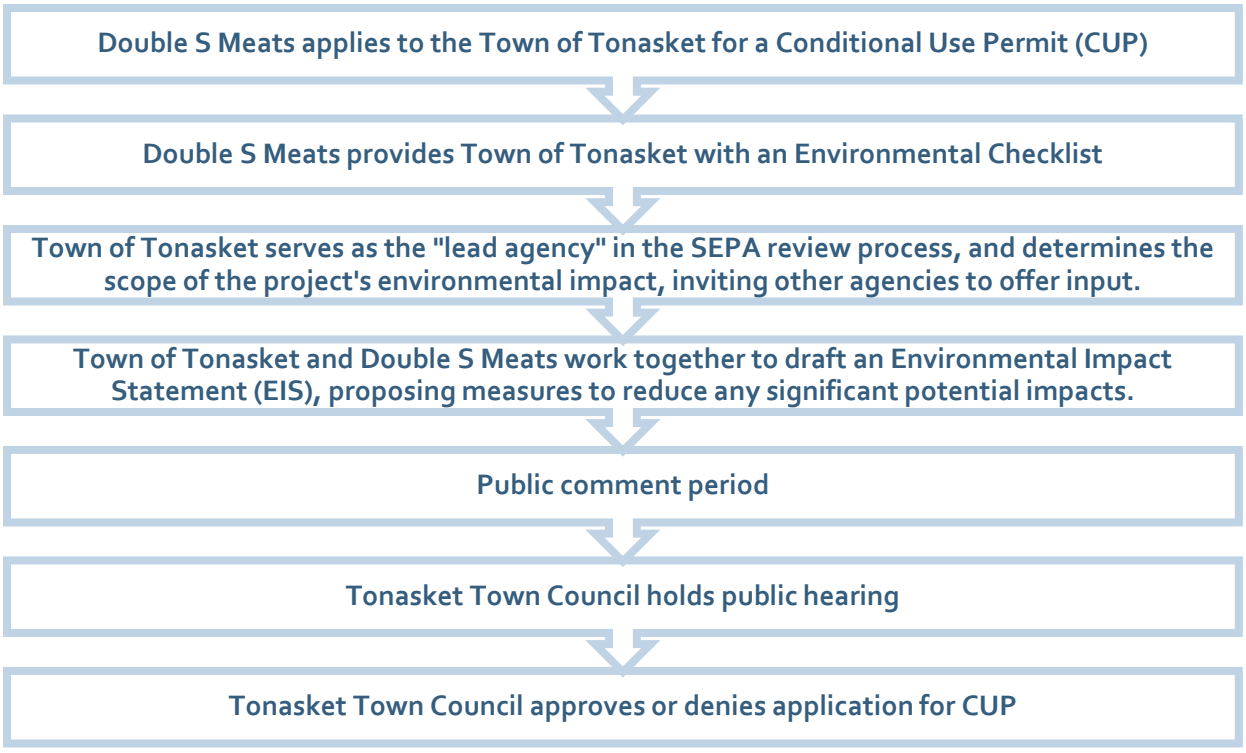
> On June 12th, project manager, Alyssa Jumars, and owner of Double S Meats, Gavin Pratt, made a presentation to the Town Council of Tonasket. Jumars shared the study's preliminary findings about the need for improved access to USDA-slaughter services among livestock producers in Okanogan County. Jumars also described how Double S Meats was the only facility identified in the county as a viable possibility for improving access to USDA slaughter services. Pratt explained to the Town Council that in order for the project to move forward, the town would need to approve a change to the zoning use code, making slaughterhouses an allowable use. The Town Council demonstrated a palpable interest in future USDA capacities at Double S Meats, and motioned the Planning Commission to draft an amendment to the zoning use code. [52]
>
> On July 31st, Jumars met with the Tonasket Planning Commission to answer questions about a potential future slaughter facility at Double S Meats, and other relevant considerations regarding USDA-inspected slaughter plants. The Planning Commission asked for input on what types of conditions would help to ensure public safety, humane animal handling, mitigation of odors or other nuisances, environmental impacts, aesthetic impacts, and impacts to neighboring residents. The Planning Commission approved a draft amendment prepared by Town Planner, Kurt Danison, and scheduled a public hearing.
>
> On August 21st, the Planning Commission conducted a public hearing. Ten residents of the town attended and were primarily concerned that the proposed amendment included two zoning use codes: C-2 and Mixed-Use. Following a public discussion and a concerted request by residents, the Planning Commission staff agreed to remove the Mixed-Use zoning code from the proposed amendment. Double S Meats is located in the C-2 district,

[51] www.fsis.usda.gov/wps/portal/fsis/topics/regulatory-compliance/haccp/small-and-very-small-plant-outreach
[52] "USDA-certified slaughter proposed" Omak Chronicle, June 19, 2018: www.omakchronicle.com/news/2018/jun/19/usda-certified-mobile-slaughter-unit-proposed/

and adjoins only one residential property. The adjoining residential landowner was in attendance and stated that he had no issue with the proposed zoning use change and would support a future application from Double S Meats for a Conditional Use Permit. At the close of the public hearing, the Planning Commission made a formal recommendation to the Town Council to approve the zoning use code amendment.

On September 25th, the Tonasket Town Council conducted a public hearing for the proposed amendment to the zoning use code. About a dozen residents attended the hearing, and several voiced concerns about offering a foothold to future, large-scale slaughterhouses inside the Town. An engaged discussion ensued regarding the likelihood of this possibility; and while several citizens of the town were not ultimately placated, all attending members of the Town Council articulated their reasoning for supporting the amendment and their confidence that the conditions established in the amendment would prevent abuses or the establishment of any large-scale slaughter facility in Tonasket. The Town Council voted unanimously to approve the zoning use code, to allow slaughter in the C-2 district, with a Conditional Use Permit (CUP). [53]

The question of whether Double S Meats could even conceivably be permitted by the Town to conduct slaughter in Tonasket was answered with a resolute yes. However, Double S Meats would still be required to apply for a **Conditional Use Permit (CUP)**. This process would involve conducting a **SEPA environmental review**, and would also require another public hearing before the Town Council could approve a CUP.



[53] See Appendix H, Tonasket Town Ordinance 793

Once the Conditional Use Permit (CUP) were approved by the Tonasket Town Council, Double S Meats could confidently move forward applying for a Grant of Inspection (GOI). However, it can take many months before a GOI is awarded, so Double S Meats may want to consider beginning the application process as early as possible – potentially even before a CUP were awarded.

Summary

The study's work leads us to conclude that the potential feasibility of developing USDA-slaughter at Double S Meats is quite high. While there is a need for additional research, particularly regarding any required improvements to the existing septic system, the construction of a permanent docking station at Double S Meats is achievable and the permitting process is navigable. Had the Town of Tonasket not demonstrated such a willingness to adapt the zoning code, any further discussion of feasibility of USDA-inspected slaughter at Double S Meats would have been entirely mute. While Double S Meats must still apply to the Town for a Conditional Use Permit and successfully complete an Environmental Checklist and SEPA review, the study team is confident that there are no foreseeable roadblocks at this time. Because Double S Meats is already familiar with USDA oversight and process, the study team is also confident that Double S Meats will be able to successfully achieve a Grant of Inspection from the USDA.

4.0 FINANCIAL FEASIBILITY

In the previous discussion of technical feasibility, we explored the roadmap to a USDA-certified kill floor at Double S Meats: the site development needs, the Grant of Inspection process, and the process for getting approval from the Town of Tonasket. We also identified additional potential barriers and speedbumps, as well as some potential ways around them. The outstanding question remained: ***could Double S Meats generate profit from conducting USDA-inspected slaughter at their facility?*** And would the potential profit margin be large enough to encourage Double S Meats to incorporate USDA slaughter as a sustainable, long-term component of their business model?

The answer to this question, we discovered, was a ***conditional yes.*** When presented with the estimated potential demand for USDA slaughter services in Okanogan County, and the estimated marginal profit of conducting slaughter, the owner of Double S Meats was willing to consider the undertaking. While the potential marginal profit of adding USDA slaughter was sufficiently appealing, the risks were still too high for a small, family-run business. Double S Meats had already been considering the addition of USDA-inspected slaughter at their facility, but had concluded there was too much uncertainty with regard to the demand for USDA services. While the feasibility study and outreach process helped to illuminate potential demand for services, the demand estimates developed in the study process were well-informed assumptions. Cautionary lessons learned from the examples of other small, collaborative projects to bring USDA-inspected slaughter to rural communities suggest that predicted demand often takes many years and ongoing outreach effort in order to achieve. [54]

In the end, Double S Meats determined that the undertaking was financially feasible, but ***only if some of the uncertainties and financial risks could be mitigated.*** In Section 5 of this report, we will describe the process of working with the Methow Conservancy Board of Directors to develop a plan for collaboration between Double S Meats and the non-profit land trust. The plan proposed ways to reduce some of the risk to the small business, in order to help them serve what has long been considered a "community need" for improved access to USDA-inspected services in Okanogan County.

4.1 METHODOLOGY

In the following section, we will describe the study's efforts to identify: ***the costs of site and facility development; the fixed and variable marginal costs of conducting USDA-inspected slaughter; and the potential marginal profit to Double S Meats***. We reviewed diverse feasibility studies and existing templates for estimating profitability. While we found the available templates to be excellent references, we questioned their applicability to our region and our unique context. We ultimately contracted Shane Nelson, a regional consultant with 12 years of experience conducting

[54] Interviews: Tracy Smaciarz, Heritage Meats, regarding Puget Sound Processors, LLC and Nils Johnson, WSU Extension Agent and Board member of the CADC.

USDA-inspected slaughter using a MSU, to help us develop a more precise profit-and-loss scenario for USDA slaughter at Double S Meats.[55]

4.2 COSTS OF SITE AND FACILITY DEVELOPMENT

Double S Meats already has many of the components required for a USDA-inspected slaughter plant. They have a USDA-inspected cut-and-wrap room, inspected refrigeration, and an office for the USDA inspector. They have sufficient potable water and power for existing and future operations. While refrigeration capacity would need to be expanded and wastewater handling may need to be increased, Double S Meats essentially has all of the components of a USDA slaughter plant, except the kill floor. This makes the cost of development uniquely low when compared to potential new plants explored in most other feasibility studies.

In most of the existing studies that explore the feasibility of constructing new, small-scale USDA plants in rural communities similar to Okanogan County, the costs for development range from $1 to $1.5 million, or more.[56] [57] These costs include the purchase of real estate; developing power, water, and sewer; excavation and site preparation; permitting; and plant construction. It's important to note that the operating budgets for these models also include significant debt burdens as a result of these large startup costs.

What is needed at Double S Meats is essentially just the kill floor. A small, but efficient kill floor capable of accommodating the estimated demand could be accomplished with approximately 1,000 square feet. Construction costs for USDA plants are generally $300/square foot, including equipment.[58] The costs of a new kill floor at Double S Meats could be approximately $300,000. The question posed as part of the study was***: could Double S Meats support a construction loan for a kill floor, based on the anticipated demand for USDA-inspected slaughter?***

The projected marginal profit of slaughtering activities under the predicted, optimal annual production capacity of 500 beef, 300 pigs, and 400 lamb and goats could support a 30-year loan. On a 30-year schedule for a loan of $270,000, with a fixed rate of 5%, annual payments would total $17,388. Once the estimated labor costs, supplies, rendering fees, refrigeration costs, insurance, maintenance and repairs, surprises, and loan repayments are accounted for, Double S Meats could potentially generate approximately $36,000 in profits from slaughter services alone. Additional income would be generated in the cut-and-wrap shop.

[55] Shane Nelson leased the MSU belonging to the Community Agriculture Development Center (CADC) of Colville, and operated the unit as S&K Meats until 2017. Shane Nelson has also consulted for regional plants, such as the LPCA in Odessa. His experience in our region proved indispensable.
[56] Food & Livestock Planning, Inc. "Business Plan for a New Small USDA Inspected Meat Processing Plant to Serve Local Livestock Producers." USDA Rural Development, 2011.
[57] Niche Meats Processor Assistance Network. "Options for Increased Processing Capacity in California's Central Coast Region." USDA Agricultural Marketing Service, 2015. (pg. 19)
[58] NMPAN resources: https://articles.extension.org/pages/20445/plant-design-and-construction

PROFIT & LOSS AT PREDICTED OPTIMAL DEMAND

Potential Revenue	Potential Profit		Labor	Supplies	Rendering	Refrigeration	Insurance	Maintenance	Surprises	**Loan payments**
$107,500	$36,392		$40,320	$2,625	$2,250	$2,000	$2,400	$2,625	$1,500	**$17,388**

**See Section 4.2 for a detailed discussion of these operating costs and projected marginal profits.*

While these estimates present a scenario where it should be possible for Double S Meats to construct a new, 1,000 square-foot kill floor – it is important to recognize ***that the estimates of demand for USDA slaughter services are well-informed, but untested assumptions, and that this estimated peak demand would take several years to reach.*** The project team and advisory producers are optimistic that production could reach 500 beef, 300 pigs, and 400 lamb and goats by year eight, and possibly as early as year five.

However, if similar projects in other regions are any indicator, the first five years are often rough: operators experience a steep learning curve and expensive surprises; efficiency is low and labor costs are high; livestock producers don't raise as many animals for USDA slaughter as promised, and demand ramps up slowly. Overall, profit margins are slim in the beginning years. While projections for peak demand would indicate that supporting a loan on $300,000 investment is feasible, supporting this debt burden in the first 5 years would be quite unrealistic. ***What was clearly identified was the need for an intermediary step, to test assumptions about demand and provide a "proof of concept."***

The intermediary step identified by the feasibility study process was the acquisition of a Mobile Slaughter Unit (MSU), by a non-profit entity. The non-profit entity would then to lease the MSU to Double S Meats, and Double S Meats would construct a docking site for the unit at their facility.

Exploring the potential for an MSU was not part of the original study objectives. Historically, many MSU projects have not been entirely successful: the inefficiencies inherent in moving the units farm-to-farm have rendered them unprofitable, and many of the MSU's that remain in use are permanently parked.[59] While some MSUs allow for the operator to conduct limited, on-board cut-and-wrap, most operators find that the space does not allow for efficient or profitable cutting. Successful MSU's are operated in conjunction with USDA-inspected, cut-and-wrap shops.

Currently, MSU's are available from two companies in our region: Trivan and Featherlite. Brand-new, these units cost between $200,000 and $250,000, depending on the on-board cut-and-wrap capabilities and refrigeration capacity. Trivan has begun manufacturing some units that are not designed to be mobile, and are available at a slightly reduced cost.

[59] For example, the CADC's unit in Colville, or the Pierce County Conservation Districts' unit that is leased to Puget Sound Processors, LLC.

Given that the cost of a new MSU is fairly close to the estimated cost of a more efficient, brick-and-mortar kill floor at Double S, a MSU did not initially seem like a good option.[60] However, it came to the attention of a member of the Producer Advisory Group in early May that a non-profit in Colville, Washington, had a used, USDA-inspected MSU that they were going to be putting up for sale. The non-profit, called the Community Agriculture Development Center (CADC), had purchased the unit 10 years ago from Trivan, with the help of funding from the USDA's Rural Business Development Grant program.

The CADC had leased the unit to a private operator, Shane Nelson, of S&K Meats. Nelson operated the MSU as a stationary unit, in conjunction with a small cut-and-wrap plant that was able to offer USDA-inspected cutting. The cut-and-wrap shop, Smokey Ridge Meats, ultimately changed ownership, and the new owners decided to fabricate their own MSU. Shane Nelson relinquished his lease with the CADC, and as a result, the CADC decided to put their MSU up for sale.

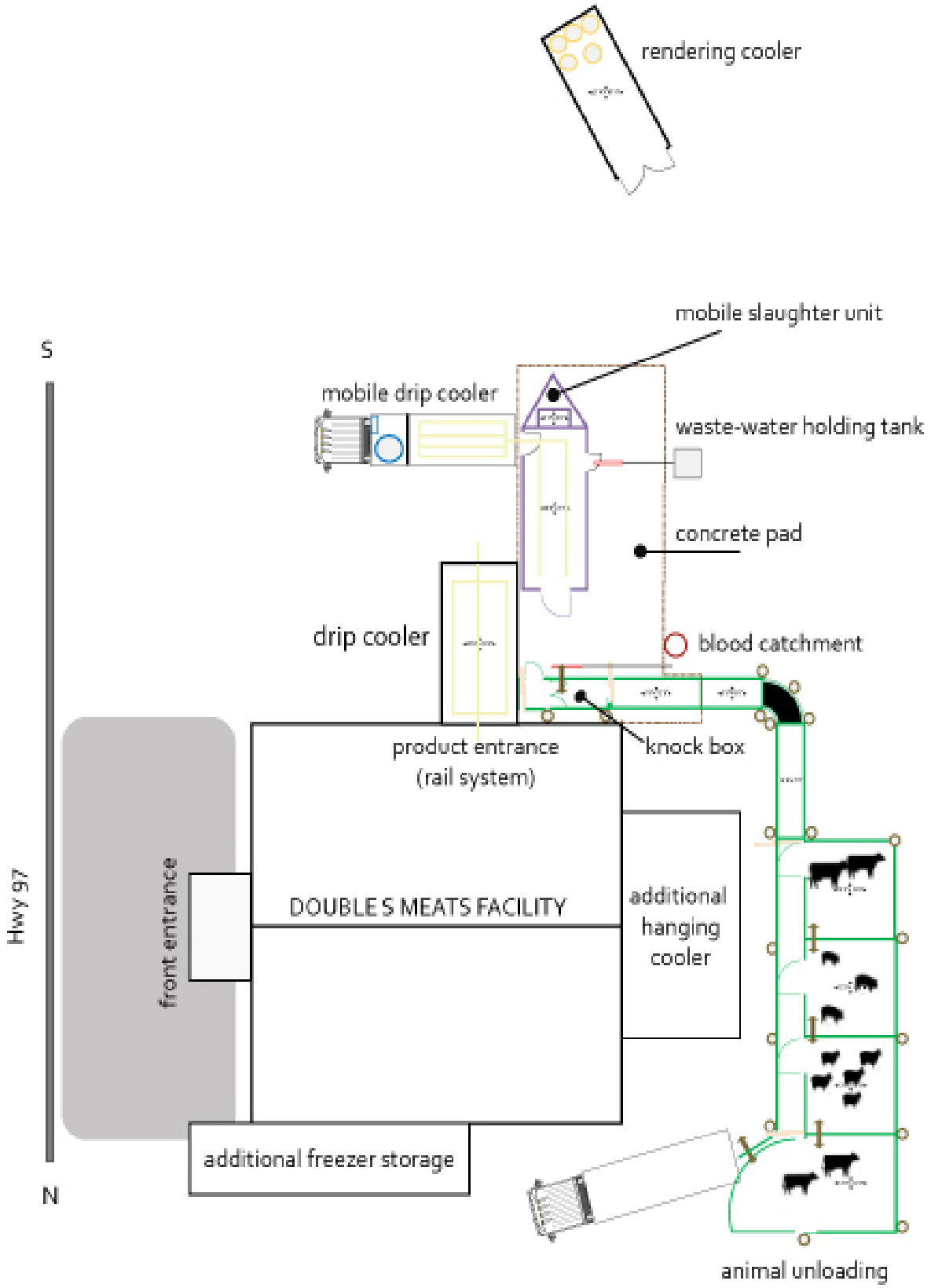
Between May and September, the CADC worked to develop an appraisal for the unit and a "Request for Proposal" process that would allow the MSU to be sold to another non-profit or private business with high potential for success in serving the needs of small-to-medium livestock producers. The feasibility study team worked to keep the CADC informed of the study progress, and to stay in touch with the CADC as their criteria for relocating the unit developed. In the meantime , the study team evaluated and explored a range of opportunities for collaboration between Double S Meats and several non-profit entities. In particular, a collaboration between Double S Meats and the Methow Conservancy began to emerge as a promising opportunity.

By June, the study work began to narrow, and focus on the feasibility of developing a permanent docking site for a MSU at Double S Meats. This seemed like both a promising opportunity and the only realistic scenario under which Double S Meats would be willing to undertake USDA-inspected slaughter, until assumptions about demand could be fully tested.

Site Cost Estimates

To establish site development costs for creating a permanent docking station for a MSU and to estimate slaughter costs, capacity, and profitability using a MSU, the study team hired Shane Nelson, the former operator of the CADC's unit. Nelson developed a site design to include animal holding pens, walkways, a squeeze chute and knock-box, an outdoor concrete kill-pad, wastewater holding, and blood catchment. Nelson was able to develop a site plan that maintained good work flow and kept animal holding pens and slaughtering activities screened from public view. Particularly challenging was accomplishing a design to meet these needs on the limited available footprint at Double S Meats. A more detailed discussion of each element is offered in the previous section, 3.1*: Infrastructure Needs*.

[60] A similar conclusion was made in another feasibility study by the Niche Meats Processor Assistance Network: "Options for Increased Processing Capacity in California's Central Coast Region." USDA Agricultural Marketing Service, 2015.


rendering cooler
mobile slaughter unit
S
mobile drip cooler
waste-water holding tank
concrete pad
drip cooler
blood catchment
knock box
product entrance
(rail system)
Hwy 97
front entrance
DOUBLE S MEATS FACILITY
additional
hanging
cooler
additional freezer storage
N
animal unloading

The following are estimated costs of each component of the docking-station site development. These estimates would likely vary, depending on the extent to which used or discounted materials could be sourced.

SITE DEVELOPMENT COSTS

Animal holding pens (not covered*) and walkways	$5,000 - $7,000
Chutes and knock box	$5,000
150 sqft rendering cooler	$4,500
300 sqft drip cooler (located on existing concrete pad)	$7,500
400 sqft, additional hanging cooler (used), rail system, concrete pad	$10,000
1,500 gallon waste-water holding tank and sump pump	$1,500
Excavation work and concrete for kill pad, including drainage	$7,500 - $10,000
Additional freezer capacity (used, tractor-trailer unit)	$7,000
Total docking station development costs	**$42,000 - $46,500**

*While Shane Nelson suggested that animal holding pens need not be covered until the plant could afford the construction of covered shelters, the Producer Advisory Committee felt quite strongly that animal holding pens should be covered to improve animal comfort.

Anticipated MSU Costs

The typical cost of a new MSU is $200,000 -$250,000.[61] However, the feasibility study proceeded in exploring the opportunity that developed to acquire a ***used MSU*** from the Community Agriculture Development Center (CADC), a non-profit in a neighboring county. Bruce Dunlop, who consults with with TriVan and supplied the unit belonging to the CADC, estimated that the unit and associated mobile drip cooler might currently have a value of about $50,000. The project team had hoped to be provided with the CADC's appraisal of the unit by late summer, however, by the time of writing, the CADC had not yet released their appraisal or formally announced their "Request for Proposal" process."

We also discovered through the course of the study, that a manufacturer in Colville was able to create a similar MSU for approximately $100,000, though without any associated on-board or mobile refrigeration.

4.3 MARGINAL OPERATING COSTS AND MARGINAL PROFITS

Because this feasibility study assessed the opportunity to expand an existing facility, the operating costs evaluated were ***marginal operating costs***, or operating costs in addition to Double S Meats' current operating costs. Most feasibility studies exploring small, brand-new plants must address operating costs in their entirety. In the case of this particular study, it would have been both irrelevant and inappropriate and to ask Double S Meats to share an overview of their complete business operating costs and profit margins, for the purposes of a publicly-available study.

[61] More information about Trivan's custom fabrication of MSU is available, online: https://trivan.com/mobile-processing-unit/

Furthermore, most feasibility studies explore the profitability of USDA-inspected processing as a bundle of services that include both slaughter and cut-and-wrap. Because this study worked with an established cut-and-wrap plant, our assessment of feasibility focused primarily on the ***marginal costs and benefits of slaughter activities only***.

However, the study team was able to estimate the potential marginal gross income to Double S Meats from the predicted increase in production in their cut-and-wrap shop, using available templates.[62] It was estimated that Double S Meats could generate 10-12% profit on gross sales of cut-and-wrap. Additional profit to Double S Meats resulting from the additional demand for cut-and-wrap services as a result of USDA-inspected slaughter could approximate $35-$50,000, once optimum production capacity were reached (projected for year 8).

ESTIMATED CUT-AND-WRAP REVENUES

Livestock	Estimated demand	Cut & wrap fees (per lb)	Average hanging weight	Estimated cut-and-wrap fees (per animal)	Estimate revenue
Beef	500	$0.85	700	$595	$297,500
Pork	300	$0.75	180	$135	$40,500
Lamb	250	flat fee		$60	$15,000
Goat	150			$60	$9,000
Total Estimated Potential Cut-and-Wrap Revenue					**$362,000**

Again, these are extremely rough estimates, and the precise marginal profit of increased cut-and-wrap production at Double S Meats is private information. The study focused on evaluating the marginal operating costs and potential profit of slaughter activities, and assumed that increasing cut-and-wrap production would necessarily increase profits to Double S Meats. A deeper exploration of profit margins for the plant as a whole would have been relevant only if slaughter proved to be a break-even activity. The question would then have been whether slaughter could increase cut-and-wrap profits sufficiently and justify the costs of conducting slaughter.

There was initially some concern that slaughter would prove to be a break-even activity. The Island Grown Farmers' Cooperative operates their MSU as a break-even business, in order to keep fees low for members of the cooperative. However, it should be noted that Island Grown Farmers Cooperative is one of the few MSU operators that continues to transport their unit farm-to-farm, and the costs associated with moving the unit (on the ferry system, to serve farms on multiple islands in Puget Sound) is quite large.

Puget Sound Processors (PSP), is another operator of a MSU in Washington State. Tracy Smaciarz, who is head butcher of Heritage Meats, a USDA cut-and-wrap facility that processes many of the carcasses slaughtered by PSP, indicated that slaughter with a MSU was a break-even activity.

[62] Rodney Holcomb; Kyle Flynn; Phil Kenkel. "Feasibility Template for a Small Multi-Species Meat Processing Plant." Oklahoma State University, 2011.

According to Tracy, who has helped PSP manage their MSU, the MSU's primary obstacles have been efficiency of production in the small operating space, and the slow buildup of demand for services, despite high initial interest among livestock producers.

However, Shane Nelson's experience leasing the CADC's MSU offered a more hopeful, contrasting example. Nelson attributes his success in operating a MSU profitably to making the unit stationary from day one, prioritizing efficiency of work flow, and using ingenuity to find lower-cost solutions to production needs. Interestingly, the majority of Nelson's clients were not cattle producers. Annually, he processed 400 beef and 1,000 head of pigs and sheep. While most cattle producers prefer to process beef during a small window in the fall (Sep-Dec) when their animals are "on the gain," lamb and pork producers are more willing to process during the shoulder seasons. ***Having producers willing to process during the shoulder season allows the operator to stay more consistently busy and more profitable over the course of a year.***

Based on the information provided by Nelson, we developed the following estimates for fixed operating expenses. While some of the expenses may certainly increase as production expands, it would be difficult to estimate these additional costs with much accuracy until the endeavor were underway. The following are reasonable estimates, based on the experiences of Shane Nelson.

ANNUAL FIXED COSTS

Rendering ($150 per regularly scheduled pick-up)	$2,250
Refrigeration (power consumption for drip cooler and expanded hanging cooler)	$2,000
Insurance	$2,400
Loan payments*	$11,520

*Annual loan payments for an 8-year, $76,000 loan with 5% interest would be approximately $11,5200. The loan would cover 80% of the cost of the MSU (at a discounted price of $50,000) and site-development costs ($45,000).

We also estimated variable expenses, which would depend on the number of days the MSU were in operation:

VARIABLE COSTS

Labor *	$384/day
Supplies	$25/day
Maintenance & Repairs	$25/day

*Labor would include eight hours per day for a lead staff ($22/hr) and a supporting staff member ($18/hr), and including employer taxes.

To estimate days of operation, we used two different efficiency metrics. In Y1-Y3, we anticipated that production efficiency would be low, as staff at Double S Meats navigate the learning curve of USDA-inspected slaughter. In Y1-Y3, we anticipated that a team of two staff could slaughter and break 5 beef carcasses, or 12 pigs, or 15 sheep, or 12 goats in an 8-hour work day that would include cleanup. By Y4, we anticipated that staff should be able to process 8 beef, 15 pigs, 20 sheep, or 15 goats in one work day.

PRODUCTION EFFICENCY: SLAUGHTER AND BREAKING

	Beef	Pork	Lamb	Goat
Y1-Y3	5/day	12/day	15/day	12/day
Y4+	8/day	15/day	20/day	15/day

Potential demand for USDA slaughter is estimated at 500 beef, 300 pigs, 250 lambs, and 150 goats. Reaching this demand and this level of production capacity would likely not be achieved until sometime between Y5 and Y8. Demand would likely be affected by the ability of Double S Meats to offer quality cutting and labeling, excellent customer service, and humane animal handling. Double S Meat's ability to offer value-added processing, especially to pork producers, may also be a factor in the demand for slaughter services.

The following is a projected timeline showing predicted days of operations, reflecting production efficiency and based on target levels of production for Y1-Y10. "Days of operation" reflect the number of days the MSU would be used, in order to process the estimated demand for each species of livestock. The schedule for estimated yearly demand is based on the anticipated demand of 500 beef, 300 pigs, 250 lambs, and 150 goats. Based on the accounts of Tracy Smaciarz and on information provided by Shane Nelson, we anticipate that production levels would reach the projected demand sometime between Y5-Y8. We would expect demand to increase by about 10% per year. This rate of growth is what Shane Nelson experienced during his 12 years of offering USDA slaughter through S&K Meats in the Colville area.

PROJECTED DEMAND SCHEDULE

	Beef	Pork	Lamb	Goat	Days of Operation
Y1	200	137	102	68	64
Y2	301	150	113	75	86
Y3	331	165	124	83	95
Y4	364	182	136	91	70
Y5	400	200	150	100	78
Y6	440	220	165	110	85
Y7	484	242	182	121	94
Y8	500	300	250	150	105
Y9	500	300	250	150	105
Y10	500	300	250	150	105

Based on the projected timeline of production growth, and on the variable and fixed costs for slaughtering, the following is a predicted profit-and-loss schedule for Y1-Y10. The following scenario is based on the assumption that a MSU could be acquired at a discounted rate of $50,000, and that Double S Meats could acquire a favorable loan for both the unit and site development costs – totaling $95,000. Assuming that a bank would require the borrower to put forward 20%, or

$19,000, and would be able to offer a rate of 5% interest over 8 years, annual loan payments on the $76,000 of borrowed capital would be approximately $11,520, for an 8-year period.

PREDICTED PROFIT AND LOSS SCENARIO: YEARS 1-10, DISCOUNTED MSU

	Potential Revenue**	Potential Profit	----- Estimated Expenses ----- Labor	Supplies	Rendering	Refrigeration	Insurance	Maintenance & Repair	Surprises	Loan Repayment
Y1	$45,025	($2,370)	$24,531	$1,597	$2,250	$2,000	$2,400	$1,597	$1,500	$11,520
Y2	$58,414	$1,246	$33,178	$2,160	$2,250	$2,000	$2,400	$2,160	$1,500	$11,520
Y3	$64,256	$3,338	$36,495	$2,376	$2,250	$2,000	$2,400	$2,376	$1,500	$11,520
Y4*	$70,681	$20,435	$27,054	$1,761	$2,250	$2,000	$2,400	$1,761	$1,500	$11,520
Y5	$77,750	$24,445	$29,760	$1,937	$2,250	$2,000	$2,400	$1,937	$1,500	$11,520
Y6	$85,525	$28,856	$32,736	$2,131	$2,250	$2,000	$2,400	$2,131	$1,500	$11,520
Y7	$94,077	$33,709	$36,009	$2,344	$2,250	$2,000	$2,400	$2,344	$1,500	$11,520
Y8	$107,500	$42,260	$40,320	$2,626	$2,250	$2,000	$2,400	$2,625	$1,500	$11,520
Y9	$107,500	$53,780	$40,320	$2,625	$2,250	$2,000	$2,400	$2,625	$1,500	--
Y10	$107,500	$53,780	$40,320	$2,625	$2,250	$2,000	$2,400	$2,625	$1,500	--

*In Y4, production efficiency is expected to increase (resulting in lower labor costs and fewer days of operation).
** Estimated revenues are based on slaughter fees of **$110 per beef** and **$75 per small animal** (sheep, pig, or goat).

These projections would suggest that it should be financially feasible for Double S Meats to utilize a bank loan to purchase a heavily-discounted MSU. However, in the event that the used unit belonging to the CADC could not be acquired for use at Double S Meats, the following is a scenario in which Double S Meats might utilize a bank loan to purchase a new, custom-fabricated unit for $100,000. Double S Meats would still need the loan to cover the $45,000 in site development costs, as well. Assuming a loan amount of $120,000 (20% of $150,000, or $30,000, would likely be required by the lender to be put forward by the borrower), and a favorable rate of 5% over an 8-year period, the annual loan payments would be $18,240.

PREDICTED PROFIT AND LOSS SCENARIO: YEARS 1-10, New MSU

	Potential Revenue**	Potential Profit	----- Estimated Expenses ----- Labor	Supplies	Rendering	Refrigeration	Insurance	Maintenance & Repair	Surprises	Loan Repayment
Y1	$45,025	($9,090)	$24,531	$1,597	$2,250	$2,000	$2,400	$1,597	$1,500	$18,240
Y2	$58,414	($5,473)	$33,178	$2,160	$2,250	$2,000	$2,400	$2,160	$1,500	$18,240
Y3	$64,256	$(3,382)	$36,495	$2,376	$2,250	$2,000	$2,400	$2,376	$1,500	$18,240
Y4*	$70,681	$13,715	$27,054	$1,761	$2,250	$2,000	$2,400	$1,761	$1,500	$18,240
Y5	$77,750	$17,725	$29,760	$1,937	$2,250	$2,000	$2,400	$1,937	$1,500	$18,240
Y6	$85,525	$22,136	$32,736	$2,131	$2,250	$2,000	$2,400	$2,131	$1,500	$18,240
Y7	$94,077	$26,989	$36,009	$2,344	$2,250	$2,000	$2,400	$2,344	$1,500	$18,240
Y8	$107,500	$35,540	$40,320	$2,626	$2,250	$2,000	$2,400	$2,625	$1,500	$18,240
Y9	$107,500	$53,780	$40,320	$2,625	$2,250	$2,000	$2,400	$2,625	$1,500	--
Y10	$107,500	$53,780	$40,320	$2,625	$2,250	$2,000	$2,400	$2,625	$1,500	--

What is important to note about this scenario is that, while feasible, it would require Double S Meats to have $30,000 in available cash at project inception. Moreover, cash-flow would not be positive until Y5 (see chart below), and Double S Meats would need to have an additional estimated $17,945 in liquid capital to get through Y1-Y4.

PREDICTED CASH FLOW

	Potential Revenue	Potential Profit	Cash Flow
Y1	$45,025	($9,090)	($9,090)
Y2	$58,414	($5,473)	($14,564)
Y3	$64,256	($3,382)	($17,945)
Y4	$70,681	$13,715	($4,231)
Y5	$77,750	$17,725	$13,494
Y6	$85,525	$22,136	$35,630
Y7	$94,077	$26,989	$62,620
Y8	$107,500	$35,540	$98,160
Y9	$107,500	$53,780	$151,940
Y10	$107,500	$53,780	$205,720

While these projections would suggest that it could be financially feasible for Double S Meats to utilize a bank loan to purchase a MSU and conduct necessary site development, it was already established early in the study process that the uncertainties regarding demand are too high for this small, family-run business to be willing to on take this kind of risk. From the beginning, the feasibility process has ***considered access to USDA inspected livestock processing services as a community need, rather than simply as a service provided by a private business***. That is why exploration of possible opportunities to meet the identified demand for USDA processing have included research into the feasibility of cross-sector collaboration with non-profit entities. Much of the feasibility study efforts focused on devising strategies that would reduce the burden of risk on Double S Meats, while serving the charitable mission of a participating non-profit entity.

5.0 OPPORTUNITIES FOR CROSS-SECTOR COLLABORATION

Because the need for improved access to USDA-inspected livestock processing was considered a "community need" by the project team, much of the effort in the study involved developing a strategy to include support from the non-profit sector in any potential future implementation.

We were fortunate to be able to look to several successful examples in Washington State, of non-profit, community organizations that played a pivotal role to improve access to USDA-inspected livestock processing for small farms their region:

- The **Island Grown Farmers' Cooperative** is a nationally-recognized example of an extremely successful, community-driven effort to improve access to USDA-inspected processing for small farms. The IGFC operates a MSU that offers on-farm, USDA-inspected slaughter on multiple islands in the Puget Sound. The MSU is transported, by ferry, to each member farm. Originally, the MSU belonged to the **Lopez Community Land Trust**, which leased the unit to the farmer cooperative for approximately 10 years.[63] After 10 years, the cooperative purchased the unit from the community land trust, at fair-market value.
- The non-profit **Community Agriculture Development Center** (CADC) was another successful example in nearby Stevens County. The CADC and the Stevens County WSU Extension collaborated to purchased an MSU, with the help of a USDA Rural Business Development Grant. The MSU was then leased for nearly 12 years to a private operator: Shane Nelson, of S&K Meats. Nelson, however, opted not to operate the MSU as a mobile unit, for the sake of efficiency. Instead, Nelson parked the unit and conducted slaughter in partnership with a cut-and-wrap shop that could offer USDA-inspected cutting. Nelson leased the unit on a per-animal basis from the CADC, rather than paying a fixed lease rate.
- The **Pierce County Conservation District** (PCCD) currently owns a MSU and leases it to a private operator, Puget Sound Processors (PSP), on a 5-year lease agreement. Initially, farms in Pierce County had hoped to develop a cooperative, similar to the Island Grown Farmers' Cooperative, to conduct USDA-inspected, on-farm slaughter in the region. However, cooperative management proved extremely challenging, and the expense and inefficiency of moving the MSU farm-to-farm proved prohibitive. Currently, the unit is operated by a private operator, PSP, and is parked at a permanent docking station. PSP works in collaboration with a USDA-inspected cut-and-wrap shop: Heritage Meats, in Rochester.

**For additional details about IGFC and PCCD, please see Appendix F, for Kathryn Quanbeck's summary report.*

Initially, all three feasibility study partners -- the Okanogan Conservation District, the TwispWorks Foundation, and the Methow Conservancy -- indicated a willingness to play a role in future project implementation. When the opportunity to bid for the CADC's MSU developed, and the idea that a local non-profit could own the unit and lease it to Double S Meats began to get some traction, both the TwispWorks and Methow Conservancy Boards of Directors were very eager to explore this opportunity in further detail.

[63] Interview: Liz Scranton, former Board President, Lopez Community Land Trust.

Presentations were made in June to the Boards of Directors of TwispWorks and the Methow Conservancy. Project manager Alyssa Jumars gave a summary of the outreach and survey process that had been conducted in the spring; provided an initial summary of survey results; described the work to identify feasible opportunities to meet the identified demand; and explained the initial work to assess the market, technical, and financial feasibility of an expansion of Double S Meats.

At their July meetings, both the TwispWorks and Methow Conservancy Boards of Directors discussed potential involvement in the opportunity to acquire the CADC's MSU, and lease it to Double S Meats. Both Boards began to develop an extensive list of questions. Primarily, the Boards wanted to better understand the project impact; how much programmatic and organizational support would be required; how much it would cost to acquire the MSU and offer organizational support during the pilot project; what the risks would be; and how a collaboration between TwispWorks, the Methow Conservancy, and Double S Meats might be structured. During July and August, the feasibility study team worked to provide answers to these questions. Ultimately, the TwispWorks Board determined the organizational, programmatic, and financial support they could offer towards project implementation was limited -- not for lack of interest, but because of multiple existing commitments and programs that would not allow for the organization to take on additional projects at the time. As a result, the feasibility study team began to develop a detailed proposal, focused for the Methow Conservancy Board of Directors.

Project manager Alyssa Jumars formed a Methow Conservancy Task Force, consisting of two board members of the Methow Conservancy and three additional Methow Conservancy staff[64] to help develop a formal proposal to the Board of Directors. The proposal suggested that the Methow Conservancy bid to purchase the CADC's MSU, then lease the MSU to Double S Meats. The Task Force would ultimately propose that the Methow Conservancy initiate a 5-year project and play a supporting role to ensure that livestock producers were well-served. The Task Force recommended that Double S Meats be offered the opportunity to purchase the MSU from the Methow Conservancy, at fair-market value, at the end of the 5-year project.

The proposal clarified that Double S Meats would be the sole operator of the MSU, and that the Methow Conservancy would not be involved in or responsible for the day-to-day operation of the unit. The Methow Conservancy's role would be holding the lease and offering programmatic support that might include:

- gathering feedback from livestock producers and ensuring their needs were heard and addressed;
- offering workshops to farmers and ranchers to help expand their niche market opportunities for USDA-inspected product;
- organizing producer meetings to help with long-term planning and scheduling; and
- helping Double S Meats build a user-friendly online calendar to further tackle seasonality issues.

In addition to the day-to-day operation of the MSU, Double S would also be responsible for applying to the USDA for a Grant of Inspection; securing any additional local permits; conducting

[64] Mary Johnston, Methow Conservancy Board President; David Schooler, Board Secretary; Jason Paulsen, Executive Director; Jeanne White, Land Program Manager; Sarah Brooks, Associate Director.

site development to create a permanent docking station for the MSU; and conducting any repairs or maintenance on the MSU.

The proposal suggested that Double S Meats pay a variable lease rate to the Methow Conservancy, based on the number of animals processed in the MSU. Rather than pay a fixed annual lease, Double S would essentially pay a "use fee," for example, $12/beef, $4/pig, and $2/sheep or goat. This "pay-by-use" model was used by the CADC of Colville, and was preferred by Double S Meats. A variable lease rate would help the operator weather the leaner shoulder seasons, and would not require payment when the unit was not generating much revenue. The Task Force further recommended that Double S Meats be offered a 5-year, $30,000, low-interest AFR loan for some of the costs associated with site development.[65]

Ultimately, the Methow Conservancy Board would approve a resolution at the September Board Meeting, committing resources and staff time to the project. To convince the Board, the Task Force needed to carefully address potential concerns for the organization. The Task Force met frequently between the July and September Board meetings, and worked to evaluate a number of potential concerns for the non-profit organization, including liabilities associated with owning piece of equipment such as a MSU; the costs of acquiring the unit and implementing a 5-year project; the alignment of the potential project's impact with the organization's charitable purpose; and the risk of impermissible private benefit incurred by a collaboration with a private business that might threaten the Methow Conservancy's tax-exempt status.

5.1 COSTS AND ORGANIZATIONAL COMMITMENT

The Task Force evaluated the project costs; organizational commitment; and opportunity costs to the organization of using funds and staff resources that would not be available for other projects.

Based on information provided by Bruce Dunlop, the Task Force estimated that the cost of acquiring the unit would be approximately $50,000, and that an additional $30,000 should be offered as a loan to Double S Meats for site-development work. The Task Force further recommended that $6,000 be budgeted for legal counsel and programming expenses. Including staff time, the estimated project cost would be $108,000 to the organization.

The expected project revenues from lease payments over the course of five years were approximately $24,000, based on a per-animal use fee of $12/beef, $4/pig, and $2/sheep or goat. Additionally, the Methow Conservancy would expect to recuperate approximately $32,000 in loan principal and interest payments. At the end of the project, the Methow Conservancy would also expect to recuperate approximately $30,000 in the sale of the MSU. The primary, unrecoverable cost to the organization would be staff time, totaling approximately $22,000. Initially, staff time would be expected to be high, and would decrease in subsequent years: 200 hours in Y1; 150 hours in Y2; 125 hours in Y3; 100 hours each in Y4 and Y5.

[65] The Applicable Federal Rate (AFR) is set by the IRS every month, and mandates a minimum interest rate to be collected for short, mid, and long-term loans. A five-year loan would be considered a mid-term loan, and at the time of writing was 2.82 to 2.86%, depending on the compounding schedule. https://www.irs.gov/pub/irs-drop/rr-18-23.pdf

5.2 IMPACT AND ALIGNMENT WITH CHARITABLE PURPOSES

In addition to evaluating the costs of the potential project, the Task Force also evaluated the benefits, and worked to clarify how the project outcomes aligned with the Methow Conservancy's charitable purpose.

Because the Methow Conservancy's charitable mission is defined by protecting conservation values within the geographic area of the Methow Valley watershed, it was important to evaluate how the potential project would impact farmers and ranchers in the Methow Valley, specifically. While the feasibility study had focused on the impact of improved access to USDA-inspected processing to producers, county-wide, the Task Force wanted to know more about the impact to Methow Valley farms.

ANNUAL IMPACT TO METHOW VALLEY FARMS	beef	pigs	sheep	goats
Numbers of surveyed farms raising primarily:	15	2	2	2
Animals currently being processed USDA	60	25	100	--
Additional animals to be raised, for established USDA markets	10	50	100	--
Animals processed custom, likely conversion to USDA	30	--	30	--
Animals sold live, likely preference for USDA slaughter	--	--	--	215
Estimated Methow Valley demand for USDA processing	**100**	**75**	**230**	**100**
Estimated value of USDA-inspected meat, to producers	$250,000	$45,000	$ 40,250	$32,250
				$367,500

The Task Force then worked to articulate ***how this positive economic impact to Methow Valley farmers and ranchers would further the charitable purposes of the Methow Conservancy.*** As a conservation land trust, the Methow Conservancy's charitable purpose is "to acquire, hold, preserve and dispose of land, easements, leases, or other improvements to land, with an emphasis on the lands in the Methow Valley, for the purposes of: protecting wetlands, riparian areas, forests, streams, lakes, ponds, scenic areas, and ecological, historical, or other natural features; ***preserving agricultural areas***; providing community trail systems, future park lands and recreational facilities; providing areas for the education of the public in the principles of conservation of historic and natural areas, and for the preservation of interest therein."[66]

The Task Force determined that helping farms and ranches be economically successful was an important tool for ***keeping land in working agriculture, and thereby protected from development.*** The Task Force also noted that of the 8,700 protected acres under conservation easement with the Methow Conservancy, 1,700 acres were working, dryland range and another 1,300 acres were irrigated pasture or hay fields. That meant that 3,000 of the Methow Conservancy's conserved acres, or 34% of easements, supported livestock production in some way. It was also noted by the Task Force that a 2006 Community Needs Assessment[67] concluded that preserving a *working*

[66] Nonprofit Articles of Incorporation of the Methow Valley Land Trust. Department of the Secretary of Washington State, September 1997.
[67] Methow Conservancy, "Community Needs Assessment 2.0." 2014.

agricultural landscape was perceived by the community as a critical part of the Methow Conservancy's work. In the Methow Conservancy's ongoing effort to better understand the needs of valley farmers and ranchers and to offer meaningful support, it had become clear that the farming community's needs were very diverse. The Task Force concluded that offering assistance to livestock producers through improved access to USDA processing might be one of the singularly most impactful ways to support the economic success of the greatest number of agriculturalists.

5.3 RISKS TO THE ORGANIZATION

The Task Force spent the bulk of efforts evaluating the diverse risks of the proposed project. As a conservation land trust, the Methow Conservancy's primary activities are the protection of land from development, through the acquisition of permanent "conservation easements" on private properties. Conserved lands remains under private ownership, but the Methow Conservancy essentially purchases the development rights from the landowner: ensuring that prime agricultural lands or prime habitat areas remain intact, in perpetuity. The bulk of the Methow Conservancy's work has involved acquiring conservation easements, and monitoring them in perpetuity. In recent years, the organization has increasingly played a role as a community facilitator in diverse scenarios that foster a community ethic of conservation and appreciation for the natural and agricultural environments.

Undertaking to own and lease a slaughter unit, however, was undeniably outside of the organization's "comfort zone." While the Board of Directors was extremely receptive to the idea and quickly understood the potential impact to farms and ranches in the Methow Valley, they naturally had a variety of concerns, and wanted to fully evaluate the risks. The two primary areas of concern were the ***liability*** of owning slaughter equipment and any ***impermissible private benefit*** that might arise through a collaboration with a for-profit business.

Liability

The Task Force was concerned with public and worker safety, food-safety liabilities, and additional liabilities and potential expenses associated with ownership of an asset like a MSU. In addressing these concerns, the project manager was able to draw on case studies from existing MSU or small-scale USDA slaughter plant projects. In particular, the Pierce County Conservation District (PCCD), which owns and leases a MSU to Puget Sound Processors, LLC, was able to provide a copy of their lease template. The template proved indispensable for the Task Force's work, and helpted to address many of these concerns.

The PCCD's lease document offered a template for clearly establishing that the Leasee would be the sole responsible party for the operation of the MSU. The Leasee, or Double S Meats, would hold harmless the Lessor. The Lessor, or the Methow Conservancy, would not be involved in or liable for the day-to-day operation of the unit. The collaboration between Double S Meats and the Methow Conservancy would **not** be a formal partnership, but simply a lease arrangement. The Methow Conservancy would not share any of the profits, losses, or liabilities of operating the MSU with Double S Meats.

With regard to public safety, it was determined that Double S Meats should carry their own liability insurance, and that the Methow Conservancy would require proof of the insurance as part of the lease agreement. In accordance with Washington State Law, Double S Meats would carry L&I insurance for their employees, to cover injury in the case of a workplace accident. With regard to food safety, Double S Meats would similarly provide proof of product liability insurance and assume sole responsibility for food safety measures and product liability. Furthermore, it was noted that the USDA's Grant of Inspection (GOI) would be held by the operator of the MSU, Double S Meats. Under a GOI, the USDA requires and actively oversees the implementation of a "Hazard Analysis Critical Control Point" (HACCP) plan, as well as "Sanitation Standard Operating Procedures," (SSOP) which would help to mitigate food safety risks.

Lastly, with respect to potential expenses and liabilities of owning and maintaining a MSU, the Task Force recommended that Double S Meats be responsible for all maintenance and repair, and that Double S Meats be required to list the Methow Conservancy as an additional insured for the MSU under Double S Meat's private property insurance policy. Methow Conservancy staff would conduct a quarterly inspection, to ensure that the MSU was well maintained, and the lease agreement would articulate a process for enforcing repairs and maintenance.

Impermissible Private Benefit

Another primary concern of the Task Force was the potential risk of creating impermissible private benefit for a private business, thereby jeopardizing the Methow Conservancy's tax-exempt, charitable status. Collaborations and partnerships between non-profit and for-profit entities are common, however, this was uncharted territory for the Methow Conservancy. The Methow Conservancy Board wanted to know: ***under what conditions was it permissible for a non-profit, charitable organization to assist a for-profit business in a venture that would allow the business to generate additional profit?***

After researching and consulting with legal counsel, the Task Force determined that private benefit is permissible in circumstances where the charitable purpose of a non-profit entity cannot otherwise be accomplished. In these circumstances, the private benefit is considered ***incidental*** and ***necessary*** as a means to furthering the charitable mission of the organization. In this case, the activity or project must also be ***substantially related*** to the charitable purpose of that organization. The Task Force determined that a strong case could be made to show the charitable activity of increasing access to USDA-inspected slaughter and supporting the viability of small farms could not be accomplished without some amount of necessary and incidental benefit to Double S Meats.

Of critical importance in collaborations with for-profit entities is careful ***documentation***. The non-profit must document the project's justification and alignment with the charitable purposes of the organization. Documentation would include Board resolutions, any supporting materials, lease agreements, memorandums of understanding, etc. The Task Force further determined that documentation should include a narrative describing the context of limited opportunities for economic development in Okanogan County; that Double S Meats had proven the only likely candidate for USDA-inspected slaughter; and why it was unlikely that Double S Meats would undertake an endeavor to offer USDA slaughter without some assistance. This documentation

would help clarify the incidental and necessary nature of the potential private benefit to Double S Meats.

In these materials, the Methow Conservancy would also want to demonstrate that all arrangements made with the for-profit entity were ***arm's length*** and represent ***fair-market value***. Fortunately, the Methow Conservancy could refer to the examples of the Lopez Community Land Trust, the Pierce County Conservation District, and the Community Agriculture Development Center of Colville to demonstrate that the lease rate offered to Double S Meats for the MSU would be within an established, fair-market value. By articulating in a lease agreement that Double S Meats would be solely responsible and liable for the day-to-day operation of the MSU, the Methow Conservancy could demonstrate an arms-length relationship.

The Task Force further clarified that in the case of the Methow Conservancy, a potential future project conducted with Double S Meats should be referred to as a ***collaboration*** -- **not** a formal partnership. A partnership might imply that the Methow Conservancy shared in profits, losses, or liabilities with Double S Meats. Formal partnerships with for-profit entities require significant additional documentation and legal counsel to demonstrate that the charitable purposes of the non-profit organization cannot be subordinated by private interests or liabilities.

There was also some concern from the Methow Conservancy Board about the potential need to report "Unrelated Business Income Tax" (UBIT) to the IRS, for income generated by the MSU lease fees. Generally, non-profits are exempt from paying taxes on loan interests or income from the lease of real property -- but not exempt from taxes on income from the lease of private property, such as equipment. In this scenario, income generated from the lease of a MSU would not automatically be tax-exempt. However, if the activity were *substantially related* to the charitable purposes of the organization, income generated from the lease would be tax exempt. After conferring with legal counsel, the Task Force determined that a strong argument could be made and documented that the activity of leasing a MSU was substantially related to the charitable mission of the Methow Conservancy, and that UBIT would not apply.

Lastly, the Task Force wanted to understand any additional considerations for a non-profit wishing to offer a loan to a for-profit business. Under what conditions would it be permissible to offer a low-interest loan to Double S Meats for site development? Legal counsel suggested that offering a loan to Double S Meats was permissible, so long as the loan rate was not below the IRS minimum mandated Applicable Federal Rate (AFR). Considering how the loan would be secured was also important. The Task Force suggested that, as much as possible, the loan be made for items, such as refrigeration units, corral panels, the knock box, or holding tank, that could be sold in the worst case scenario, to recuperate the loan. It was also suggested that a filing be made under the state's Uniform Commercial Code, to record the loan.

The Methow Conservancy Board had a few additional questions: ***Had other land trusts or organizations in the region undertaken similar projects? What would the optics of this kind of project be?***

The Board was heartened to know that there were several other, successful regional efforts to increase producer access to USDA-inspected livestock processing, and that other land trusts in the

West had already explored diverse ways to support farmers and ranchers producing farm-raised meats. In addition to the projects lead by the Lopez Community Land Trust (LCLT), the Community Agriculture (CADC), and the Pierce County Conservation District (PCCD), a few land trusts and conservation groups in the West had also been involved in brand development, proving that this was not entirely new territory for conservation land trusts. The ***American Prairie Reserve*** had developed a brand for conservation-minded ranchers in Montana, called Wild Sky Beef. The ***Sierra Foothills Conservancy*** in California had developed a marketing and sales program for their conservators called Sierra Lands Beef.

The Board was concerned with how the public might perceive the Methow Conservancy's involvement in a slaughterhouse project. However, the Board was confident that with some careful story telling, the community and membership could be led to understand that the slaughterhouse project would:

- Allow small, family farms and ranches to expand and grow into new market opportunities;
- Support the economic success of small farms, thereby keeping more land in working agriculture and protecting it from development;
- Support small farms that typically produce farm-raised meats with the highest standards of sustainability, compassion, and humane handling;
- Ensure humane slaughter, under strict USDA oversight;
- Offer local consumers increased opportunities to support small farms.

Summary

The Methow Conservancy, while extremely eager to see small farms benefit from improved access to USDA-inspected livestock slaughter, had to carefully consider the extent to which a non-profit organization could offer support to a private, for-profit business. After considerable research and due diligence, the organization determined the conditions under which the Methow Conservancy could collaborate with Double S Meats. The organization further evaluated other risks, including liability issues, financial risk, mission creep, and public perception. The examples of organizations like the LCLT, the CADC, and PCCD were particularly helpful in shedding light on many of these considerations. Ultimately, the Methow Conservancy Board of Directors could agree that this project represented a rare and exciting opportunity to address a long-standing community need, and to support the economic vibrancy of small farms and working agricultural landscapes in the region.

6.0 POTENTIAL BARRIERS TO SUCCESS

The study's review of technical, market, and financial feasibility indicates that an appropriately-sized, strategically-implemented endeavor to serve livestock producers of Okanogan County and neighboring regions could be successful. It should be noted that there are many potential barriers to success, the full impacts of which are difficult to predict in the planning stage. We have carefully considered the uncertainty of demand estimates and have developed an incremental strategy for testing demand that would allow Double S Meats to determine whether future investment in a permanent kill floor is feasible. However, several potential barriers and uncertainties merit further consideration, as any potential project moves forward. In particular, ***access to skilled labor***, ***seasonality of demand***, ***variability and specificity of producer needs***, ***the challenges of maintaining producer trust***, ***future competition***, ***lack of opportunities to add value to byproducts***, and ***proximity to end consumers*** may limit the opportunities for future success.

Access to Skilled Labor

From conversations with small meat plants across our region, we know that finding labor with the willingness to do the strenuous and demanding work of butchering or slaughtering may be one of the biggest challenges to future success.[68] Double S Meats may need to consider looking beyond the local workforce, and actively recruit skilled labor to meet their increased labor needs. Suggestions made to the study team include recruiting butchers through the Northwest Meat Processors Network; from the Tri Cities area in southeast Washington, where the state's industrial meat packing plants are located; from Greeley, Colorado, which has an exceptionally high concentration of skilled butchers; or from the nearby Brewster area, which has a large Hispanic population that is mostly engaged in orcharding, but that might be present promising opportunities for recruitment. Future efforts could also include collaboration with a Veterans' training program or Okanogan County's WorkSource program, to develop an apprenticeship or training program for butchers.

Seasonality

The seasonality of harvest is the number-one challenge for small meat plants. Especially in a region with harsh winters and significant beef production, this challenge is even greater. Most producers want to harvest in the fall and avoid the great expense of feeding animals through the winter. For beef producers, it is also important to harvest cattle while they are "on the gain." Cattle struggle to gain weight during the hot summer months, and it's both challenging and expensive to keep cattle gaining weight during the winter and early spring, when pasture is not available. As a result, meat processors in the region are extremely busy between September and December. But by mid-winter, demand for services tapers off, and work can actually be quite slow.

While producers express frustration with the unavailability of appointments, small meat plants often express frustration that producers all want to schedule at the same time. For small meat plants, maintaining profitability during the shoulder season is a struggle. Double S Meats, for example, continues to pay employees for a full eight-hour day, even though there are often not eight hours of work. However, they recognize that if they offered employees fewer hours, or laid them off temporarily -- they might loose that skilled labor permanently.

[68] Interviews: Shane Nelson, Tracy Smaciarz, Dr. Paul Kuber.

Offering USDA-inspected services should help to alleviate seasonality, to a degree. Producers with established markets for USDA product are more likely to need their farm-raised meat products to be available all year long, whereas producers with custom-exempt markets have typically trained customers to expect product in the fall.

To address seasonality and extend production into the shoulder season, Double S Meats will want to consider how to best serve producers of pork, lamb, and goats. Pork producers typically have the greatest flexibility to harvest at all times of the year. However, pork producers generally desire smoking and curing services. Double S Meats has expressed hesitation to process value-added products that require additional HACCP plans, such as smoked or cured, ready-to-eat meats. However, Shane Nelson has suggested that hams and bacons could be partially-smoked and clearly labeled as **not** fully-cooked, thus avoiding some of the requirements associated with cured meats. That said, our survey indicated that many producers would like to process their farm-raised meats as jerky, pepperoni, and other ready-to-eat cured meats – so not capturing this demand represents a significant, lost opportunity. Our outreach further indicates that the majority of pork producers (75% of respondents) have niche markets and heritage breeds that require scald-and-scrape services, which allow for pork to be de-haired and processed with the skin on. The closest facility that offers USDA-inspected scalding services is McCary's Meats, in Mesa, Washington – nearly 200 miles, one-way from most points in Okanogan County. Thinking strategically about how to offer services that are desired by pork producers could offer a competitive advantage and opportunities to acquire steady business during the shoulder season. Our outreach leads us to believe that there is a strong network of ***small-scale, pasture-raised, heritage pork producers*** in the state that actively share information, resources, and ideas – and that ***a facility that could actively work to meet their needs would pull producers from across the entire state***.[69]

Lamb and goat producers generally like to avoid winter feeding costs, when possible; however, our outreach indicates that these producers ***are willing to be flexible, so long as they can plan ahead with certainty and be assured of getting slaughter dates***.

An idea that has developed over the course of the study process is that Double S Meats could create an online calendar, to allow producers to see availability of future slaughter dates. Scheduling could conceivably be done online – or at the least, producers could look at the live calendar, and then call the facility to schedule an appointment. Double S Meats could also offer discounts for producers willing to process during the shoulder season. Producers willing to wait until after the fall harvest would expend more on feed costs, but would also spend less on processing. By developing an online calendar that displayed available slaughter dates and variable pricing, producers could make informed decisions about the costs and benefits of processing during the shoulder season. An online calendar would also be a powerful visual tool to educate producers about the need to schedule well in advance.

[69] Interviews: Deb Jones-Schuler, Bill Kresge.

Diverse Producer Needs

Navigating the diversity of producer needs and desires is another perennial challenge for small meat plants. Small farms serving niche markets can have very specific requests, some of which can be extremely time-consuming for the meat processor to fulfill. It will be important for Double S Meats to find a balance between offering specialized cut sheets, and ensuring efficient and profitable production. WSU Livestock Extension agent Dr. Paul Kuber suggested that producers could be invited to participate in a process to develop two standard cut sheets for each species, that would serve the greatest number of producers' needs. Double S Meats could still offer special cut selections -- at an upcharge. Finding standard cut sheets that satisfy the majority of producers needs could increase efficiency on the cut floor, and also improve consistency of cuts for each species. Producers have expressed frustration with experiences at meat plants where the consistency of the cutting varied by staff member. For producers, the uncertainty of how a cut sheet will be interpreted can be extremely stressful, and can have a devastating impact on the end value of their niche product.

Maintaining Producer Trust

What has become clear through outreach with producers is that ***first impressions matter***. We've heard numerous accounts of producers taking their animals to small plants for the first time, having a bad experience of some kind, and swearing to never return. These experiences have included gruff customer service; poor communication; rough handling of animals or inadequate holding pens; meat that was hung for too long; products that didn't reflect cut selections; unsatisfactory labeling; or uncertainty about whether they received all of their product.

It is important for any successful small meat plant to take into consideration the effort, expense, and emotion that have gone into raising each farm animal. Producers often feel that they are placing years of work, care, and investment into the hands of a butcher, who can change the value of their end product in the course of several hours. It is not surprising that producers can be quick to react when their experience or end product doesn't meet their high expectations.

One of the greatest risks for Double S Meats will be losing customers in the beginning. As the staff at Double S Meats climbs the learning curve, they will naturally and inevitably make mistakes. How they address these mistakes will be of critical importance to producers. ***Double S Meats must find ways to maintain producer trust and loyalty through the learning curve, and address mistakes promptly.*** Even though Double S Meats may not able to correct a mistake once it is made, acknowledging the mistake and communicating to producers about how it will be avoided in the future will go a long way to building trust and encouraging patience on the part of producers. For a more detailed discussion of opportunities and strategies for encouraging producer trust and loyalty, see Section 7.

Future Competition

Throughout the course of this feasibility study, there have been suggestions that one of the biggest cattle operations in the region has been considering building a new, USDA-inspected meat plant in Mallot, capable of slaughtering as many as 100 head of beef per day. While the likelihood of this possible new plant is unknown, the potential impact to a very small plant in Tonasket may not be very significant. A future plant processing 100 head per day would likely serve only cattle producers, and would most likely purchase live, finished beef or even calves from larger ranches

that are able to offer both scale and consistency of supply. It is likely that a feedlot and finishing program would be a component of this scale of facility.

The feasibility study identified a very different type of demand, existing among the small and very diverse farms and ranches across the county that have already developed niche markets for their farm-raised meat products. Given the potential scale and target market of the rumored operation, it seems fairly unlikely that such a facility would find it convenient or economical to serve the diverse needs of very small producers.

Lost Revenue Streams for Small Plants

As a component of this feasibility study, we evaluated the potential for developing "ancillary" businesses to capture value from by-products such as blood, bones, hides, glands, organs, offal, and tallow. Our initial hope had been that developing value-added opportunities, such as compost, bone meal, bone broth, blood meal, etc., could help a small plant generate more profit. However, our research concluded exactly the opposite: that it is rarely cost-effective for small plants to develop the needed infrastructure to turn by-products into sellable products. Because waste streams for small plants that process diverse species are not consistent; because waste streams are fairly small compared to large plants; and because of the extremely low-margins for these products, developing ancillary businesses began to seem costly and unrealistic. Furthermore, case studies show that small plants are usually best served by focusing on the primary business activities of slaughter, cutting, and value-added processing (such as smoking, curing, sausage, etc.). *(See Appendix G, for Kathryn Quanbeck's summary report on ancillary business opportunities.)*

Distance to Markets for Farm-Raised Meats

Unfortunately, Tonasket is far removed from any of Washington State's urban centers. Spokane is a three-hour drive; Seattle is a four or five-hour drive; and Bellingham is a four-hour drive in the summer, but nearly six hours in the winter. Tonasket is not located within proximity to the I-90 corridor, which makes any hopes of dramatically expanding market access somewhat unrealistic for producers in the future. If the predicted demand for USDA services had come from larger ranches with an eye on regional or even national brand development – this barrier could present significant limitations to growth and success. At larger scales, economical access to transportation arteries are a critical factor in maintaining competitive pricing and ensuring the success and profitability of a larger brand. However, the demand identified by the survey process comes from small farms in Okanogan County that have niche market opportunities and are able to charge a premium that helps to compensate for the travel distances.

7.0 UNIQUE OPPORTUNITIES

While there are admittedly many potential barriers to success, there are also some unique opportunities that could result from a potential collaboration between the Methow Conservancy and Double S Meats. By serving as a facilitator, the Methow Conservancy could help to promote better understanding among livestock producers about the needs of a small meat processor, and simultaneously ensure that producers needs are heard and addressed by Double S Meats. Over the course of the potential 5-year project, the Methow Conservancy could work to ensure that producers have a vested interest in the success of Double S Meats: by cultivating transparency and a sense of collaboration among producers and staff of Double S Meats. In a supporting role, the Methow Conservancy could also offer educational workshops to producers, expanding their knowledge of niche market opportunities and increasing demand for services in the long-run.

When asked to help envision other ways that the Methow Conservancy could play a supporting role to ensure a successful project outcome, the Producer Advisory Committee offered numerous ideas and details about ***how to ensure producer buy-in and customer loyalty***. In particular, they described the elements of a "customer experience**"** that are the most important to livestock producers. The Producer Advisory Committee also articulated a desire that Double S Meats and any future producer advisory group work ***as a team, to build producer trust, encourage a spirit of transparency and collaboration, and build a greater sense of community that would include producers as well as the staff team of Double S Meats.***

Building a Team

The premise of a future collaboration between the Methow Conservancy and Double S Meats has been that improved access to USDA-inspected slaughter is a ***community need*** among small farms and ranches in Okanogan County. Serving that community need would require a strong spirit of collaboration among Double S Meats staff, livestock producers, and the Methow Conservancy. An important component of success would be fostering open communication and dialogue between Double S Meats and livestock producers that allows producers to feel their needs are heard, but that also allows Double S Meats staff to feel appreciated for the skilled and critically-important role they play ensuring the high value of producers' meat products.

In future project implementation, maintaining an advisory producer group would provide a nexus between Double S Meats staff and livestock producers in the region. Producer advisors could be initial points of contact for other livestock producers who have questions, concerns, or complaints. These producer advisors could serve as a buffer for Double S Meats staff, taking feedback from other producers and acknowledging their complaints, while finding ways to constructively convey feedback to Double S Meats. These advisory producers could also look for opportunities to help educate livestock producers about the needs of Double S Meats and help keep producers' expectations reasonable. At the end of the day, the advisory producers could play an instrumental role in ***building producer trust, encouraging patience during the learning curve, developing a sense of community around local processing, and fostering long-term producer buy-in to the success of Double S Meats.***

It was suggested that a seeking advisory producers from each geographic area (ie: Methow Valley, Okanogan/Omak, Tonasket, Oroville, Republic/Wauconda, Nespelem, Brewster/Pateros) could be a good approach for ensuring that producers across the county felt included in the project. It was

further suggested that quarterly meetings among advisory producers, Double S Meats staff, and the Methow Conservancy could be an ideal format for facilitating open dialogue, and addressing concerns or opportunities to build producer trust and loyalty.

Finding ways to show producer appreciation for the skilled and challenging work of Double S Meats staff will be another important component of building an effective team to serve this community need. Producers can be extremely quick to offer criticism. However, it's critically important that butcher staff receive positive feedback and appreciation for the crucial role they play in the quality end product and success of each farm. The feasibility study's Producer Advisory Committee suggested that future project implementation include an effort to give staff at Double S Meat regular farm tours and opportunities to appreciate how their work supports farm livelihoods. Further suggestions were made that perhaps the project could work with the Washington State University (WSU) Extension, and bring faculty or staff to conduct workshops and trainings – so that producers and Double S Meat staff could learn about specialty cuts and niche markets, together.

Transparency

As part of the feasibility study process, we determined that Double S Meats already has a strong positive reputation among livestock producers. Our outreach indicated that producers have at times questioned whether they ultimately got all of their meat back from certain processor facilities in the region – however, that is not a narrative we heard, even once, about Double S Meats. It should be mentioned that the Double S Meats' cutting room can be viewed by the general public, through a giant window in the front entry -- a facility design choice that clearly encourages transparency.

Although our outreach indicates that Double S Meats enjoys a relatively high level of trust from producers, we believe that pro-active efforts to promote transparency and producer education will be important components of a successful project. Creating a transparent structure for collecting and addressing complaints will be critical. Particularly in a context where Double S Meats will be serving many beginning, small-scale farmers and ranchers that are still learning what yields to expect, it will be important for Double S Meats and the project team to develop outreach and educational materials. Quite often, producers can be unpleasantly surprised by the final yield of cut-and-wrapped product.

For example, a 1200-pound beef will typically result in an average 750 pounds of "hanging-weight," once the head, hide, feet, fat layer, and offal have been removed. After de-boning, the final weight of cut-and-wrap product is typically 400 +/- pounds. An excessively fat, or poorly-muscled animal might only yield 650 pounds of meat at hanging-weight, and 350 pounds of cut-and-wrapped product. Depending on the "condition score" of the animal, the final yield of cut-and-wrapped product can be quite different among animals of the exact same live weight.[70]

Providing producers with information, ahead of processing, about reasonable yields based on the condition score of the animal and the live weight, will help inform producer expectations and

[70] "Understanding Beef Carcass Yields and Losses During Processing." PennState Extension, August 2016: https://extension.psu.edu/understanding-beef-carcass-yields-and-losses-during-processing

prevent potential misunderstandings. This standard information could be offered on Double S Meats' website, on a Frequently-Asked Questions (FAQ) page, or incorporated as a pre-amble to the cut-and-wrap sheet. Offering producers feedback about the condition score of their animal would also help inform future management decisions that could improve the end the quality of their product. The Producer Advisory Committee suggested that the following data be gathered and provided to producers: live animal weight, hot and wet hanging weight, hanging weight just prior to cut-and-wrap, weights for each finished cut. The Advisory Committee further suggested that perhaps a photograph of each animal in the chute could be taken (from behind), to document the condition score. All of this information for each producer could be kept on-file, or perhaps online, which would allow producers easy access to their historical data about each animal's yield.

Online Scheduling and Cut Sheets

Conversations with Double S Meats and the Producer Advisory Committee also indicate potential for the development of online tools that could serve to alleviate some burden on Double S Meats staff, while also serving as educational opportunities for producers. In particular, suggestions were made that Double S Meats offer an online calendar of slaughter dates, an online cut sheet form, and possibly even some kind of future online account for each producer, where they could access historical yield data from each carcass.

An online calendar, showing availability of slaughter dates would allow producers to see how far in advance they should schedule slaughter dates. A live, visual calendar would also help producers understand what their options are, even if appointments during the height of the harvest season are not available. Allowing producers to sign up for dates online would also greatly reduce the burden to staff members, who currently spend significant time on the phone taking appointments and walking through cut sheets with producers. Some discussion of variable pricing suggests that Double S Meats could use an online calendar to encourage producers to process outside of the shoulder season, by offering discounts during the slower production months. There was even a suggestion that perhaps the online platform could serve to connect producers from certain areas of the county, who might be looking to process at a similar time, and could work cooperatively to haul animals to Double S Meats, or to backhaul product.

Online cut sheets are another opportunity to reduce the burden on staff, while also offering an educational opportunity for producers. Typically, Double S Meats staff spend a lot of time on the phone with producers, especially new and beginning producers, educating them about the appropriate cut selections. Much of this information could be shared online, reducing the need for staff to walk through each choice with producers. It was further suggested, by Dr. Paul Kuber, that Double S Meats consider choosing just two "universal cut sheets" for each species. Producers could always make special cut requests, for an additional fee. Limiting the cut selections to a few universal cut sheets would increase the efficiency for Double S Meats staff, and also likely increase the consistency of cuts for each species. Producers could be engaged in the process of determining which "universal cut sheets" were most representative of the needs of the most farms and ranches.

Ongoing Education for Producers

The Producer Advisory Committee was particularly excited by the prospect that a future collaborative project could bring additional educational opportunities to livestock producers. In particular, Producer Advisory Committee expressed interest in working with WSU Extension, to

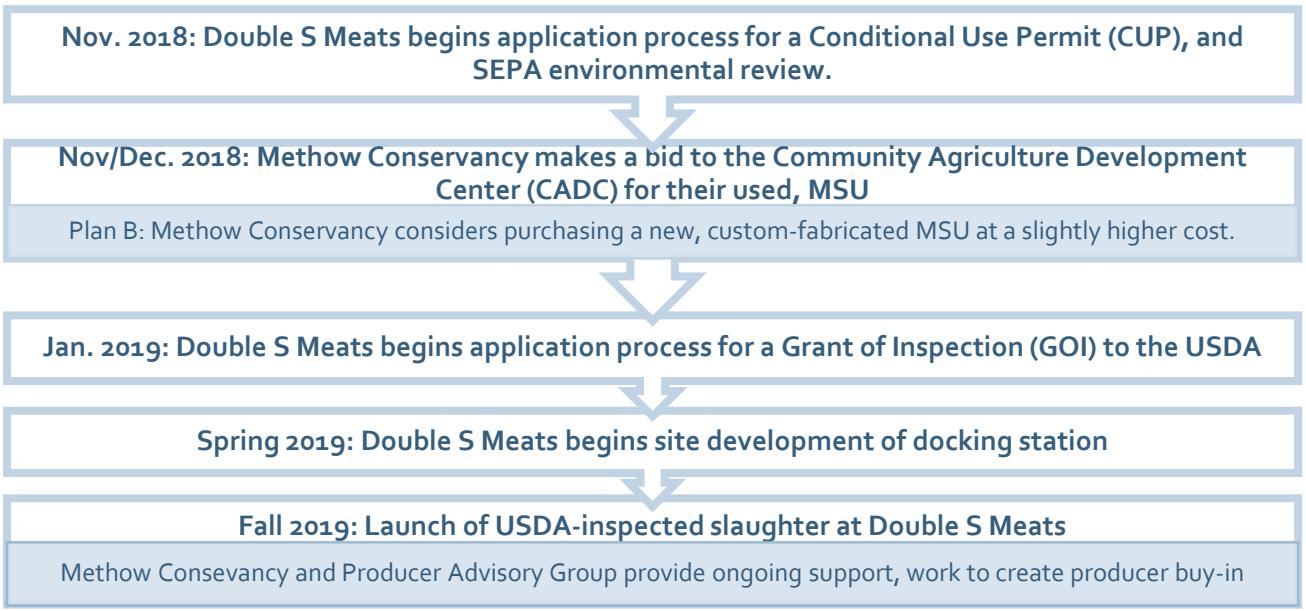
possibly host the popular "Beef 300" workshop series in Okanogan County, and to host similar workshop series for lamb or pork. The suggestion was made that perhaps Double S Meat staff could be encouraged to attend these workshops -- or even that WSU Meat Science and Extension staff might be willing to offer some special technical trainings, on-site for Double S Meat staff and interested producers. What appealed to the Producer Advisory Committee about future workshop offerings was the ***opportunity for both producers and butcher staff to learn together; for butcher staff to network with producers; and for producers to network with each other*** -- thereby strengthening the spirit of collaboration and encouraging the mutual success of producer and processor.

8.0 SUMMARY AND NEXT STEPS

Our feasibility work revealed an estimated potential demand for USDA-inspected slaughter among diverse small farms in Okanogan County of 685 beef equivalents, annually. Research indicated that serving this need at Double S Meats, in Tonasket, was technically and financially feasible. Double S Meats demonstrated a willingness to undertake this new venture with an incremental approach and with ongoing support from livestock producers and the Methow Conservancy. While there are a number of risks and uncertainties for future implementation, collaboration among these diverse sectors would help to dilute and mitigate the risk, and would also offer some unique opportunities for success. What is particularly exciting about the proposed collaborative endeavor is the possibility of developing a spirit of cooperation and mutual appreciation among livestock producers and the staff Double S Meats.

At the time of writing of this final report, several next steps for project implementation were already in motion. The Methow Conservancy Board of Directors had passed a resolution to make a bid for the CADC's MSU. The Town of Tonasket had passed an amendment to the zoning code to allow Double S Meats to apply for a Conditional Use Permit (CUP), and planning staff had begun drafting a template CUP application and Environmental Checklist for Double S Meats. Gavin Pratt, owner of Double S Meats, had begun reviewing HACCP and SSOP templates available through the Niche Meats Processors Assistance Network (NMPAN), and had begun conversations with the Okanogan County Department of Public Health about possible upgrades to the existing septic.

Still uncertain at the time of writing was the CADC's evolving timeline to release a "Request for Proposals" and to begin accepting bids for their used MSU. Also unclear to the project team were reasonable expectations for a timeline of achieving a GOI inspection from the USDA, once an application had been submitted. However, despite some uncertainties about timelines, the project team was hopeful that Double S Meats might be operating under a USDA GOI as early as fall harvest of 2019.



9.0 APPENDIX

A: Dr. Paul Kuber, Preliminary Feasibility Assessment, Summary Report

B: Bruce Dunlop, Preliminary Feasibility Assessment, Summary Report

C: Greg Sherman, Preliminary Feasibility Assessment, Summary Report

D: Kayla McIntyre, Regional Market Context, Summary Report

E: Kathryn Quanbeck, Processing Plant Business Structures, Summary Report

F: Kathryn Quanbeck, Non-profit Ownership of MSU's in Washington State, Summary Report

G: Kathryn Quanbeck, Ancillary Business Opportunities, Summary Report

H: Town of Tonasket, Ordinance 793: Slaughterhouse Amendment to C-2 Zoning Code

APPENDIX A: Dr. Paul Kuber, Preliminary Feasibility Assessment, Summary Report

Report drafted for:
The Methow Conservancy
315 Riverside Avenue
Winthrop, WA 98862

Subject:
Justification and location for a meat harvest, processor and storage facility under USDA-FSIS Inspection

Contact:
Alyssa Jumars
509-996-2870

Report compiled by:
Paul S. Kuber, Ph.D.
NE Regional Livestock Extension Specialist
Washington State University Extension

The purpose of this report is to access the viability of two meat packing facilities in existence and one potential facility that would need to be constructed from an existing structure and there ability to shift or become a USDA harvest and processing facility. The push is to open doors for livestock producers in the Methow Valley casting a wider net for market options from product raised in the area.

The day started with a tour at Thomson's Custom Meats LLC in Twisp, WA. This facility was constructed in 1906 with a remodel in the 70's. The current state of the plant would require numerous resources and time to meet USDA inspection requirements. Throughout the plant there were exposed wood beams, chipping paint, cracks in floors and walls, particularly when we were transitioning from one room to another. Rails throughout were painted metal and chipping. Historically this was done to cover areas that were prone to rust. Modern or newly built facilities are using various materials that inhibit rust accumulation which is much easier for USDA to accept and approve. The flow of the facility and limited functional cooler space resulted in cooked and raw product being housed in the same cooler, unsealed. Further, the same processing room that housed the fabrication tables also housed the smokehouse in the center of that room. Again adding to the potential for raw and cooked product to come in contact with one another. The kill floor was not currently functioning. Numerous changes would have to take place in order for this to be brought into compliance for USDA. An appropriate animal handling and chute set-up in order to receive and move livestock to the harvest floor would have to he set in place with a complete redo of the existing facility. There seemed to be plenty of cooler and floor space to handle

the volume that was being discussed between all those that were in attendance. The challenge is that many of the mechanics and space is dated and 2/3 of the property were not in use which means that restoring coolers, walls, rails, etc. would be a cost limiting factor which is usually the case with outdated facilities. Further, in corners, wall transitions, and pass troughs or doorways there were areas that resembled mold in combination with some flaking paint. This would have to be addressed with a permanent solution to inhibit any further issues. The foot-print of the lot did not seem large enough if this was a full on USDA facility to handle waste management. That would have to be determined assuring that waste-water and other items do not contaminate the local municipal system.

We then toured another facility in the same region, which was a vacated structure that had an open floor plan to construct exactly what you'd want. The benefits of this type of structure would be a state of the art facility fitting the needs based on market assessment in the area. The challenge is that it is an undertaking for the gentleman that we were discussing with. This unit is essentially a shell with concrete floors. The existing concrete would have to be trenched in order to facilitate a drain system. The lot size seemed large enough for waste management to occur on site. Granted this is the closest to an open slate, yet it is still an existing structure, which could pose logistical challenges. Plenty of space to expand if need be.

Lastly, Double S Meats in Tonasket was a nice clean environment. The plant seemed small at first but the footprint was nice with easy access for expansion in all directions. The facility is already a USDA facility for fabrication and with a USDA inspector in house that makes an easier transition to adding a harvest floor and expansion. The harvest floor would be a new built which means that there should be no issues starting it from the ground up, correctly. The long-term storage was limited. With the addition of the kill floor could come additional cooler space. Further trailers with cooling units could be added out side, once product is packed, sealed and in boxes. Long-term storage could be accomplished through the containers used for overflow product. The key concern would be the amount of product you could push through this facility without some expansion. Again any added space would be new built and the result would be state of the art.

Summary:

In all facilities that we toured the biggest issue that I was trying to wrap my head around was the workforce. Using unemployment figures alone is not the best way to assess who you will capture in the work force. The food packing and more specifically the meat packing industry is a unique beast. Not everyone is willing to work in the environment that is offered in the meat processing industry. Meat processors and packers along with other food companies thrive as a result of the immigrant Hispanic populations in the US. Many facilities struggle in areas where these populations are limited or non-existent. My first thought was that Winthrop and Twisp would be better locations than Tonasket however the location and

distance to Brewster (a main thoroughfare for distribution) seemed similar. Seeing that is the case choosing an area that you will have a better chance to establish a dedicated and consistent workforce will aid in the success of the facility.

Aside from building from the ground up the facility that I would estimate to be the easiest transition to USDA will be that of the one in Tonasket. Having said that there are a lot of things that come to play and proper business planning and execution will yield results.

Please don't hesitate to run more ideas by me. I hope that this report helps in this Methow Conservancy endeavor for livestock producers.

APPENDIX B: Bruce Dunlop, Preliminary Feasibility Assessment, Summary Report

Facility Description:

The Double S facility is in a recently constructed building, purpose built for meat processing under federal inspection. The facility is currently operating under a federal grant of inspection for meat cutting activities and appears to be well maintained and operated. The carcass breaking and cutting activities done in the facility are done under a state custom exempt license and separated from the USDA Inspected activities by space and/or time.

USDA Inspected Slaughter and Carcass Processing:

The facility could easily add the processing of inspected carcasses using the existing space and equipment. There would need to be additions to the HACCP Plan and operating procedures to cover this added activity and some process procedures developed to maintain separation of inspected and non-inspected carcasses and final product.

Addition of animal slaughter alongside the existing building appears to be feasible. There will be some issues regarding live animal holding pens, water treatment and site grading to accommodate a kill facility but all of these should be possible to address. Water treatment is an unknown issue, as it appears the existing septic system may not be adequate for the water volume needed for the kill activities. The septic system designer who specified the existing system may be able to provide further detail regarding its capacity for the anticipated additional load.

I see three possible options for Inspected slaughter: 1) slaughter is done off site at another Inspected facility or mobile unit operating on local farms and/or docking stations where producers transport animals for processing, 2) a modular facility built off site and set in place at Double S Meats and 3) Addition of a kill floor as an extension to the building. Options 2 and 3 as well as docking stations entail the construction of live animal handling facilities and knocking chute and slaughter pad. Slaughter done offsite with an MSU could be considered as a backup option if on-site slaughter is not permitted for some reason.

There is a possibility of leasing or purchasing a used processing trailer formerly used in Ferry County for the Inspected slaughter of cattle and smaller species. Obtaining this trailer would be a lower cost way to test the market for these services and potentially could be in service by the fall of 2018. This unit has sufficient capacity to process the numbers of animals projected initially. At some point in the future a larger unit or fixed building could be added if needed. A certain investment into facilities at the facility would be required but most of that infrastructure would also be needed for a fixed building option.

Additional hanging cooler capacity will be desirable to allow more processing capacity. If a new modular facility is considered it would make sense to include carcass chilling as an integral part of that unit or as a fixed building component installed between the unit and the existing plant loading entrance.

Specific Questions:

Cooler Capacity and Expansion

There are two additional coolers to keep in mind for expansion of the existing plant. The first would be a chilling cooler capable of holding one day of production and bringing the hot carcasses down to temperature overnight. The chilling load is significant and by not burdening the existing aging cooler with this function will allow it to hold more carcasses for aging and limit the risk of over temperature events. A second aging cooler will be needed if the total plant capacity is increased. While not needed at this time, provision should be made for where it could be located in the future.

Docking Site for MSU or Modular Unit

The unit itself needs a level surface to be stationed on where the carcasses can be unloaded by rail directly into the plant rail system. Ideally this would include a carcass chilling cooler between the unit and the main hanging cooler in the plant. Electrical, water and drain hookups would be run from the building to support the utility needs of the unit. The water effluent from the unit is grey water (ie no sewage) and might be sent to the existing plant septic system if capacity allows. Alternate disposal might be some type of irrigation use on the existing property or collection and hauling to a waste treatment plant. Ideally the city sewer system will be extended to allow connection for the entire plant.

Stunning and bleeding of the animals is done outside the unit on a concrete pad. The pad would be approximately 15 ft square and sloped to a drain for collection of blood and wash water. Animals are brought to the location in a chute and are restrained in a headgate (for cattle) where they can be safely stunned. For sheep, goats and hogs a smaller closed chute that can hold one animal at a time would be more suitable.

The collected blood and pad wash water might not be allowed to go directly into a sewer system due to the high BOD due to the blood component. It is however an excellent fertilizer and options to use or sell it as a soil amendment product could be explored. The alternative would be some sort of pretreatment on site or collection and hauling to a disposal location.

USDA regulatory documents including a HACCP plan for slaughter will need to be prepared for any of the options. These will be in addition to those the facility already has for their current Inspected activities. This should be pretty straightforward and Dr. Sherman can provide more detail on what this will entail.

Other Design Considerations:

An important consideration is the flow of material through the facility. Ideally you want live animals to come in at one point and for product to always go forward through the various stages of the facility without back tracking. Raw and any cooked products as well as inspected and custom exempt product require separation in time or space to meet the USDA regulations. Thinking about these product flows before building is essential to having an efficient facility. Included with this report is a booklet published by Iowa State University regarding the design and building of small meat plants. This may be helpful as you evaluate the options for your situation.

Live animal handling facility design is important to allow animals to be unloaded and move into position calmly with minimal stress. Temple Grandin has done extraordinary work developing animal handling systems that work well. Her web site and publications are a great resource.

APPENDIX C: Greg Sherman, Preliminary Feasibility Assessment, Summary Report

Background; Purpose of Visit

GSC Northwest was contacted by the Methow Conservancy to assist in evaluating selected abattoirs in eastern Washington that are currently operating under custom exemption or retail exemption. The study is to determine feasibility for one or more of the plants to operate under USDA, FSIS inspection, in order to provide that option to farmers in this part of the state. Prior to the visit, the list of potential sites was reduced to one facility, Double S Meats in Tonasket, WA.

Existing Facility

Description of Existing Facility

At the time of the visit on April 19, 2018, operations had finished for the day. Double S Meats currently operates under USDA, FSIS inspection for processing operations, so they are accustomed to both the challenges and benefits that FSIS inspection brings. The processing room, cooler and storage areas meet FSIS requirements for sanitation and room finishes. There were some housekeeping issues in cold storage and some rust in the processing room, but neither is significant in the big picture.

Livestock carcasses are currently provided by one or more custom exempt operators, and FSIS-inspected boneless beef is used for the processing that is currently done under FSIS inspection.

Potential Challenges in Adding Slaughter Process

While challenges exist, the fundamental point of concern is potential for return on the investment in adding a slaughter floor to the existing facility. Other items for consideration include:

Cost of a brick and mortar addition to the plant for slaughter.
There are several options to consider for the slaughter floor. Brick and mortar construction is always the preferred option because the slaughter floor can be built to precisely meet the needs of the plant. However, there are modular units and mobile slaughter trailers that can also provide the same slaughter capability at lower cost and without much of the permitting process involved in permanent construction. There is currently an inactive modular unit in eastern Washington that might be available for lease. The primary advantage of a modular unit is that width is not limited to 12 feet as is the case for mobile units. The extra space that added width provides, and in particular for beef harvest, is immeasurable.

Addition on a drip cooler for cooling of warm carcasses.
A drip cooler is essential for cooling warm carcasses before they enter the aging cooler. Warm air and humidity can complicate aging of beef carcasses, and a drip cooler reduces both by bringing the carcasses down to 40° or less. After 24 hours in the drip cooler, carcasses entering the aging cooler are chilled and dry.

Availability of inspectors for slaughter activities.
FSIS is facing challenges of their own in terms of staffing new positions in the wake of a hiring freeze. However, we have found that FSIS is typically able to work with industry optimally through coordination, good communication and planning. FSIS cannot refuse a Grant of Inspection because of staffing concerns, and Double S is already operating under FSIS inspection, and with scheduling flexibility, cooperation and communication, staffing of slaughter should not pose an unsolvable problem.

Suitability for Addition of Slaughter Process

Ultimately, this is the question that Double S must answer. The addition of the slaughter process would result in a consistent supply of livestock carcasses for further processing. Return on the investment of a slaughter floor is the determining factor. It seems logical that the most cost-effective option would be to lease the inactive modular unit for 1-2 years. During that period, Double S can evaluate the benefit of slaughter operations on site prior to a commitment to brick and mortar, and ultimately build a kill floor to the optimal size.

There is a concrete pad on the south side of the existing plant that could be expanded to support a modular slaughter floor and drip cooler, and by location seamlessly mesh with the existing structure.

Additional Items for Discussion

Holding Pens

Are there any particular suggestions you would make about multi-species pen layout/placement/construction for the site?

If it is practical, the area at the bottom of the hill has ample space for livestock holding pens. Pen and alley construction on the official inspection premise (by the plant itself) should be constructed to meet the parameters of FSIS humane handling guidelines. Pens in the lower part of the property could easily not be included in the official premises for FSIS oversight.

Drip cooler/chiller + rails, to accommodate 10 beef/beef equivalents per 24hr period

What details should we keep in mind about the construction of a drip cooler, from a food-safety perspective?

The purpose of a drip cooler is to provide the initial chilling of fresh carcasses to 40° or less within 24 hours of slaughter. Additional benefits of a drip cooler are to prevent the high humidity from the freshly harvested livestock from complicating the aging process in the aging or sales cooler. The third benefit is that sanitation in the aging cooler is not compromised by purge from the fresh carcasses. The drip cooler can then be cleaned daily after carcasses are moved to the aging cooler, and the latter remains clean.

Expanded capacity for hanging cooler

What food-safety details should we keep in mind as we think about expanding the footprint and cooling capacity of the current hanging cooler -- to accommodate 40+ beef?

The primary consideration for any cooler, regardless of capacity, is air flow, which is based on volume of air moved by the cooling fans and space for air movement between carcasses. Inadequate air flow results in a slower rate of cooling, which could allow for pathogen growth on the surface of the carcass, and loss of quality of the internal muscle tissue. Basically, rapid carcass cooling results in a greater margin of safety and higher quality end products.

Expanded hot water supply for post-slaughter sanitation

Do you have a sense of how much hot water a typical small-plant slaughter floor, harvesting 20 beef/week would need?

It depends on what all hot water is used for. If hot water is used just for sanitation at the end of the day, the usage could be relatively low. If we use hot water as an antimicrobial application for each carcass, then the volume would be significantly higher. Most slaughter plants have in-line water heaters, which are much more efficient and cost effective. Bruce Dunlop is much more versed in water usage than I am, so he could probably provide a more accurate estimate. Mine would be little more than guess work.

Rendering

Are there any rules about how rendering is stored? Must it be stored under refrigeration, or removed at a certain frequency?

All offal and inedible should be held under refrigeration unless it is picked up daily. The odor of decomposing meat and by products attracts pests, vermin, and stinks. If a refrigerated area is not available, then it needs to be in a separate area from any processing and kept covered. With the summer heat in Tonasket, the odor would become unbearable very quickly, and FSIS could determine that an insanitary condition exists.

Docking site for Mobile Unit

- What are the requirements for an outdoor concrete pad for slaughter?

There are no specific requirements, but FSIS will react unfavorably to what they define as an ‘insanitary condition’; that would include pooling of water, blood and other waste. For infrequent slaughter operations, a simple gravel bed that is large and deep enough to allow water and other liquids to percolate through is adequate. For consistent slaughter in one location, a concrete pad sloping to a 4” drain has proven to be the best solution. The drain can connect to a drain field for dispersal of the water and other liquids.

- How is animal restraint accomplished for a "stationary" MPU situation?

A head catch and squeeze chute is optimal. Most mobile units have started with less, but after one or more mis-stuns they incorporate proper restraint. For a modular application, a squeeze chute is always the best if a true restrainer is not an option. They are typically cost-prohibitive. The problem with a manual squeeze chute is the difficulty of opening the side with the weight of a stunned beef on it. Hydraulic chutes work much better.

- Can you provide any additional insight about challenges, considerations that you have observed of mobile/stationary MPUs?
The greatest challenges that mobile units face is two-fold – a butcher that can consistently remove the hide and eviscerate a beef carcass in a sanitary manner in restricted space, and a cut and wrap where carcasses can be aged and processed. Double S will provide the latter.

Considerations for a Brick & Mortar kill floor?

Could you recommend any small plants that have a particularly well-designed kill floor -- that might be willing to share their layout? Are there any small plant designs that you have seen that handle multi-species particularly well? What are the features that make a small plant particularly efficient and food-safe? What are the common mistakes that you have seen in kill-floor designs?
Actually, my expertise is in HACCP design and implementation as well as regulatory issues, but not in slaughter floor layout. I have seen many variations in the flow from stunning to entry into the cooler, and all work. Most are set up the way the butcher prefers. I believe you have spoken with Tracy Smaciarz from Heritage Meats. He is much more knowledgeable than I am in that area.

Effluent

What, if any, are the alternatives to waste-water disposal, while Double S waits for the town sewer to arrive? Could effluent (if treated) be applied to the lower pasture?
Double S may need a variance to do that with the volume of effluent that could be involved. Most of the operators on the west side of the mountains that have frequent slaughter days at their location have a concrete pad and drain field, but the microenvironment in western Washington is vastly different from the east side of the state. I think a contact with the Department of Ecology may provide the best direction there.

HACCP

- You mentioned that there are some basic template HACCP plans available for kill floors. Would you be able to pass one along?
I don't really have templates; every food safety system I write is unique, although most mobile slaughter units have a pretty typical process.

- Would you be willing, if/when we get to that point -- to consult with us again to develop Double S's HACCP for slaughter?
I would be thrilled to be a part of bringing Double S under inspection in any phase of the process that I can. That would certainly include drafting a slaughter food safety system for them with all prerequisite programs, forms, supporting documentation, validation plans, etc. The plan would be unique to them in that we would work together to develop the optimal antimicrobial for the slaughter that would also seamlessly integrate with the existing processing plan that they are working with.

- If the stationary MPU from Colville were re-located and operated under a different entity, would its certificate of inspection still be valid? Would a change in ownership induce any review of the inspection status? (I understand that a new/updated HACCP plan would be required for the new site.)
That would depend; if the Grant of Inspection is under a voluntary withdrawal, it could be re-activated and passed on to Double S, possibly just through a change in ownership through a revised application for a Grant. If the GOI lapsed, then Double S would have to start over. That's not a deal breaker, just takes a little more time.

APPENDIX C: Kayla McIntyre, Regional Market Context, Summary Report

The following assessment of regional market opportunities for USDA-inspected, locally produced meat provides important context for this study. This study's survey indicates that many producers have an established market for USDA-certified products, and that better access to USDA-certified processing would allow them to more fully take advantage of this market. In addition, many small producers indicate an eagerness to identify new market opportunities that would allow them to expand farm production. Because they would benefit most from a small, USDA-certified processing facility in Okanogan County, this section of the study focuses on small- and mid-scale independent livestock producers selling value-added meat products in the Pacific Northwest.

This section evaluates the **regional market context** for local, farm-raised meats, especially beef[1]. First, we assess the regional market context for local, independently produced meats by evaluating the current **customer base**, **market trends and desired product attributes**. We derived an evaluation of this context through a review of existing research and primary data that we collected from relevant businesses, agencies, and organizations. Second, we evaluate opportunities and constraints within the existing regional outlets to underscore **market opportunities for future sales** development. Our evaluation of institutional market opportunities was derived from extensive primary research on direct-to-consumer platforms, farmer's markets, food hubs, and meat co-operatives. This includes pertinent analysis of the strengths and weaknesses of **businesses already selling niche meat** products within these outlets. We move on to evaluate **institutional markets** such as schools, hospitals and universities as potential promising outlets for farms seeking to significantly expand production or create a co-operative arrangement with other farms in the area. Finally, to address the interest producers expressed in creating a co-operative in the survey and in advisory meetings, we explain opportunities and barriers to **multi-farm collaboration**.

The customer base ranges widely for independently produced, farm-raised meats. It includes individuals buying directly from a farm to grocery chains buying either from larger independent farms, conglomerate farms or producer co-operatives. The geographic area for this study includes all of Washington State as well as some market analysis in Oregon, with a focus on the metropolitan areas because that is where the greatest number of local food oriented customers reside.

On a societal level, many Americans' values are shifting about our food system as a whole, including meat. It is becoming more common for people to want to know the origin of their food, and about the producer who raised it -- often referred to as "food with a face."[2] This customer demographic tends to align with values-based behavior. [3] Customers who buy local, independently produced, humanely raised meat products place a high value on the quality of meat, as well as on respect for the producer and the animal's welfare.[4]

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[1] As beef is the dominant meat industry in our county (US Ag Census 2012), it would generate the highest revenue of all farm animals through these markets. Because of this, and because almost all in-depth academic and non-profit research on this topic in our region is focused on beef production, this analysis focuses on beef, primarily grass-fed beef.

[2] Stevenson, Steve and Rich Pirog. "Values-Based Food Supply Chains - Agriculture of the Middle." 2014, Microsoft PowerPoint file.

[3] Stevenson, Steve and Rich Pirog. "Values-Based Food Supply Chains - Agriculture of the Middle." 2014, Microsoft PowerPoint file.

[4] Stevenson, Steve and Rich Pirog. "Values-Based Food Supply Chains - Agriculture of the Middle." 2014, Microsoft PowerPoint file.

The University of Wisconsin's Ag of the Middle project research, which included a nation-wide survey, states that "product attributes such as food quality, safety, and/or functionality along with environmental and social attributes such as sustainable or organic production and treatment of farm workers or animals" are the most important attributes to consumers.[5] Similarly, the University of Illinois conducted a survey for a beef consumer preference study and ranked the top seven specific on-farm practices in consumers' purchasing decisions, which includes:

1. Animals were not administered growth hormones.
2. Genetically modified organisms were not used in the production of this product (non-GMO).
3. Animals were humanely raised.
4. Animals were not administered antibiotics.
5. Animals were raised in a free-range (or cage-free) environment.
6. Animals were grass-fed (or raised on a vegetarian diet).
7. The product is certified organic.[6]

Our research indicates that desirable meat products include premium cuts, ground meat that is reasonably priced[7], and value-added products such as sausage and jerky.[8] Stone Barn Center's comprehensive report, "Back to Grass: The Market Potential for US Grassfed Beef", states that consumers most often

> "go for the expensive 'middle meats', which consist of the loin and rib or for cheaper ground beef… Together [chuck and round] with most of the cuts from the bottom half of the animal, these less popular cuts are often turned into trim and sold as ground beef. Some of the trim is also processed to make grass-fed beef sausages, which is a small but fast-growing category."[9]

As the population and median income rise in Washington State, the demand for high-quality products with these attributes is increasing. Trends in grocery stores illustrate that more customers are choosing to purchase smaller quantities of niche meat products that are typically more expensive than industrially produced meat.[10] Even smaller and more rural communities such as the Methow Valley, Walla Walla, the Skagit Valley, Pullman, Bellingham, Olympia and the Tri-cities, host a strong base of consumers who prioritize purchasing niche meats products.[11] However, the growth in this market is unclear as it is difficult to have a clear understanding of market saturation and producers should do market research to clarify opportunities within specific physical demographics.

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[5] Stevenson, Steve and Rich Pirog. "Values-Based Food Supply Chains - Agriculture of the Middle." 2014, Microsoft PowerPoint file.
[6] "Which production attributes are most important to consumers when buying beef, chicken?" Science Daily via University of Illinois, 2017.
[7] Voltz, Jeff. Personal Interview. 16 August 2018.
[8] Stone Barn Center. "Back to Grass: The Market Potential for US Grassfed Beef." 2017.
[9] Stone Barn Center. "Back to Grass: The Market Potential for US Grassfed Beef." 2017.
[10] Cascadia Foodshed Financing Project. "The economics of Pacific Northwest Grass-Finished Beef: Investor Summary." 2016.
[11] Ecotrust. Differentiated Cost of Production in the Northwest: An Analysis of Six Food Categories, Beef. Portland: Ecotrust, 2016.

To access consumers who are willing to pay a premium for a high-quality product, producers often sell through intermediary businesses such as grocery stores, restaurants and other farms that value supporting local farms. While a growing number of consumers are willing and able to pay a premium for locally raised meats, there are signs that some market saturation already exists.[12] Many of the markets that are easiest for farmers to access have already been captured, such as specialized grocery stores and restaurants that have long-standing relationships with other local farms. Although there is room for growth, it is important for small-scale producers to look beyond these venues.[13] They may need to scale up or work collaboratively to access bigger stores and restaurants that are effectively tapping into the demand for grass-fed, organic, GMO and hormone-free, sustainable, and humanely raised products.

In addition, online sales platforms are a promising and relatively new market channel to connect producers and buyers. These platforms provide relatively cheap marketing, as well as organizational and bookkeeping support for farmers, and the number of producers using these sites is growing quickly.[14] E-commerce could benefit many small, independent farmers and could change the face of direct sales in the coming decade by providing direct access to an interested customer base and closing some of the rural-urban divide.[15]

A source of concern is the introduction of larger, national or international brands that have begun to use marketing tools that previously served as markers of product distinction for independent, sustainable meat producers. These brands are beginning to encroach on the market once held by smaller producers.[16] In the context of this emerging and well-financed competition, labelling is an important tool to meaningfully distinguish products from small-scale farmers based on attributes such as: grass-fed, grain-finished, farm-raised, humanely raised, organic, non-GMO, all-natural, no antibiotics, hormone-free, free-range or pastured.[17]

Existing Market Outlet Opportunities

Direct Sales. This is a marketing outlet where the farmer sells directly to the consumer. The connection is made through phone calls, emails, website, or social media. The type of products offered through this outlet includes selling an animal in bulk as quarters or halves when processed as custom-exempt meat or selling individual cuts when processed as USDA-certified meat. Customers who buy a quarter or half of an animal enjoy participating in the process and often are able to decide how the animal is butchered. This method of sales succeeds when there is a high level of trust in the producer and clear communication exists between producer and customer.

Direct sales can provide greater flexibility for the producer; they do not have to provide an exact and consistent quantity of meat every year, as they would with an intermediary customer. For example, a medium sized cattle ranch in the Okanogan region primarily raises calves to sell at market as all-natural (no growth hormones, no antibiotics), non-GMO animals that are sold to a

[12] Crosby, Tim. Personal Interview. 20 August 2018.
[13] Saul, Darin, Soren Newman, Tracie Lee, Steven Peterson, Stephen Devadoss, Dev Shrestha, Nick Sanyal. "Increasing prosperity for small farms through sustainable livestock production." University of Idaho. 2014.
[14] Maiocco, Janelle. Personal Interview. 11 September 2018.
[15] Maiocco, Janelle. Personal Interview. 11 September 2018.
[16] Maiocco, Janelle. Personal Interview. 11 September 2018.
[17] Saul, Darin. Personal Interview. 29 August 2018.

buyer who finishes them for slaughter.[18] In addition, the ranch finishes a number of its own steers to sell directly to customers across the state. The ranch can vary the number of steers it finishes in accordance with calf commodity market prices and other factors. This ranch has a stable and dedicated customer base that, through clear communication, understands that availability may differ each year. The majority of the customers in this arrangement are people who have direct relationships with the farm owners and are committed to supporting local agriculture.

An example of more complex direct sales is Crown S Ranch in the Methow Valley. As direct sales are the farm's main source of income, they have invested in creating a recognizable brand label, along with a website where customers can directly purchase the farm's products.[19] Through the website, they offer individual cuts of different types of meat as well as the opportunity to be a part of their 'Meat CSA'. CSA stands for Community Supported Agriculture program, a marketing outlet in which members pay up front for a share of the season's harvest and, in return, receive a regular supply of products throughout the season. These funds from the CSA program support the agricultural operation for the year. Several other farms that offer successful Meat CSA programs in the state, including Jubilee Farm in Carnation; Skagit River Ranch in Sedro-Wooley, which refers to their CSA program as a "buying club" but operates under the same premise; Rocky Ridge Ranch in Reardon has a "buying club" as well. Due to the direct sale relationship, the product does not necessarily require a label or brand. However, once a producer begins to sell through other marketing channels, a brand is important for signaling professionalism to purchasing partners and recognizability to customers.[20]

Farmer's Markets. Farmer's Markets "offer a regular and flexible outlet for vendors to sell . . . products in a short period of time. Farmers markets also offer an important opportunity for product testing, farm visibility, and overall business incubation and development".[21] Research by Washington State University shows that farmers markets have clearly become a major sales outlet for small- scale producers in Washington State.[22]

There is limited but lucrative opportunity to sell at farmer's markets. As stated in Colleen Donovan's 'Shopper Demand for Meat at King County Farmer's Markets' report in 2017:

> "The vast majority of farmers markets (91%) have at least one meat vendor. A third of markets (33%) would like to add at least one more meat vendor to their farmers market. Highest demand is for chicken and other poultry meat, followed by pork and beef. Lowest demand is for goat. Over three-quarters of markets (77%) thought that shoppers were "probably willing to pay" more than grocery store and other usual retail prices. There are 14 markets in King County still looking for meat vendors this year."[23]

Based on a survey of King County market managers' observations, the following table outlines "shoppers' interest or demand for meat and meat products at market":[24]

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[18] Goldmark, Chuck. Personal Interview. 21 August 2018.
[19] "About us." Crown S Ranch. http://www.crown-s-ranch.com/.
[20] Voltz, Jeff. Personal Interview. 16 August 2018.
[21] Ostrom, Marcia and Zachary Lyons. "Washington State Farmers Market Manual." WSDA, 2012.
[22] Ostrom, Marcia and Zachary Lyons. "Washington State Farmers Market Manual." WSDA, 2012.
[23] Donovan, Colleen. "Shopper Demand for Meat at King County Farmers Markets: An informal survey of King County Farmers Market Managers." 2017
[24] Donovan, Colleen. "Shopper Demand for Meat at King County Farmers Markets: An informal survey of King County Farmers Market Managers." 2017

N = 22	No demand	Low demand	Good Demand	High Demand	Don't Know or N/A
Chicken and other poultry meat	0%	5%	32%	59%	5%
Beef	0%	5%	64%	27%	5%
Pork	0%	5%	68%	23%	5%
Lamb	0%	14%	55%	27%	5%
Goat	0%	23%	59%	5%	14%
Value-Added Products	23%	18%	36%	0%	23%
Non-edible products (e.g., fleece)	0%	68%	9%	0%	23%

This table represents King County's Farmer's Market demand for meat producers. A producer wanting to sell at farmer's markets would need to assess the individual market's demand. As well, it is critical to weight the multiple variables involved in selling at farmer's markets to see if it can be a net gain for one's business – travel, weekly commitments, variability in sales, and consistent availability of product.

***Online Markets*.** There are now online platforms where producers can sell their meat directly to customers if they pay a small fee to the platform. The farmers list what they have to sell on the website, customers buy products at their convenience and then the farmer delivers the good to the customer[25] or a drop site for multiple customers to pick-up products.[26] The two notable current local businesses providing this service are Crowd Cow and Barn 2 Door. Crowd Cow has not responded to multiple attempts of communication. On their website they claim to work with "sustainable independent cattle ranches, to help them reach more consumers and sell more beef".[27]

Barn 2 Door works with all types and sizes of meat producers. This is a potentially effective option for small-scale rural producers who are not near their customer base and do not have enough product to sell in large quantities. [28] In an interview with the CEO of Barn 2 Door, Janelle Maiocco, she states that the customer base continues to expand each year. As this base continues to grow, so will sales opportunities.[29] The biggest drawback is the monthly cost but options like Barn 2 Door provide comprehensive marketing: fresh sheets, segment and target different audiences, order reminders, email alerts, online payments, sales tracking and more.[30] Maiocco states that Barn 2 Door is regularly working with farmers to improve what services the company offers.

[25] "About us". Barn 2 Door. https://www.barn2door.com/.
[26] Donovan, Colleen. Personal Interview. 7 September 2018.
[27] "About Crowd Cow". Crowd Cow. https://www.crowdcow.com/about
[28] Maiocco, Janelle. Personal Interview. 11 September 2018.
[29] Maiocco, Janelle. Personal Interview. 11 September 2018.
[30] Maiocco, Janelle. Personal Interview. 11 September 2018.

CSA Partnerships. In Washington State, there is a robust Community Supported Agriculture (CSA) market that is almost entirely utilized by vegetable and fruit farmers. Opportunities for meat producers include exclusively meat CSA programs as well as collaborating with established produce-based CSA programs and offering meat additions. Growing Washington and Full Circle Farm are both CSA models that buy produce from external farms to be able to offer more variety in their boxes. Both of these farms offer meat from local producers in their region.[31] If meat producers plan to sell through another business, they will need to maintain clear and reliable communication, consistent labeling of product, and a willingness to align product availability with the CSA program's schedule.

The customers that are participating in produce CSA programs have already illustrated their desire to support independent farmers.[32] An option would be to reach out to current large produce CSAs in the state to see if they would be willing to either (a) work with a livestock producer to create a meat add-on to their CSA or (b) allow said producer to send out a survey or email announcement to their customer base. For the larger CSA programs, it may take a bit of legwork to get in the door and discuss opportunities with the right coordinator. Full Circle Farm, one of the largest CSA programs in the region, works with Skagit River Ranch and other farms.[33] We were unable to reach a procurement coordinator; interested farms are encouraged to apply through their website and Full Circle then responds to applications in quarterly assessments.[34] Growing Washington is working with one external farm at the moment but it could be a potential in the future.[35] LINC's CSA and other similar programs offer specific meat add-ons to their customers and, based on LINC's CSA program growth, they believe there may be room for more meat sales through their CSA program in the near future.[36]

Food Hubs. A food hub is a business that exists "to market, aggregate and distribute locally produced food from farms to restaurants, hospitals, preschools, grocery stores, universities and more".[37] These businesses, typically co-operatives, offer small farms the ability to access larger markets through an intermediary that supports a values-based supply chain.[38] The farms keep their independent identity as their product moves through the supply chain. There are two robust food hubs in Washington State: the Puget Sound Food Hub (PSFH) and the Local Inland Northwest Co-operative (LINC). The PSFH currently sells Skagit River Ranch beef, Skiyou Ranch beef, and North Cascades Meat Co-op beef, and five other beef, pork and chicken producers.[39] PSFH has an abundance of local beef and chicken producers in their area and most likely will not be looking for out of region producers any time soon.[40]

LINC is a Spokane-based for-profit co-op food hub that has seen much growth over the past four years of operation. Like PSFH, their main products are vegetables and fruits. This was LINC's

[31] Sancerre, Gaby. Personal Interview. 25 August 2018.
[32] Boyle, Carolyn. Personal Interview. 20 August 2018.
[33] Webb, Phoebe. Personal Interview. 10 September 2018.
[34] Full Circle Farm interview
[35] Sancerre, Gaby. Personal Interview. 25 August 2018.
[36] Robinette, Beth. Personal Interview. 20 August 2018.
[37] "About us." Puget Sound Food Hub. http://pugetsoundfoodhub.com/
[38] "About us." Puget Sound Food Hub. http://pugetsoundfoodhub.com/
[39] Interview, Amy Frye
[40] Interview, Amy Frye

first year of meat sales; the co-op is working with one farm in their area, Lazy R Ranch, to supply a small amount of beef to one customer.[41] At this time, they would like to see meat sales grow but their customers have expressed cost as a barrier to purchasing local meat.[42] They sell food mostly to schools and hospitals, both of which have tight budgets.[43]

Meat Co-operatives. There are two different meat co-operative models that exist here in our region. One model exists where the co-op, made up of meat producers, provides slaughter, cut and wrap, storage and some marketing assistance. This is the case with Island Grown Farmers Co-op that runs a very small processing facility and sells some of the products at their farm stand in the Skagit Valley. While this specific co-op is considered very successful by an assortment of case studies across the nation, it is important to note the unique community that supports this co-op. The San Juan island region is a hyper-niche scenario where the producers do not have any other processing option and therefore are a captured market that must keep the co-op afloat.[44] In addition, the local community members prioritize supporting local producers and are willing to pay higher than standard costs for meat the co-op needs to charge to operate.[45] Therefore, Island Grown is a model that thrives due to very specific positive circumstances; it is a good example that every location and business opportunity has it's own external conditions that need to be assessed to understand the probability of success.

Live Animals to Niche Brands. An alternative market option for value-added, local meat is to sell value-added animals (grass-fed/all-natural/organic) to a larger company, such as Painted Hills, Carman Ranch or Country Natural Beef.[46] It is an appealing outlet option that could be used in conjunction with increasing animal production for sales through other outlets.

Painted Hills Natural Beef in Oregon is an example of a successful conglomerate co-op where producers sell their animals to a co-op which then finishes, slaughters, butchers and sells the meat under the co-op's own label. They sell both grass-fed and grain-finished meat, with the latter being their much bigger market.[47] They have strong relationships with many grocery stores in the Pacific Northwest. Beef producers are able to sell finished steers or calves to the company, receiving up to a $200/animal premium above market value. They are quite possibly the largest natural beef operation in the western United States, slaughtering 600 head of cattle each week.[48]

Carman Ranch, located in northeastern Oregon's Wallowa Valley, is one example of informal aggregation. The company is a large, well-known brand (Carman Ranch) that supports smaller producers by selling their meat through Carman's established markets.[49] Carman Ranch has diversified markets, selling to grocery stores, restaurants and direct to consumers through a buying club.[50] We were unable to reach anyone to interview at the Carman Ranch business. They

[41] Robinette, Beth. Personal Interview. 20 August 2018.
[42] Robinette, Beth. Personal Interview. 20 August 2018.
[43] Robinette, Beth. Personal Interview. 20 August 2018.
[44] "Island Grown Farmers Cooperative." Case Study, Extension Cooperative.
[45] "Island Grown Farmers Cooperative." Case Study, Extension Cooperative.
[46] Ecotrust. Differentiated Cost of Production in the Northwest: An Analysis of Six Food Categories, Beef. Portland: Ecotrust, 2016.
[47] Homer, Mehrten. Personal Interview. 17 August 2018.
[48] Homer, Mehrten. Personal Interview. 17 August 2018.
[49] Ecotrust. Differentiated Cost of Production in the Northwest: An Analysis of Six Food Categories, Beef. Portland: Ecotrust, 2016.
[50] "Shop." Carman Ranch. https://carmanranch.com/.

would be a good source of information if producers wanted to pursue some sort of co-operative in Okanogan County.

An even larger conglomerate than Carman Ranch, Country Natural Beef is a successful "Family Ranch Owned Beef Co-op" in Oregon that consists of over 80 ranches.[51] The company sells grass-fed and all-natural (grain-fed and/or -finished) product lines to grocery stores across the Western US.[52] CNB would also be a good source of information if producers wanted to pursue some sort of co-operative in Okanogan County.

Grocery Stores. Local-product focused grocery stores are a consistent, valuable market outlet for locally raised meats. These stores are actively seeking to partner with local farmers to increase the local food options they are able to provide to their customers. Through our research we found that the smaller the store, the smaller the farm they are willing to work with.[53] Small, individual co-ops make excellent partners. For example, Central Co-op in Seattle has a freezer devoted to frozen Skagit River Ranch beef as well as fresh beef available from North Cascades Meat Producers Co-operative (NCMPC).[54] They were working with Montana Meat Company, but they recently switched to NCMPC as Montana Meat Co. was having some logistical issues that made them unreliable.[55] This anecdote acts as a good reminder that when a meat producer is selling to a distributor, it is critical to have proper logistics worked out; local meat suppliers are now easily replaceable and no longer have the leverage from lack of supply to shirk professionalism or reliability.

Larger grocery stores or chains that want more quantity of product or want to work with only one supplier often turn to collective arrangements, such as Painted Hills, Carman Ranch or Country Natural Beef.

Strategic Growth: Institutional Market Opportunities

As explained in the previous section, many of the small, niche outlets in our region are saturated with local food options and it would require significant legwork on behalf of the producer to find specific markets. We wanted to explore other markets with room for growth. Studies show that institutional markets are "becoming more interested in buying local food"[56] and interviews with multiple institutional suppliers in our region supported this claim. For the purpose of this report, an institutional market is defined as "larger buyers who purchase goods and services for use in the production of their own goods or services."[57] This includes sales outlets such as business cafeterias, schools, hospitals, day-care centers, senior centers, community colleges, universities and prisons. As these markets tend to want large and consistent quantities of product, small farms may need to consider collaboration in order to access these market opportunities.

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51 "About us." Natural Country Beef. https://www.countrynaturalbeef.com/.

52 "About us." Natural Country Beef. https://www.countrynaturalbeef.com/.

53 Gilliam, Beth. Personal Interview. 23 August 2018.

54 Gilliam, Beth. Personal Interview. 23 August 2018.

55 Gilliam, Beth. Personal Interview. 23 August 2018.

56 "Tips for selling to institutional markets." ATTRA. 2012.

57 Business Dictionary. http://www.businessdictionary.com/definition/institutional-market.html.

Food Service Companies
Companies with strategic plans to support small farms can be a compelling market for small farms. Bon Appetit is a subsidiary of Compass, the global leader in foodservice and serves the higher end clientele of the larger company.[58] The company has a "groundbreaking, companywide initiative requiring chefs to buy at least 20% of their ingredients from small farmers, ranchers, fishermen, and food producers within 150 miles of their kitchens".[59] Once a producer is registered in the company's 'Farm to Fork' system, they can sell to individual chefs and create unique relationships depending on the chefs' needs and what the producer is able to supply.[60]

Local Distribution Companies. Local distribution companies are starting to participate in the values-based food chain and are finding ways to work with independent farmers. Similar to grocery stores that sell higher priced, local goods, smaller, higher-end institutions are an accessible market option as they are often willing to work with local producers to be able to source local food.[61][62]

Charlie's Produce, out of Seattle, is a prominent distributor of local food. They purchase most of their meat from MacDonald Meats in Seattle for the Westside of Washington State and from Food Services of America in Spokane for the Eastside of Washington State and Idaho.[63] Charlie's, like many distribution companies, has smaller subsidiary companies. An interesting market outlet exists with one of Charlie's subsidiaries, Rogge, that supplies Alaskan fishing companies and vessels with provisions.[64] Since Rogge makes large, bulk deliveries, they do not need a constant, reliable timeline, they just need a reliable product.[65] Seasonally bound producers could look for similar outlets that want bulk purchases of frozen meat.

Another regional food distributor, Quality Food Distributors in Montana is focused on providing local products. They work with local Montana meat producers and they are over-supplied with meat products.[66] Organically Grown Company, based out of Oregon, is a produce-focused food distributor that focuses on selling local products. They work with many small, independent farmers and currently do not sell meat but are considering adding meat to their sales.[67]
National Distribution Companies. National food service operations are beginning to adjust their parameters so they are able to buy from small farms. To sell to a national distribution company, such as Sodexo or Sysco, small producers must connect with a chef to access these markets.[68] A producer must apply to become a "compliant vendor" with a company like Sodexo.[69] This involves comprehensive legwork before a producer can start selling: paperwork and communication to fulfill seller requirements of the corporation; communication with multiple potential individual sales outlets; product test periods; potential slow sales at first; and

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[58] "Supply Chain." Compass USA. https://www.compass-usa.com/supply-chain/.
[59] "Farm to Fork." Bon Appetit of BAMCO.
[60] Clark, Anthony. Personal Interview. 20 August 2018.
[61] Hofford, Buzz. Personal Interview. 7 September 2018
[62] Iso, Brent. Personal Interview. 22 August 2018.
[63] Iso, Brent. Personal Interview. 22 August 2018.
[64] Iso, Brent. Personal Interview. 22 August 2018.
[65] Iso, Brent. Personal Interview. 22 August 2018.
[66] Lindberg, Randy. Personal Interview. 9 September 2018.
[67] Sharp, Melissa. Personal Interview. 25 August 2018.

[68] Grayson, Timothy. Personal Interview. 22 August 2018.
[69] Grayson, Timothy. Personal Interview. 22 August 2018.

willingness to adjust prices to compete with industrial meat prices.[70] This application process takes about a year but once a producer is accepted as a supplier, it opens doors to all of the distributor's outlets, including university campuses and other major food service cafeterias. Regardless, a producer needs to work directly with a chef within the company to actually have their product purchased.

Aramark, another large food service distributor, requires their partners to have an insurance policy with $5 million liability and third party inspector involvement, which are difficult barriers for small, independent producers. Although we did not learn the exact insurance demands of other large food service operations, similar barriers would exist unless the company has a strategic plan to support small farms, such as Sodexo's 'Supplier Diversity' program or Bon Appetit's 'Farm to Fork' program.

Public Institutions: Schools. At public schools, current markets exist on a very local basis where there are direct relationships between the individual school's procurement office and local producers. School nutrition directors, who are usually in charge of food allocation budgets, are strapped for funding resources. Schools can buy meat at such low prices from large suppliers such as Chartwell's (the supplier for Okanogan County schools), and the price discrepancy between value-added meat and industrial meat is so great, it is not an easy give in the budget.[71]

Our research has shown that many opportunities exist within institutional markets in Washington State. Yet, in order to access many of these markets, producers may need to create a collaborative business. Our research indicates that many barriers exist in meat producing farm collaborative businesses.

Potential barriers for meat producing farm collaborations

1. **Commitment to the collaboration.** Whether run as a co-op or a corporation, a multi-farm collaboration would need significant involvement from the individual producers at the onset of establishing the business and throughout periods of growth. Producers need an incentive to be committed to a new project that has yet to prove itself as a reliable component of the individual producer's income.

The lack of incentive has been noted as one of the major reasons that Cattle Producers of Washington (CPOW) has struggled to find success since it opened a processing facility, Livestock Cooperative Association in 2013 (CPOW Case Study). CPOW, a non-profit organization of cattle producers, worked together to build a processing plant in Odessa, WA. As explained by the Cooperative Extension System in a case study of LPCA, the lack of financial and mental incentives for producers to be involved in the creation or maintenance of a business can dramatically impact the success of that collaboration.

2. **Reliability of product availability: quantity and time frame.** Other than specific market outlets that run seasonal businesses such as farms or seasonal food providers, to access year-round market outlets, in particular institutions, producers or collaborations must have regular and reliable availability of product. Institutional food providers are very structured and do not have room for constantly updating their product availability. The meat producers in Okanogan County

[70] Meyering, Micheal. Personal Interview. 10 October 2014.
[71] Raymond, Laura. Personal Interview. 14 August 2018.

that would be accessing the new USDA-certified processing plant are not large enough operations to individually provide meat in regular intervals to customers.

Working together would allow individual producers to have the quantity of meat they would need to access institutional markets but it would not ensure product availability on a reliable time frame. Therefore, some producers would need to process their meat at different times of the year for meat to be available to a market outlet. A seasonal change in slaughter time is a difficult transition or concession for many producers to make as all cattle raised in our region are in their peak condition in late summer to early fall. It is a big request to ask a producer to change when they breed and calve in order to have yearlings available for slaughter year-round. As well, most calves in our region are sold in the fall; to request a producer to over-winter his or her animals so they can be slaughtered in early spring requires the producer to incur the cost of feeding and caring for the animals for an extra six months (the economically efficient method of feed is natural grass; feed hay in the winter is much more expensive) (Increasing Prosperity, Pg. 9). This need for year-round consistent supply poses an unequal cost scenario between producers and was discussed with dis-ease at the steering committee meetings. Perhaps some producers can be paid an incentive to breed, calve and slaughter at inconvenient times?

3. **Consistency of product.** All small scale, independent animal producers have different methods for raising their animals, which creates different products at each farm. This is the beauty of independent producers but it is also a hurdle when working with other producers to provide a consistent product to large market outlets. During an interview, a butcher in our area who has been cutting meat for thirty years stated that each producer's herd is unique and producers take pride in their uniqueness. In our region, it can be hard to pinpoint what creates the "uniqueness" -- whether it comes from the elevation of the pastureland, the quality and type of pasture, the type of winter feed, or the method of livestock handling. With this variability, not just in one factor but also in many factors, it is difficult to produce a consistent product. Just as with reliability of quantity and timing of product availability, institutional buyers require a consistent product, especially if they are paying a premium for grass-fed or all-natural or organic attributes.

4. **Agreement on business operations.** This barrier acknowledges that independent producers would have difficulty participating in a collaborative business due to the nature of their personalities and their personal tenets on how they raise their animals. Cattle producers tend to work independently and have chosen a rancher's life style for that reason; they tend to not have much experience working collaboratively. A collaborative outfit would need to jointly decide on many things, not limited to the financial and time requirements of each member/participant, the requirements regarding the product they are selling, the pricing of their product, what will be the regulating body, etc.

5. **Market Saturation.** The most accessible market outlets for niche meats -- high-end grocery stores and restaurants -- are already selling local meats. The lowest, and most lucrative, hanging fruit has already been picked; producers will need to adjust expectations around ease of accessing new markets and high returns. Collective pricing may be a difficult exercise, especially if producers need to sell at a lower price point than their independent sales.

In summary, there are multiple market opportunities for USDA-certified meat products from farms in Okanogan County. Each market has different room for growth and therefore the success in any new market or with new customer requires a careful assessment of the market's need and if the producer is able to meet that need; an understanding on the producer's end of what they can provide in terms of product, communication, logistics, reliability, consistency; and picking specific product attribute(s) to highlight through clear labeling. This study is timely as many

institutions across the nation are pursuing answers to help support rural agriculture. Universities and non-profits are researching ways to help small to medium sized farms stay viable. It is often referred to as "Agriculture in the Middle". Producers are encouraged to utilize existing resources such as North Carolina's Cooperative Extension handbook, "Farm to Fork: A Direct-to-the-Consumer Beef Marketing Handbook," to understand the market context specific to their product. Please see the attached outreach table for a comprehensive list of all organizations and businesses contacted for this study.

Comprehensive Outreach List for Market Context Study

Type of Organization	Business/Agency/Org
NPO	King County Ag Policy Program Manager
NPO	Northwest Ag Business Center
NPO	Northwest Ag Business Center
NPO	WA State Beef Commission
GOV	WSDA Small Farms Team
GOV	FSA office re: meat event
NPO	WSFMA
University	WSU Dept. of Agriculture
University	OSU Small Farms
University	OSU Small Farms
University	University of Idaho
University	University of Idaho
Investor	Agricultural Capital
Investor	Cascadia Foodshed Financing Project
Institution	Bon Appetit
Institution	Bon Appetit
Institution	Bon Appetit
Institution	Bon Appetit
Institution	Bon Appetit
Institution	Microsoft (Daj)
Food Hub	LINC
Food Hub	LINC
Food Hub	Puget Sound Food Hub
Food Hub	Ecotrust Food Hub (??)
Food Hub/Meat Co-op	North Cascade Meats
Retail	Rain Shadow Meats
Retail	Heritage Meats
Retail	New Seasons
Retail	New Seasons
Retail	New Seasons
Retail	Central Co-op

Retail	PCC
Retail	Market of Choice
Producer + co-op	Carman Ranch, Wallowa, Oregon
Producer	Crown S Ranch
Meat Co-op	Our Table co-op
Meat Co-op	Painted Hills Natural Beef
Meat Co-op	Painted Hills Natural Beef
Meat Co-op	Grass Roots Co-op
Meat Co-op	CPoW
Meat Co-op	Montana Meat Co.
USDA Meat Processor	Revel Meats (USDA Meat Processor in OR)
USDA Meat Processor	Heritage Meats
Distributor	OGC
Distributor	Charlie's Produce
Distributor	Charlie's Produce
Distributor	UNFI
Distributor	KEHE
Distributor	QFD
Distributor	QFD
Online Retail	Crowd Cow
Online Retail	Barn2Door
Online Retail	Amazon Fresh
CSA	Oxbow
CSA	Seattle Tilth
CSA	Helsing Junction
CSA	New Roots
CSA	Full Circle Farm
CSA	Full Circle Farm
CSA	Growing Washington
CSA	Growing Washington

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APPENDIX E: Kathryn Quanbeck, Processing Plant Business Structures, Summary Report

There are various business structures that could work for a new meat processing facility in Okanogan County. Selecting the right structure will depend on the individuals involved, the needs of the business, the business goals and the potential tax and legal liabilities. Below are excerpts from two other feasibility studies that outline the business structure options.

This first section is an excerpt from *The Mendocino County Meat Plant Study*[1], completed in 2013 by Shermain Hardesty and John Harper. This study looked at the feasibility of building a new, small-scale USDA inspected processing plant to serve producers in Mendocino and Lake counties in Northern California. As a part of the study, the researchers investigated different business structures for the proposed facility. A summary of those business structures is included here:

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.

c. S-corporations

[1] Hardesty, S. and J. Harper. 2013. Mendocino County Meat Plant Study – Staying Local. University of California Cooperative Extension Mendocino County, University of California Davis Department of Agricultural and Resource Economics, Mendocino Economic Development and Financing Corporation, Award No. 07 79 06702, U. S. Department of Commerce Economic Development Administration. 92 pages. Can be found online at http://edfc.org/wp-content/uploads/2014/02/Meat-Study-Final-Report-2013.pdf

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 Washington in 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).

Another feasibility study from rural Northern California, in Del Norte County (near the Oregon border) looked at "New Generation Cooperatives" (NGC) as a potential business structure for a new meat processing facility. The section below is an excerpt from the *Del Norte Meat Processing and Retail Facility Feasibility Study*[2] prepared by John Irwin in 2011*:*

New Generation Cooperatives

The New Generation Cooperative (NGC) is similar in structure to traditional cooperatives, but the NGC focuses on marketing niche strategies rather than the traditional cooperative roles, such as production and storage. One of the main focuses of the NGC is delivery rights, which are tied directly to the initial investment required from each member. The NGC establishes a production volume, and then sells shares based on a delivery commitment from farmers, which stipulates that enough of the NGC's product is produced to fulfill the NGC's capacity requirement. One disadvantage of this system is the inability of the cooperative to encompass new producers, as the production capacity is already maximized at inception. However, delivery rights may be sold or traded to other members of the cooperative and future expansion can allow for the sale of additional delivery rights. NGCs normally maintain a marketing agreement with the member producers, whereas traditional cooperatives do not. Because NGCs are limited to purchasing products from their members only, they require a much narrower level of quality standards than traditional cooperatives. The process of identity preserved is used to ensure that an acceptable quality product is grown by members, or it can trade lower quality member grain for the higher quality grain needed for processing. The key advantage to NGCs is the fact that the organization can supply a large amount of its own start-up capital. NCGs can typically generate 30%-50% of their start-up capital, lowering long term private debt commitments and freeing up future profits for larger dividend payments to farmers. Additionally, delivery rights ensure a reliable volume of product for the cooperative, while guaranteeing a home for the producer's

[2] Can be found online at http://www.jirwinconsulting.com/Del%20Norte%20Meat%20Processing%20and%20Retail%20Facility%20Feasibility%20Assessment-%20report.pdf

product. It also allows the cooperative to better react to market conditions. New generation cooperatives may choose a combination of options, but usually organizations stay within a stock or non-stock form of capital acquisition. Potential members may feel more comfortable with stock options, as it is a more commonly understood system of capitalization.

Capitalizing refers to the amount of money needed to begin operations and the mechanism for acquiring the cash. Important decisions include whether the cooperative will issue stock or non-stock options (i.e. membership dues), borrow from traditional financial institutions, and determine minimal rates of return for its members. The goal is to provide enough working capital to begin and maintain operations while sustaining manageable debt levels for the organization and making the investment affordable to prospective members. Ownership certificates come in a variety of forms, including common stock, preferred stock, membership certificates, and capital certificates. In terms of cooperatives, common stocks are shares of the cooperative representing membership/ownership in the cooperative and are accompanied by voting rights. Common stock can be divided into classes, each carrying different voting privileges and assessed different values. Those with more privileges are more expensive to purchase. Cooperatives usually do not pay interest on common stock issued. Preferred stock is nonvoting stock that can be issued to both members and nonmembers of the cooperative. The proceeds from the purchase of preferred stocks are usually used for capital investment and. As with common stock, preferred stock can be divided into classes, each with a different value receiving different scales of interest payments. Preferred stock owners receive interest for their investment, and are usually given their interest dividends before the distribution of profits to common stock holders. If the organization ceased to exist, preferred stock holders are compensated first. If the members of a cooperative decide that they do not want to offer stock, membership is derived through membership certificates. Voting rights accompany membership certificates, which are issued once membership dues are paid. Usually memberships and capital certificates are insured, but are non-interest bearing. Capital certificates are similar to preferred stock, but are not issued as stock. They are sold in a variety of denominations and do not have accompanying voting rights. Interest may or may not be paid to capital certificate holders, but nonmembers may purchase the certificates. NGCs require a marketing contract, making all members producers. In an NGC, preferred stock and/or capital certificates are generally not offered. After the cooperative has begun operation, members continue their investment by providing additional risk capital. This can be accomplished in a variety of ways. The cooperative may retain a portion of earnings as an additional investment into the organization. This can be done in two ways: through the payment or retention of a per-unit fee for each member, or through the retention on the overall cooperatives net earnings. Either way, the equity

investment is credited to the members' equity accounts and held as a liability on the cooperatives balance sheet.

Cooperative Legal Considerations

The legal considerations cooperatives must consider include the drafting of articles of incorporation, creating bylaws, membership applications, creating and maintaining marketing and purchase agreements, and revolving fund certificates. While the Capper-Volstead Act of 1922 and the Farm Credit Act of 1971 have aided cooperatives in their ability to work together in the handling, processing and marketing of their goods, and allows them to borrow jointly, cooperatives are still subject to numerous antitrust laws and are responsible for all tax codes relating to their enterprise. Articles of incorporation give the cooperative a distinct legal standing. It limits personal liability for debt incurred by the cooperative, excluding the amount of their initial investment. The articles of incorporation also describe the nature of the business entity, its location, the proposed duration of the association, and the names of the principle parties involved. Once drafted, the articles are filed with the Secretary of State, activating the cooperative. Bylaws define how the cooperative will conduct business. The bylaws describe membership requirements and list the rights and responsibilities of the cooperative's members. They also discuss voting procedures and the board structure that will govern the cooperative. Membership applications are composed of five main parts: the applicant's statement addressing membership; the signature of the applicant; a statement of cooperative acceptance; signatures of the board president and secretary; and a statement of the duties and intent of the prospective member. A membership certificate may be issued to each member as evidence of entitlements to the organization.

Marketing and purchasing agreements set the standard of quality acceptable to the cooperative. They also state how the proceeds of the cooperative will be distributed, once deductions for operating and capital expenditures have been taken. Often marketing and purchasing agreements are required when seeking outside financial backing. The revolving funds certificate is a written receipt for capital investments and retained earnings that will eventually be revolved or redeemed. These investments may be deductions based on a per-unit of production, reinvested earnings, or original capital subscription, if not issued in stock form. All legal documents should be written with the help of a lawyer to ensure state provisions are addressed. Investing risk capital is the responsibility of all members. The amount of risk capital invested is an important decision for the cooperative's members to consider. It must cover a large portion of the start-up and operational costs, so that outside investors feel comfortable that the membership will work to make the operation successful. Members must also invest enough capital to give them a financial stake in the success of the enterprise. Most private loan institutions will require the cooperative members to assume at least 50% of the capital risk,

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

Owner Investment

Ownership options that can be exchanged between members within the cooperative are referred to as exchangeability. Redemption refers to the expectation that member ownership will be redeemed under specific conditions, such as retirement or death. Investment amounts should be determined by comparative usage requirements. Producers interested in owning more than their usage percentage can purchase additional preferred stock or capital certificates. Cooperatives must maintain financial reserves to tie them over during periods of reduced production or environmental recession. These reserves can be earmarked for specific spending, such as debt reduction, facility improvements, or operational growth. Reserves also provide peace of mind for members, allowing the cooperative to weather hard times without the need for additional investment by members. After reserves have been established, the cooperative needs to develop a system to repay investors their initial cash outlays. Usually a percentage of operating revenues are dedicated for the repayment of owner equity and the purchase of stock or certificates of outgoing members. This can be done in two ways: either a payment amount is determined based on the input of each member; or the resources are pooled and distributed based on the percentage share owned in the cooperative. Both systems require a delayed payment for initial livestock inputs, so that the cooperative pays for the initial livestock and repays profits after the meat has been successfully sold.

With traditional cooperatives, the initial investments are very low, often less than $100. Ownership is offered through the issuance of capital certificates and not stock options. Traditional cooperatives are generally more restrictive than other ownership types in allowing exchanges. This is usually done through the sale of certificates between members at the board of director's discretion. Traditional cooperatives usually have an established par value for certificates that is determined at the time of buy-in. Traditional cooperatives allow new members to join at any time, so a par value must be established. Traditional cooperatives use a set price system for profit distribution. Based on the number of certificates owned or the amount of meat produced, the cooperative will disperse profits as flat fees at the close of the business cycle. Members in new generation cooperatives typically

invest $10,000 - $12,000 to purchase marketing rights (Coltrain, Barton, and Boland, 2001). NGCs do not normally establish a par value, so ownership stocks are valued at market price. It is highly correlated to the expected profitability of the organization; so certificate sales are usually done through a flat fee. Since NGCs are exchangeable, redemption obligations are not required. NGCs commonly use the pooling system. In the pooling system, a pool is opened at the start of the production period, with payments made as meat is sold. An initial payment can be arranged at delivery time, with additional progress payments made until the pool is closed and the final margins are determined. The amount of profit distribution is directly tied to the amount of meat generated by each member and is tied to the producer's contract. For investor-owned firms, stock certificates are purchased, with the stock value based directly on the profitability of the organization, and profits are distributed through dividends. The value of a stock certificate is based on the future anticipated profitability of the enterprise. Stock sales and exchanges can occur through an open market, and non- producers can buy-in to the cooperative.

How can non-profits assist in developing meat processing capacity?

In Okanogan County there is a unique opportunity to partner with local non-profits like The Methow Conservancy and others to support the development of additional meat processing capacity in the region. Looking nationwide for examples, we don't see many non-profits operating meat processing facilities. A non-profit owned and operated the Foothills Pilot Plant in Marion, SC for a number of years but recently closed in 2017 as they could never achieve profitability. A better strategy is for a non-profit to *support* a for-profit meat processing business rather than the non-profit trying to own and operate the plant. Right here in Washington State we have a good example as to how non-profit and a meat processing facility might work together with the partnership between the Puget Sound Meat Producers Cooperative and Heritage Meats.

APPENDIX F: Kathryn Quanbeck, Non-profit Ownership of MSU's in Washington State, Summary Report

In the last 15+ years, there have been several instances of non-profits owning and leasing mobile slaughter units (MSU) to increase access to USDA-inspected meat processing in their communities. Examples include the relationship between the Lopez Community Land Trust and Island Grown Cooperative, the Pierce Conservation District and the Puget Sound Meat Producers Cooperative (now, Puget Sound Processing, LLC), the Community Agricultural Development Center and S&K Processing and others. Here, we'll focus on two MSUs that are still running and serving their communities. Much more information on MSUs (in Washington, and beyond) can be found on the Niche Meat Processor Assistance Network's website at http://www.nichemeatprocessing.org/mobile-unit-overview.

Pierce Conservation District

The Pierce Conservation District[1] (PCD) purchased a mobile slaughter unit (MSU) in 2009 to serve producers in the Southern Puget Sound area who had limited access to USDA-inspected slaughter services for cattle, hogs, sheep and goats. Following a feasibility study[2] in 2008 in their region, the PCD approved funding for the purchase of an MSU that would be owned by the PCD but leased to a newly formed cooperative, the Puget Sound Meat Producers' Cooperative (PSMPC) to manage and operate the unit.

Puget Sound Processing Mobile Slaughter Unit

[1] https://www.piercecountycd.org/169/Mobile-Meat-Processing-Unit

[2] http://articles.extension.org/pages/74378/southern-puget-sound-2008

The PSMPC ran the unit from 2009 until 2016. At this time, the lease and management was turned over to a newly formed private business, Puget Sound Processing, LLC[3] (PSP). PSP currently operates the unit. PSP operates the MSU and hauls carcasses to multiple USDA-inspected and custom-exempt processing facilities for cutting, packaging and value-added processing. PSP maintains a site lease with a local farm where the animal handling facilities are located and slaughter services are performed. Local producers haul to the farm each week for processing. PSP is currently in the process of looking for a secondary site to expand their service range. The site lease outlines maintenance responsibilities, access to fresh water, responsibilities for wastewater and more. The site requirements can be quite expensive, ranging up to $30,000 to establish a new slaughter site with all the correct equipment and animal handling facilities.

Regarding the MSU itself, PSP carries the grant of inspection with the USDA and all required insurance. Any upgrades and all maintenance are the responsibility of the operator. PSP has three consecutive 5 year leases with PCD. The lease is offered at a discounted rate as slaughtering animals in a MSU is generally an unprofitable business. The daily operating cost of the MSU can range as high as $2,000/day with all labor, supplies, wear and tear, insurance and overhead accounted for.

PSP remarked that they have a very good working relationship with PCD. In general, PCD is fairly hands off in the operation of the unit: it is PSP's responsibility to maintain, operate and oversee the unit. PSP provides PCD with quarterly reports detailing the number of animals processed, number of producers served, dollar value of meat processed, a brief narrative on any improvements or repairs made and more. This information helps PCD ensure that the unit is being used for its intended purpose, to serve the producers and consumers of Pierce County.

Lopez Community Land Trust

Much of the information here is adapted from the Niche Meat Processor Assistance Network's "Island Grown Farmer's Cooperative: A Case Study."[4]

Starting in 1996, livestock producers in San Juan County, WA became interested in marketing their meat locally but were having trouble accessing slaughter and processing services. At first, they wanted to build a small slaughter facility on one of the islands, but quickly ran into neighborhood opposition at each site they considered. So, they connected with the Lopez Community Land Trust (LCLT) to explore the possibility of a MSU. In 2002, the LCLT bought an MSU and leased it to the newly formed Island Grown Farmer's Cooperative (IGFC) for operation and management. The IGFC also leased a USDA-inspected cut and wrap on the mainland for processing, packaging and distribution. The relationship with LCLT was crucial

[3] http://www.pugetsoundprocessing.com/

[4] http://articles.extension.org/sites/default/files/IGFC%20Case%20Study.pdf

to getting started, "LCLT committed significant time and human capital to the project by raising $90,000 of the $150,000 in start-up costs (trailer, truck, equipment, design/testing, outreach)." Each member of the IGFC also made an initial equity investment of $600 each. From then on, the only source of funding was processing revenue - basically, the unit had to be self-sustaining from the beginning.

Island Grown Farmer's Cooperative Mobile Slaughter Unit

The LCLT originally leased the MSU to IGFC for $1/yr. for 10 years. In 2012, the co-op purchased the unit at fair market value. From the beginning, the lease stipulated that IGFC take care of everything: maintenance, grant of inspection, insurance, operations, etc. The LCLT had no day-to-day responsibilities for the MSU. This relationship worked well for both parties: the LCLT wasn't interested in operating an MSU and it gave IGFC the flexibility to make business decisions that could ensure operated at break-even, or even a small profit.

Overall, both the IGFC and PSP describe their relationships with the non-profit owners of the MSUs they operate as "hands-off", in a good way. This is important for both parties: it allows the operators to focus on running the MSU in a manner that sustains the business and limits the responsibilities and liability of the non-profit. Both operators remarked that the lease arrangement is likely to be the least of your worries: making a MSU operate as a profitable business is a far bigger challenge!

APPENDIX G: Kathryn Quanbeck, Ancillary Business Opportunities, Summary Report

Byproducts for hogs and cattle represent a significant portion of the carcass, by weight. A USDA report in 2011, *Where's the (Not) Meat? Byproducts from Beef and Pork Production* estimated "Byproducts (edible offal (including variety meats), inedible offal, hides and skins, blood, fats, and tallow) include all parts of a live animal that are not part of the dressed carcass and constitute about 30 percent of the liveweight of hogs and about 44 percent of the liveweight of cattle."[1] These byproducts are an important revenue stream for large-scale meat processing facilities that have the infrastructure, expertise and relationships to make sellable products out of offal, hides and more. Some of the byproducts processed and sold by large-scale meat processing facilities in the U.S. include:

- **blood/blood meal:** blood byproducts have many uses including pharmaceutical products, animal feed, fertilizer and manufacturing industry uses.
- **Bones/bone meal**: bones can be use for many purposes from buttons to glue and bone meal can be used as an animal feed or in fertilizer.
- **hides:** hides can tanned and turned into leather products.
- **glands and organs:** many uses in the pharmaceutical industries.
- **tallow:** rendered into edible fat, and for soap or candle making.

While "estimates of total U.S. byproduct production by species are not publicly available," USDA estimated that "the annual proportion of packer revenue earned per animal from byproducts was 7.0 percent" meaning that byproducts are a definite contribution to a meat processor's bottom line.

For small-scale processing facilities, however, it is usually very difficult to capture much value from byproducts. It is frequently not cost effective to build the processing capacity needed to turn byproducts into sellable products, given the high cost of processing and the low dollar value paid for the finished product. The byproducts market is, by and large, high volume, low margin and export focused. A feasibility study in Montana for a processing plant that would process approximately 250 head of beef per day found that the rendering equipment alone needed to process just bone meal and fat, for example, would cost "$6 million, plus an additional $2 million for installation and building."[2]

In general, when it comes to byproducts small-scale plants are best served focusing on generating revenue from the edible offal. Edible offal includes products such as hearts, livers, tripe and more. These products can be sold for human consumption or for pet treats. It should be noted that the regulations surrounding pet food and pet

[1] 2011. USDA-ERS. *Where's the (Not) Meat? Byproducts from Beef and Pork Production.* Available at https://www.ers.usda.gov/webdocs/publications/37427/8801_ldpm20901.pdf?v=0

[2] http://onemontana.org/what-we-do/meat-processing-facility-feasibility-study

treats have changed in recent years. Processing plants interested in producing pet treats and/or pet food should carefully review the FDA guidance on *Human Food By-Products For Use As Animal Food* at https://www.fda.gov/downloads/AnimalVeterinary/GuidanceComplianceEnforcement/GuidanceforIndustry/UCM499201.pdf. This distinction is very important: the regulations for pet treats and pet food are different and those for pet food are quite strict. Those wishing to produce pet food must show that their pet food is a complete and nutritious diet for a dog or cat, meeting all the macro- and micro-nutrient needs of the animal. Suffice to say, many small plants choose to go the pet treats route as opposed to developing pet food recipes.

Two relatively easy entry points into the pet treats market are smoked beef bones and dried beef liver treats. First, if possible, try to sell fresh beef bones for soup or stock and fresh beef liver for human consumption as that will garner the highest price. But, if you have a hard time moving these products, it is worth considering selling smoked beef bones and dried beef livers as pet treats at a lower price point. Regarding smoked beef bones, a processor in the Midwest noted on the NMPAN listserv "we smoke the knuckles and femurs at 180° with full smoke for 6 hrs. We do not use any preservative[s] on them and handle them as [we would] edible [products]. We sell them for $2 each and sell all we can make. They are a big hit at farmers markets and sport shows and I would think would be easy to wholesale in urban areas. And they bring new and diverse folks to our store on a regular basis."

Dried liver treats can also be made using existing equipment. Livers can be cut and sliced and then dried in food dehydrator or in the smoker.

We do see some examples of small-scale processing plants across the country controlling costs or generating revenue with byproducts. For example, a small-scale custom-exempt plant in Lakeview, OR, Lakeview Lockers, uses a composting system to reduce the cost of handling their meat processing waste. They use a windrow system to compost meat processing waste into fertilizer. You can learn more about their process on an NMPAN webinar found here: https://articles.extension.org/pages/24718/alternatives-to-rendering:-butcher-waste-composting. Cornell University in New York also has lots of resources on composting meat processing waste at their Cornell Waste Management Institute website, here: http://cwmi.css.cornell.edu/.

White Oak Pastures (WOP) in Bluffton, GA is also well known for their innovative approach to meat processing and marketing. They have two on-site, USDA-inspected meat processing facilities at WOP: one for poultry and one for red meat. They have developed a full-circle solution for their meat processing waste in which they feed the intestines from meat processing to black soldier flies and then collect the black soldier fly larvae to feed to their chickens. WOP describes the process on their blog: "We take the intestines from our abattoir and feed them to the black soldier fly larvae. They eat and grow, and when they're ready to pupate, they self-harvest by crawling up the ramps on the sides of the tub and dropping into a

bucket…… The larvae serve two really important purposes: eating up that organic material from our red meat abattoir, and producing a protein- and fat-rich feed source that we use to supplement the diets of our pastured poultry."[3]

For most small-scale meat processing facilities, it is best to focus on the primary business activities of slaughter, cutting, and value-added processing first and foremost. Add in byproduct processing activities where and when they are beneficial to the core business activities. Seek out byproduct revenue streams that further utilize existing equipment or labor, rather than those that require "more" (equipment or people). Additionally, it is strongly recommended to partner with other processing facilities that may specialize in further processed or value-added products to generate revenue from byproducts you might not have the equipment to process. For example, very few small-scale meat processing facilities make bone broth. Typically, bone broth is made at facilities that specialize in just making bone broth. Rather than invest in the infrastructure to process bone broth in your own plant, partner with a bone broth maker to sell them bones, or ask them to co-pack a bone broth just for you.

[3] http://blog.whiteoakpastures.com/blog/weve-got-guts.-lots-and-lots-of-guts

ORDINANCE No. 793

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF TONASKET, WASHINGTON, AMENDING TITLE 17 OF THE TONASKET MUNICIPAL CODE BY ADDING NEW DEFINITIONS, REVISING TEXT TO ALLOW "SLAUGHTERHOUSES" IN THE C-2 WITH A CUP AND ESTABLISHING MINIMUM STANDARDS TO BE APPLIED.

WHEREAS, Chapter 35A.63 of the Revised Code of Washington establishes the City of Tonasket as the authority with jurisdiction on local land use decisions; and

WHEREAS, on July 31, 2018 the Planning Commission initiated text amendments to considering limited slaughterhouses uses in the service commercial and mixed use districts for the City of Tonasket; and

WHEREAS, all notice regarding said text amendment proceedings as required under TMC Title 19 have satisfactorily been performed; and

WHEREAS, a program for implementing the Comprehensive Plan is to review and revise the zoning ordinance to encourage development of industrial and commercial uses while providing for appropriate buffers between potentially conflicting uses; and

WHEREAS, the Planning Commission conducted a duly publicized public hearing on the proposed text amendment on August 21, 2018, and after said hearing the Commission recommended to the City Council to approve the text amendment for the Commercial Two (C-2) District only and pass an ordinance enacting the same; and

WHEREAS, the City Council conducted a duly publicized public hearing on the Planning Commission's recommendation on the proposed text amendments on September 25, 2018; and

WHEREAS, the City Council does find that allowing limited slaughterhouses uses in the service commercial districts of the City of Tonasket is supported by the Comprehensive Plan; and

WHEREAS, the City Council did adopt by reference the Planning Commission's Finding of Facts and Conclusions as their own and accepted the Planning Commission's recommendation.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF TONASKET, WASHINGTON, DO ORDAIN as follows:

Section 1. Amendment by Addition.

Add an entirely new Section 17.70.200 to the Tonasket Municipal Code entitled Slaughterhouses to read as follows:

"17.70.200 Slaughterhouses.

A. The intent of this section is to provide for and establish standards for permitting of uses requiring the slaughter of animals. The intent of the following conditions is to ensure that animals are kept in a manner which will not endanger the health, peace and safety of the citizens of the city and which will assure that the animals are kept in a clean and sanitary condition and not subjected to suffering, cruelty or abuse.

B. The slaughter of animals is permitted to be operated and maintained only as a use accessory to a permitted meat processing and packing facility subject to the following requirements:

1. The meat processing and packing facility is certified by the USDA;
2. The slaughter methodology and process is certified by the USDA;
3. The number of animals held on-site shall be limited to no more than 16 beef equivalents a period not to exceed 48 hours;
4. Animals shall be kept in a well-maintained enclosure and all waste managed in conformance with best management practices and USDA requirements. All waste must be cleaned on a regular basis so as to prevent offensive odors and prevent contamination of groundwater;
5. Offal and other by products of the slaughter process shall comply with USDA requirements and be kept in closed containers which are emptied and the contents removed from the site on at least a weekly basis;
6. A minimum buffer of 100' shall be required between slaughter and animal enclosure and existing residential uses. The buffer may be reduced to 50' with the addition of an 8' tall sight obscuring fence on the property line with the adjoining residential uses;
4. Slaughtering of animals shall not be conducted within view of the public;
6. At no time shall the animals be allowed to run at large."

Section 2. Amendment by Revision.

A. TMC 17.10.011 "B" which reads:

"17.10.011 "B"

"Basement" means that portion of a building, between a floor and a ceiling, which is partly below the finished grade. A basement shall be considered a story

unless it is used exclusively for parking, storage and/or the housing of heating equipment.

"Bed and breakfast" means an owner-occupied single-family dwelling in which not more than two bedrooms are rented to the traveling public (tourists). For the purposes of this title, this use is not considered a commercial use. This use shall have the outward appearance of a single-family residence and food service in accordance with WAC 246-215-180.

"Best management practices (BMPs)" means conservation practices or systems of practices and management measures that:

Control soil loss and reduce water quality degradation caused by nutrients, animal waste, toxins, and sediment.

Minimize adverse impacts to surface water and ground water flow, circulation pattern, and to the chemical, physical, and biological characteristics of waters, wetlands, and other fish and wildlife habitats.

Control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw material.

"Binding site plan development" means a planned development that does not establish lot boundaries for the purpose of subdividing for sale individual lots or parcels within the development. A binding site plan development must meet exemption criteria from subdivision regulations as defined in RCW 58.17 and the city's subdivision regulations.

"Boardinghouse," "lodginghouse," or "roominghouse" means a building where lodging with or without meals is provided for not more than 10 persons in addition to members of the family occupying such building.

"Broadcast facility, radio and television" means an establishment engaged in transmitting oral and/or visual programs, and which consists of a studio, transmitter, and antennas.

"Buffer" means a strip of land established to protect one type of land use from another with which it is incompatible.

"Buildable area" means the space remaining on a lot after the minimum open space requirements (coverage, yards, setbacks) have been met.

"Building" means a structure built for the support, shelter, or enclosure of persons, animals, chattels, or property of any kind.

"Building code" means the State Building Code and related construction codes and standards as amended and adopted by the city of Tonasket per Title 15 TMC.

"Building coverage" means the amount of land covered or permitted to be covered by a building or buildings, usually measured in terms of percentage of a lot.

"Building height" means the vertical distance measured from the average elevation of the native grade adjacent to the building foundation, to the highest point of the coping of a flat roof, or to the highest gable of a pitched or hipped roof, excluding chimneys, antennas and other secondary roof structures.

"Building line" means a line, fixed parallel to the lot line, beyond which a building cannot extend.

"Bulk storage" means nonportable storage of bulk products in fixed tanks.

"Business or professional office" means the office of a recognized profession including doctors, dentists, accountants, attorneys, optometrists, architects, professional engineers and surveyors and persons engaged in other similar occupations or nonretail business maintained for the conduct of that profession or business."

Is hereby amended to read as follows:

"17.10.011 "B"

"Basement" means that portion of a building, between a floor and a ceiling, which is partly below the finished grade. A basement shall be considered a story unless it is used exclusively for parking, storage and/or the housing of heating equipment.

"Beef equivalents" means, for the purposes of calculating the number of animals allowed at a permitted slaughterhouse, 1 beef = 2.5 hogs = 6 sheep/goats = 0.75 bison.

"Bed and breakfast" means an owner-occupied single-family dwelling in which not more than two bedrooms are rented to the traveling public (tourists). For the purposes of this title, this use is not considered a commercial use. This use shall have the outward appearance of a single-family residence and food service in accordance with WAC 246-215-180.

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"Buffer" means a strip of land established to protect one type of land use from another with which it is incompatible.

"Buildable area" means the space remaining on a lot after the minimum open space requirements (coverage, yards, setbacks) have been met.

"Building" means a structure built for the support, shelter, or enclosure of persons, animals, chattels, or property of any kind.

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"Bulk storage" means nonportable storage of bulk products in fixed tanks.

"Business or professional office" means the office of a recognized profession including doctors, dentists, accountants, attorneys, optometrists,

architects, professional engineers and surveyors and persons engaged in other similar occupations or nonretail business maintained for the conduct of that profession or business."

B. That portion of Table 1 of Section 17.70.020 of the Tonasket Municipal Code entitled District Use Chart which reads:

As shown on Part 1 of Exhibit "A" attached hereto.

Is hereby amended to read as follows:

As shown on Part 2 of Exhibit "A" attached hereto.

Section 3. Severability. If any section, subsection, paragraph, sentence, clause, or phrase of this ordinance is declared unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining parts of this ordinance.

Section 4. Effective Date. This ordinance shall become effective from and after its passage by a majority vote of the City Council, approval by the Mayor, and five days after publication of this ordinance, or a summary of this ordinance, as required by law.

APPROVED AND ADOPTED by the City Council of the City of Tonasket, this 25 day of Sept, 2018.

APPROVED:

Dennis Brown, Mayor

ATTEST:

Alice J. Attwood, City Clerk

APPROVED AS TO FORM:

Michael D. Howe, City Attorney

Filed with City Clerk: 9-21-18

Passed by City Council: 9-25-18

Date Published: 10-11-18

Date Effective: 10-16-18

On the 25 day of Sept, 2018, the City Council of the City of Tonasket passed Ordinance No.

DATED this 18 day of Oct., 2018.

Alice J. Attwood, City Clerk

EXHIBIT A

Part 1

17.70.020 Table 1

USE CHART

CITY OF TONASKET ZONING USE CHART	Zoning Districts								
Land Uses	**R-1**	**R-2**	**R-R**	**C-1**	**C-2**	**MU**	**M-1**	**AI[1]**	**PU**
Slaughterhouses, stockyards and feedlots	X	X	X	X	X	X	X	X	X

Part 2:

17.70.020 Table 1

USE CHART

CITY OF TONASKET ZONING USE CHART	Zoning Districts								
Land Uses	**R-1**	**R-2**	**R-R**	**C-1**	**C-2**	**MU**	**M-1**	**AI[1]**	**PU**
Slaughterhouses	X	X	X	X	CUP[14]	X	X	X	X
Stockyards and feedlots	X	X	X	X	X	X	X	X	X

[14] - Slaughterhouses subject to the requirements of 17.70.200 TMC.

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