SHENANDOAH VALLEY

AGRICULTURE ENTERPRISE CENTER FEASIBILITY STUDY

Prepared for the Central Shenandoah Planning District Commission

by New Venture Advisors, May 2021

This study was conducted by New Venture Advisors for the Central Shenandoah Planning District Commission.

Central Shenandoah Planning District Commission

The Central Shenandoah Planning District Commission (CSPDC) was formed to help communities and agencies within the Central Shenandoah Valley work together by providing high quality planning technical assistance and facilitation services that address local, regional and state needs in an innovative, timely and cooperative. The CSPDC is comprised of five counties, five cities, and eleven towns in the heart of the Shenandoah Valley in the western part of Virginia. A Board of representatives from each governmental subdivision oversees the activities of the Commission.
https://www.cspdc.org

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New Venture Advisors (NVA) is a consulting firm that specializes in food system planning and infrastructure development. Since 2009, NVA has helped more than 100 communities across North America identify strategies to develop food systems, food enterprises and food policies that are good for farmers, food entrepreneurs, consumers, and the intermediaries that connect them.
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Executive Summary

The Central Shenandoah Planning District Commission (CSPDC) identified an opportunity to perform a feasibility study to determine the viability of a certified, commercial, shared-use Agricultural Enterprise Center located in the Central Shenandoah Valley. In March 2020, the CSPDC issued a request for proposal (RFP) for a consultant to undertake a feasibility study. New Venture Advisors (NVA) was selected and began work on this project in July 2020.

Goal and Vision: The goal of the project is to support business diversification and growth in the Shenandoah Valley through value-added products and the delivery of agricultural goods and products to new markets, specifically supporting local food entrepreneurs and farmers. The vision of the Agricultural Enterprise Center is to bring a multi-use facility to the region that can help local growers and producers expand their market area, bridge the market gap, and pool together products to meet market demands.

Project Objective: The objective of this feasibility study is to determine an optimal operating model for this potential facility based on the needs of in-region stakeholders (i.e., farmers, food businesses, and buyers). The study was organized into the following phased approach:

Phase	Activities
Phase 1: Market Analysis	Interviews, Surveys, Landscape Analysis
Phase 2: Business Analysis	Operating Model, Capacity and Break-Even Models, Building Program, Site Exploration
Phase 3: Refinement	Operating Model and Building Program Updates, Financial Projections, Schematic Drawings, SWOT Analysis, Risk Assessment
Phase 4: Community Engagement	Formal Plan Reveal with Community Stakeholders
Phase 5: Finalization	Final Report, Executive Presentation

Project Funding: In 2020, the CSPDC was awarded a grant from the U.S. Department of Agriculture's Local Food Promotion Program. Combined with a GO Virginia Enhanced Capacity Building grant, these funds were used to conduct a feasibility for an Agricultural Enterprise Center in the central Shenandoah Valley.

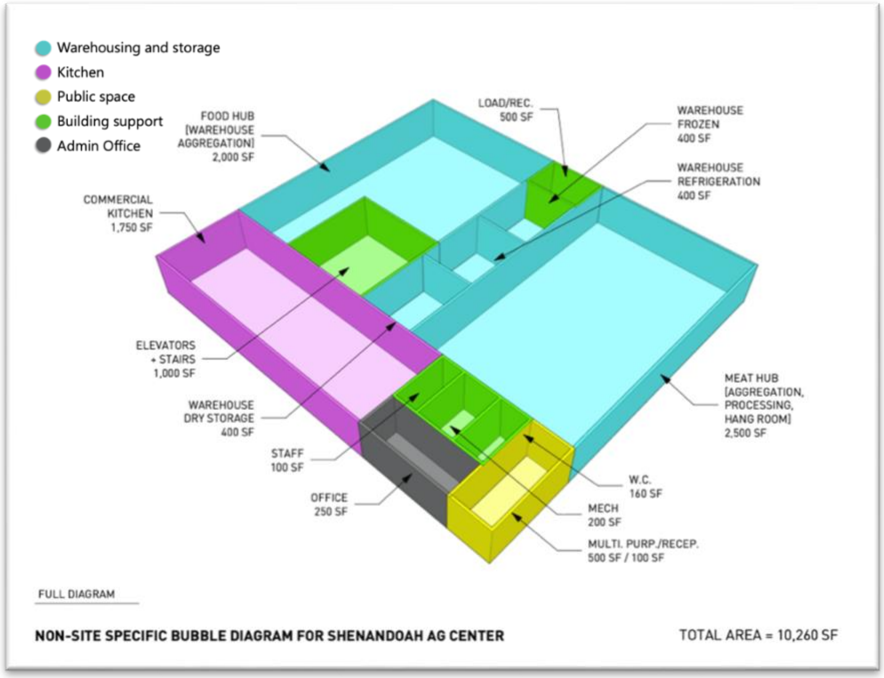
Key Research Findings: Key themes emerged during the market analysis. The Shenandoah Valley, uniquely centrally located for both regional and national distribution, presents an opportunity for small farm growth and to connect with existing infrastructure and services within the region. Surveys and interviews identified the need to meet the growing consumer demand for quality local product and convenience and the desire to create stronger networks and partnerships for scale. There is a general sentiment of pride of the rich agricultural history of the region, and the following needs were identified to bolster this industry:

Research Summary

- Small farmers will need to pivot and become wholesale ready in order to reach more markets/customers outside of direct-to-consumer sales.
- Significant interest in having a USDA-inspected shared-use commercial kitchen in the region, as farmers currently have to travel outside the region for access.
- Research found high interest in services that can take the onus off the farmer or business to do marketing, sales, distribution, and regulatory compliance.
- Farmers in the region are independent yet want access to shared resources.
- Virginia farmers are competing with ranchers in the West and commodity farmers in the Corn Belt, but the region doesn't have the acreage to compete with either: farmers have the opportunity to focus on high-value, specialty crops to differentiate from commodity agriculture.
- The region can grow a diversity of crops and specialty produce, top crops grown include: tomatoes, potatoes, squash, beans, sweet corn, cucumber, greens/lettuces, beans, berries, peaches, apples, and grapes.
- Local demand/buying power *within* the region is limited but is strong in nearby cities and within the state of Virginia, and there is growing demand for high-value hand-picked crops (i.e., asparagus, berries, tomatoes).
- A lack of meat slaughter and processing infrastructure in the region is a threat to family farm businesses.

Recommended Operating Model: The selected operating model, named The Shenandoah Specialty Meat and Produce Hub (the Hub), may be located in either Rockingham County or Augusta County, near one of the independent cities of Waynesboro, Staunton, or Harrisonburg, however, site selection is still in progress. The mission of the facility will be *to build resilience and sustain small, local farms and food businesses in the Shenandoah Valley.*

The Hub will have three core service areas: produce aggregation (food hub), meat processing and aggregation (meat hub), and a commercial kitchen.



- The Hub will be a single building with a dual focus on multi-species **meat aggregation and processing** and serving as a **produce hub and distribution center**. A **commercial kitchen** will support both functions.
- The Hub will provide branding, marketing, and sale of high-quality agricultural products through food hub aggregation and online sales to wholesale and retail buyers. Additionally, the facility will focus on the expansion and scale of meat production and distribution within the Central Shenandoah Valley region. Key aggregation, production, distribution, marketing, and warehousing services will be available to support all business stages.
    - The Hub will have a special emphasis on supporting meat producers in the region by filling gaps in meat fabrication, processing, labor/training, and storage needs. This model supports the scale-up of the needed butchery workforce and meat education across the region with in-house skills training programs for farmers on meat fabrication, slaughter, and specialty processing.

Revenue Model: Revenue from the hub will come from the following ways:

- Kitchen rentals - long-term tenants and short-term users who pay an hourly fee
- Service fees - contract manufacturing, meat processing, value-added services
- Facility usage fees - storage, meeting space
- Support programming and services offered by the core operators – food/meat hub online marketplace sales, business incubation

Revenue growth opportunities identified for years 1-5 include workforce development programming, a direct-to-consumer meat subscription business, an on-site BBQ-themed food truck, and food truck parking / facility access.

Financial Analysis: The pro forma profit and loss (P&L) shows a net loss of -$353,000 in year 1 and positive income of $52,000 by year 4. Gross profits from operations are $1.0M in year 1 and $1.8M in year 5. The financial model assumes 65 percent of the price received from buyers goes to the farmer and the Hub purchases beef at $1,575 per head from the farmer. Commercial kitchen utilization is estimated at 38 percent in year 1 and 52 percent by year 5 – growing 10 percent per year. Food Hub utilization rate is estimated at 50 percent in year 1 and 70 percent by year 5. The majority of meat processing revenue will come from specialty meat cuts for retail sale and will be the highest driver of revenue. Earnings before interest, taxes, depreciation, and amortization (EBITDA) is negative only in year 1 and becomes positive in year 2.

In $1,000s	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	2,069	2,357	2,679	2,986	3,277
Cost of Goods Sold	1,054	1,167	1,288	1,393	1,503
Gross Profit	**1,015**	**1,191**	**1,391**	**1,592**	**1,774**
Operating Expenses	1,116	1,183	1,222	1,261	1,302
EBITDA	**-101**	**8**	**169**	**331**	**472**
Interest, Depreciation, Taxes	252	252	252	279	325
Net Profit	**-353**	**-244**	**-82**	**52**	**148**

Consolidated Five Year Projections for the 3 Enterprises

Conclusion: This feasibility study confirms the potential to support small and midsized farms in the region looking to strengthen the local food and farm economy and reach new markets through a multi-use agricultural food hub and commercial kitchen facility. Food system infrastructure that is dedicated to small producers and their unique challenges is essential in bringing sustainable food system change to any community. The Shenandoah Valley is no exception; it has all of the pieces needed for a vibrant local food economy and the opportunity to unite them under one vision to support these growers and consumers.

I. Project Background

Purpose and Vision

The **Central Shenandoah Planning District Commission** (CSPDC) represents and serves the local governments of Augusta, Bath, Highland, Rockbridge, and Rockingham counties and the cities of Buena Vista, Harrisonburg, Lexington, Staunton, and Waynesboro as well as the 11 towns within the Central Shenandoah region of Virginia. In March 2020, the CSPDC issued a request for proposal (RFP) for a consultant to undertake a feasibility study for an Agricultural Enterprise Center in the Shenandoah Valley. The overall goal of the project and development is to support business diversification and growth in the Shenandoah Valley through value-added products and the delivery of agricultural goods and products to new markets. And, specifically, to support regional food entrepreneurs and farmers.

An Agricultural Enterprise Center has the potential to significantly accelerate this growth. This multi-use facility is intended to help growers and producers expand their market area, bridge the market gap, and pool together products to meet market demands.

Project Goals

The project is designed to support business diversification and growth in the Shenandoah Valley of Virginia through value-added products and the delivery of agricultural goods and products to new markets.

Research Hypothesis

A feasibility study will examine a number of components to optimize the balance among the ability to meet the market need, the size and scale of the facility and the cost to build and operate the enterprise. Initial ideas for uses and services at the Agricultural Enterprise Center include the following:

- food hub
- food lab/testing kitchen
- training and event space
- packaging, distribution operations
- commercial kitchen
- flash freeze facility
- retail store for products made at the facility
- business planning

Study Funding

The CSPDC was awarded an $85,000 grant from the U.S. Department of Agriculture's Local Food Promotion Program in 2020. Out of 215 applications to the program, this project was 1 of 42 that were awarded funds; it was the only project funded in Virginia. Combined with a GO Virginia Enhanced Capacity Building grant, these funds were used to determine the viability of a certified, commercial, shared-use Agricultural Enterprise Center located in the Central Shenandoah Valley.

Project Teams

Team Member		Role
	CSPDC STUDY TEAM	
Rachel Salatin	CSPDC	Core Team
Bonnie Riedesel	CSPDC	Core Team
Elizabeth McCarty	CSPDC	Core Team
Brenda Mead	Staunton City Council	Extended Team
Rebekah Castle	Augusta County Economic Development Director	Extended Team
Casey Armstrong	Rockingham County Assistant Administrator	Extended Team
Meghan Welch	VA Economic Development Partnership	Extended Team
Scot Lilly	Farm Credit of the Virginias	Extended Team
Devon Anders	InterChange Group	Extended Team
Margaret Ann Smith	South Lex Cattle Company	Extended Team
Michele Bridges	Virginia Department of Agriculture & Consumer Services	Extended Team
Travis Carter	Shenandoah Valley Partnership	Extended Team
Keith Holland	Three Rivers Farm	Extended Team
	NEW VENTURE ADVISORS	
Kathy Nyquist	Principal	Lead project partner
Melissa Hamilton	Engagement Leader	Strategy and oversight
Caroline Myran	Project Manager	Research analyst, study author
Sheree Goertzen	Research Analyst and Writer	Study editor and author
Joel Berman	Kitchen Design Specialist	Conceptual facility design
Annie Kalavagunta	Finance Specialist	Financial and revenue modeling
Andrea Carbine	Kitchen Operations Specialist	Kitchen operations and programming
Emmy Nyquist	Research Assistant	Primary research support

Study Methodology

New Venture Advisors (NVA) has developed a multi-stage planning process. The early stages examine the food system to uncover gaps and opportunities for development. Where enterprise ideas are indicated, NVA develops and refines the business case in a phased approach that tests its viability before advancing. The specific scope of NVA projects varies based on the needs of our clients. For some, NVA focuses on a single step or combination of deliverables in this process; for others, NVA works from idea to venture launch to ongoing strategic support.

Community Organization We assist at this earliest stage by helping individuals and small groups form effective coalitions, conduct outreach to the broader community, build strategies and action plans for economic development, and approach granting agencies for funding.

Opportunity Identification We begin forming the business case through an initial environmental assessment, which includes meetings with all stakeholders and potential project partners to shape the focus of the feasibility study and determine potential strategies for consideration.

Feasibility Assessment If this initial assessment is positive, we conduct an extensive feasibility study to further shape the business concept and test its viability. This includes focus groups and surveying of all relevant players across the local food supply chain, assessment of local infrastructure, and an evaluation of potential operator models and ownership structures. In a for-profit context, viability is based on financial models that analyze the potential for the business to earn a satisfactory profit for owners and investors. In a nonprofit context, viability is defined by the client team and might include the potential of the venture to increase local production and supply, convert commodity to specialty crop acreage, improve health indicators, have positive rural and urban economic impact, and be financially self-sustaining over the long term. The specific assumptions behind these factors are derived from primary and secondary research.

Business Planning Once the business case has been validated through feasibility analysis, we help teams develop a formal business plan and prepare for fundraising. The business plan adds further rigor to the assumptions and business model, including complete operations, marketing, and financial plans. It identifies the funding needed from investors and lenders and projects the level and timing of investor returns. If an operator for the enterprise has not yet been identified, we assist our clients in conducting an **operator search and selection process** before this phase of work begins.

Growth Strategy We help startups stabilize through sales and marketing strategy, financial management, and operations assessment. We help later-stage companies grow by identifying and evaluating new opportunities using business case and capital budgeting analysis. And we help established food enterprises develop strategies and innovations that drive growth because they are rooted in our understanding of the motivations and values that are fueling the good food movement, a seism that continues to reconfigure shelves, menus, and plates in every channel of the food industry.

Upon a “go” decision resulting from this feasibility study, the next step would be to identify operators for the various components of the Agricultural Enterprise Center and develop a business plan in preparation for fundraising and launch.

Timeline

Kickoff meeting with Core Team	July 2020
Finalize project plan	August 2020
Finalize interview instruments	August 2020
Research on food system landscape in CSV	September-October 2020
Conduct interviews	August–October 2020
Synthesize interview notes	October 2020
Finalize survey instruments	September 2020
All surveys opened	September 2020
All surveys closed	October 2020
Synthesize surveys and interviews	October 2020
Present research findings, operating model recommendations, case study examples, to Study Team	November 2020
Narrow to one model	December 2020
Develop capacity models, preliminary break-even models, building programs, and bubble diagrams for narrowed set of operating models	January – February 2021
Develop site plan and drawings based on final building program	March 2021
Develop presentation materials to showcase options to stakeholders	March 2021
Estimate construction costs and develop financing strategy; develop pro forma financial projections through break-even; conduct risk and impact assessment	March 2021
Present final recommendations	March 2021
Draft full feasibility study and recommendations	March – April 2021
Conduct stakeholder presentations	April 2021
Prepare executive summary presentation and final report	May 2021

II. Market Analysis

Secondary research was conducted September–November 2020 to gain a better understanding of regional demographics, agricultural and economic conditions, and the food system landscape. Secondary research accessed public and syndicated data to create an overview of the local, regional, and statewide food systems. High-level research findings and initial themes were reviewed with the CSPDC Study Team on November 4, 2020. These factors are considered in the recommended operating model for the Agricultural Enterprise Center.

Background on the Central Shenandoah Valley

The **Central Shenandoah Valley (CSV)** is a 4,264-square mile region that consists of seven counties—Augusta, Bath, Highland, Page, Rockbridge, Rockingham, and Shenandoah—and the five independent cities of Buena Vista, Harrisonburg, Lexington, Staunton, and Waynesboro.

Since 2010, the CSV has slightly increased in population by 4.5 percent, from 352,739 to 368,436 people. Table 1 breaks down the population in each county (which includes independent cities) and the independent cities alone based on the U.S Census 2019 Estimates.[1]

[1] U.S. Census Bureau, "Quick Facts Estimates," July 1, 2019, accessed September 20, 2020.

Table 1: Population of Counties and Independent Cities, 2019

Augusta	Bath	Highland	Page	Rockbridge	Rockingham	Shenandoah
75,558	4,147	2,190	23,902	22,573	81,948	43,616
Buena Vista	**Harrisonburg**	**Lexington**	**Staunton**	**Waynesboro**		
6,478	53,016	7,446	24,932	22,630		

In the CSV, 85.8 percent of the population is White alone, 5.9 percent is African American/Black, and 5.3 percent is Latino. The median age is 41.4 years.[2]

The median income in the CSV is $53,012, which is below the median for the State of Virginia at $72,577. However, the median income is a 16 percent increase from 2010. Unemployment before COVID-19 was at 2.3 percent. As of August 2020, unemployment is 4.8 percent.[3]

As of 2018, the poverty rate in the CSV is 11 percent, which is the same as the state average. Records indicate that 9.3 percent of the population received Supplemental Nutrition Assistance Program (SNAP) benefits and 10.2 percent were food insecure (14.4% of children were food insecure).[4] According to Feeding America, food insecurity in this region is expected to increase to 15.7 percent as a result of COVID-19. During the 2019–20 school year, there were 48,808 children enrolled in public schools in the CSV of which 49.7 percent were eligible for free or reduced lunch.[5]

Economic Landscape

According to the Virginia Economic Development Partnership (VEDP), at the end of 2019, there were 182,704 people in the labor force. The five largest employment sectors are government (17.4%), manufacturing (16.1%), health care and social assistance (11.7%), retail (11.3%), and accommodation/food service (11.0%). Food and beverage production are at the core of the region's manufacturing sector, employing over 16 percent of the CSV's labor force.[6]

The agribusiness- and manufacturing-fueled economy is also supported by a healthy supply chain of production technology and heavy machinery, folding paperboard box manufacturing, refrigerated warehousing and storage, plastics products manufacturing, and more. The Shenandoah Valley Partnership reported that at the end of 2019, the total number of jobs across all industries grew by 7,814 over the last five years. The major employers

[2] Ibid

[3] Virginia's Career and Workforce-Labor Market Information, "Current Area Local Unemployment Statistics," October 2020, accessed November 23, 2020, https://virginiaworks.com/local-area-unemployment-statistics-laus.

[4] Feeding America, "Food Insecurity in Virginia," 2018, accessed November 23, 2020, https://map.feedingamerica.org/county/2018/overall/virginia.

[5] Virginia Department of Education, "VDOE National School Lunch Program Free and Reduced-Price Eligibility Reports," accessed November 23, 2020, http://www.doe.virginia.gov/support/nutrition/statistics/index.shtml.

[6] Virginia Economic Development Partnership, "Shenandoah Valley Community Profile," 2019, accessed December 7, 2020 https://www.vedp.org/region/shenandoah-valley.

as of 2019 are listed in Table 2, with agribusiness and food companies dominating the manufacturing sector and healthcare, education, and retail as the dominant non-manufacturing businesses.[7]

Table 2: Major Employers in the Shenandoah Valley, 2019[8]

Major Employers	
Manufacturing	
Cargill Meat Solutions	Poultry processing
George's Chicken LLC	Poultry processing
Hershey's Chocolate of Virginia	Confectionery products
LSC Communications	Book Printing
McKee Foods Corporation	Snack cakes
Merck & Company Inc	Pharmaceuticals
MillerCoors Shenandoah Brewery	Malt beverages
Perdue Farms, Inc	Poultry processing
Pilgrim's Pride Corporation	Poultry processing
Tenneco Automotive Inc.	Motor vehicle parts
Non-Manufacturing	
Augusta Health	Health care
James Madison University	Higher education
Marshalls	Retail distribution
Mary Baldwin University	Higher education
Sentara/Rockingham Memorial Hospital	Health care
Target	Distribution center
Omni Homestead Resort	Hotel and resort
Wal-Mart Stores, Inc	Discount store
Washington & Lee University	Higher education

Landscape of Agricultural Production

Four out of five of Virginia's top agricultural producing counties are located in the CSV. There are 997,746 total acres in the CSV. The area has seen a decline in farmland acreage. In 2012, 73.9 percent of all acres were used in agriculture; as of 2017, that number dropped to 61.3 percent. The average value for an acre in the region is $5,719, which is higher than the state average of $4,624 per acre.[9]

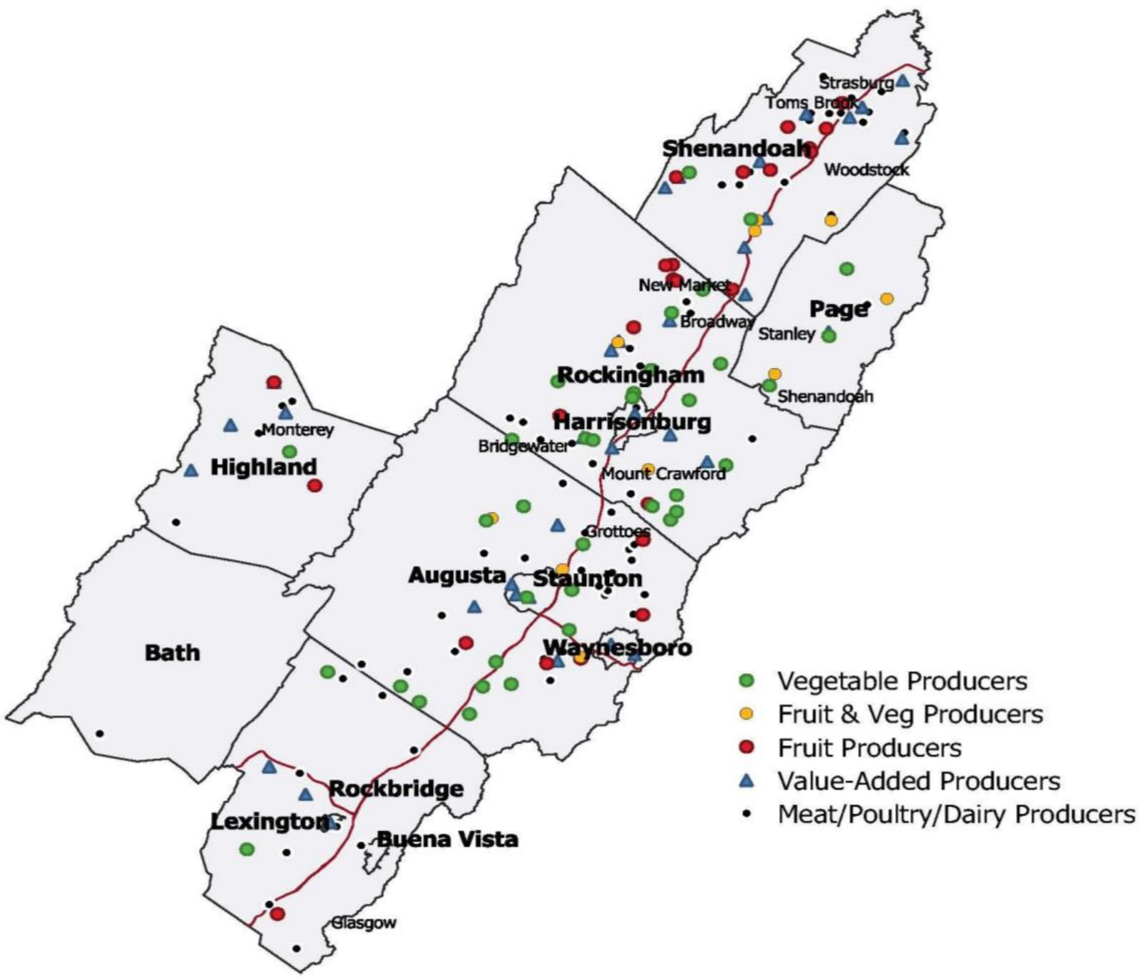
[7] Shenandoah Valley Partnership, "Labor Market Data," 2020, accessed December 7, 2020 https://theshenandoahvalley.com/resources-reports/data-reports/

[8] Virginia Economic Development Partnership, "Shenandoah Valley Community Profile," 2019, accessed December 7, 2020 https://www.vedp.org/region/shenandoah-valley.

[9] Ag Census USDA National Agriculture Statistics Service, "2017 Census of Agriculture, Virginia," 2017, accessed September 20, 2020, https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Census_by_State/Virginia/index.php.

The number of farms in the CSV has decreased, from 6,343 farms in 2012 to 6,312 in 2017; however, the number of farms in Rockingham County has increased by 7 percent. In addition, the number of vegetable farms has increased from 220 to 237. The median (any) farm size is 216.3 acres. The average vegetable producing farm is 3.9 acres. Of the 6,312 farm operations with 10,706 producers, 95 percent are family operations. The average age of producers is 59.8 years, and the average time spent on their current farm is 22.7 years. The average net income for farm operations is $50,375.[10] Nationally, Virginia is in line with the agricultural trends seen across the United States in the last decade: decrease in overall farmland acreage, increase in farm acreage for both very large farms (2000+ acres) and very small farms (1-9 acres), and decrease in midsized farms.[11]

Figure 1: CSV Agricultural Production Map (see Appendix 12 for list of producers)



[10] Ibid

[11] Ag Census USDA National Agriculture Statistics Service, "2017 Census of Agriculture," 2017, accessed November 20, 2020, https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_US/usv1.pdf

Meat and Dairy Production

Production of red meat in Virginia has been on the decline since 2000. Data on the meat industry shows that the total inventory of red meat livestock species have decreased: Beef cattle has decreased by 3%, hogs by 20%, and meat goats by 26%. The inventory of sheep and lambs, however, has increased by over 29%.[12]

As of 2017, there were 2,911 beef operations, 191 pork operations, and 475 sheep operations in the CSV. In addition, there were 662 poultry-layers operations and 491 poultry-broilers operations. Livestock, poultry, and meat products brought in $1,174,613,795 in sales, which is 50 percent of the total sales in the state of Virginia and a 17.6 percent growth in sales from 2012 to 2017. Rockingham and Augusta are among the top beef cattle and dairy milk producers in the state. Rockingham County had over 24,000 beef cattle and produced 492.5 million pounds of milk. Augusta had 35,000 beef cattle and produced 125.3 million pounds of milk.[13]

Table 3: Meat Products and Farmers Market Prices in the Shenandoah Valley[14]

Commodity	# Producers	Avg. Famer's Market Price $/Lb. (2020)
BEEF	2977	
Beef (Ground)		7.27
Beef (Roast)		8.65
Beef (Steaks)		15.72
CHICKEN BROILERS	497	
Chicken (Whole)		4.74
Chicken (Thigh/Legs)		6.71
Chicken (Breast)		11.08
PORK	191	
Pork (Ground)		7.67
Pork (Chops)		10.74
Pork (Sausage)		8.50
SHEEP	475	
Lamb (Ground)		8.00
Lamb (Chops)		19.00

Produce Production

In all, commodities in the CSV brought in $1,445,266,000 in sales (2017), which is 37 percent of the total sales in Virginia. Sales in vegetables, fruits, and tree nuts only account for 1 percent of the total sales. They have,

[12] Virginia FAIRS, "A Study of Small-Volume Red Meat Processing in VA, September 2020."
[13] Ag Census USDA National Agriculture Statistics Service, "2017 Census of Agriculture, Virginia."
[14] Virginia Department of Agriculture and Consumer Services, "Retail Farmer's Market- September 2020."

however, significantly grown, from $10,145,000 in 2012 to $15,432,000 in 2017. Table 4 shows the top products grown based on number of producers and acres in production.[15]

Table 4: Top Crops (total number of producers/total acres in production) in the Shenandoah Valley (2017)

Product	# of Producers	# of Acres	Avg. Farmer's Market Price in Dollars (2020) [16]
Tomatoes	103	56	2.73/lb.
Potatoes	71	87	1.64/lb.
Pumpkins	70	251	4.00-10.00 each (varies on size)
Beans	58	2	2.94/lb.
Squash	54	16	1.93/lb.
Sweet corn	51	162	7.80/dozen
Cucumbers	49	9	0.94 each
Lettuce	47	27	3.50/bunch
Peppers	40	8	1.04 each
Greens	36	9	2.25/lb.
Onions	36	3	2.00/lb.
Beets	34	9	3.50/bunch
Broccoli	34	12	2.38/lb.
Cantaloupe	31	11	3.50 each
Watermelon	30	39	5.00-6.00 each
Cabbage	28	2	0.61/lb.
Garlic	28	11	2.00/head
Berries	76	79	strawberries 5.90/lb. blackberries 5.05/lb.
Apples	73	71	2.03/lb.
Grapes	69	441	5.00/quart
Peaches	31	21	2.19/lb.

Additionally, there are 49 operations growing vegetables under protection (i.e., greenhouses). One of the key operations is Shenandoah Growers, the only large-scale USDA certified organic soil-based indoor growing system in the United States. They have 12 growing locations across the country, and they provide organic, local produce to over 18,000 stores every day.

Sustainable Practices

The CSV has few certified organic operations, with only 1 percent of farm operations reporting USDA organic certification. However, several farmers reported in the study survey (discussed in the following Primary Research section) that they implement organic practices such as using low or no chemicals. Approximately 20 percent of farms practice no tillage or limited tillage farming, and 10 percent utilize cover crops. Additionally, 18 percent practice rotational or management-intensive grazing.[17]

[15] Ag Census USDA National Agriculture Statistics Service, "2017 Census of Agriculture, Virginia."
[16] Virginia Department of Agriculture and Consumer Services, "Retail Farmer's Market- September 2020."
[17] Ag Census USDA National Agriculture Statistics Service, "2017 Census of Agriculture, Virginia."

Local Procurement Landscape

The degree of values-based procurement in a region, i.e., institutions and food service outlets that purchase local product and where local products are bought and sold, signals the maturity of the local food system and where there are potential market opportunities for local producers. Understanding the landscape of local procurement is an essential step in analyzing a food system.

There are 14 farmer's markets among the seven counties in the CSV. Year-round markets are held in Staunton, Harrisonburg, and Lexington. There are 19 CSAs in the CSV and 22 on-farm markets.[18]

Photo credit: Staunton Farmers Market

There is currently no food hub operating in the CSV. The closest serving food hub is The Local Food Hub in Charlottesville, which is approximately 38 miles from Staunton. Currently, 11 CSV farms and 10 value-added producers sell to The Local Food Hub, according to the company's website. During interviews for this study, several farmers mentioned participating in informal aggregating with other farms. In addition, the Shenandoah Valley Produce Auction, which is run by the Mennonite community in Dayton, is a popular platform for many wholesale buyers in the area to purchase local produce.

There are 23 grocery stores and retail markets that sell local produce and/or value-added products.[19] Distributors with local procurement programs include Wholesome Foods, Produce Source Partners, and Cavalier Produce.

The Allegheny Mountain Institute (AMI) and Project GROWS are the most active nonprofits working to support farm-to-school programming. AMI started a classroom garden with Virginia School for the Deaf and Blind. The school now operates the garden for educational purposes and for sourcing school lunches. AMI is also a partner of Augusta Health, where they operate a farm at the hospital. Food grown is used for food service at the hospital as well as for a Food Farmacy program for patients that meet certain health need requirements.

Project GROWS operates a small education-based farm, a CSA, and works to increase food access at farmers markets in the region. No other farm to school programs surfaced during research.

Until now, there has been no *formal* local procurement initiative at any of the local public schools or other institutions in the region, although one farmer in Page County mentioned that he sold sweet potatoes to the

[18] 2019-2020 Shenandoah Valley Buy Fresh Buy Local Guide, accessed November 23, 2020, https://www.pubs.ext.vt.edu/SPES/SPES-136/SPES-136.html.

[19] 2019-2020 Shenandoah Valley Buy Fresh Buy Local Guide, and google search

local school.[20] However, in July 2020, the USDA awarded grants to two non-profit organizations collaborating with local school divisions:[21]

- Augusta Health Foundation to support efforts in Waynesboro to reduce food insecurity, increase the use of locally grown and raised foods in school nutrition programs, and expand agriculture education;
- Project Grows Inc. for a farm-to-school initiative in Staunton, including food tastings, the integration of local farming and food production into curriculum and instruction, school gardening, and expansion of local food procurement by school nutrition programs.

Market Supply and Demand

In all, most food grown in the CSV is sold outside of the region due to its close proximity to Washington D.C. and Charlottesville, Virginia. Using the Local Food *MarketSizer®* tool created by New Venture Advisors, Table 5 illustrates the local food supply and demand in the CSV using inputs from the 2017 USDA Agriculture Survey. The Local Quotient refers to the percentage of sales that is produced within each county.

"It's hard to balance supply and demand—part consumer education and part price points. Have to travel to Charlottesville to make pricing work."

– Stakeholder from Rockingham County

Table 5: Local Food Supply and Demand (2017)

	Augusta	Bath	Highland	Page	Rock-bridge	Rocking-ham	Shenandoah	State of Virginia	Washington D.C.
Fruits & Vegetables									
Local Quotient	18%	5%	59%	2%	15%	62%	61%	12%	0%
Local Demand	$17M	$1.3M	$650K	$5.9M	$5.8M	$18M	$10M	$1.8B	$160M
Local Food Supply	$3.1M	$62K	$380K	$120K	$850K	$11M	$6.2M	$220M	-
Meat									
Local Quotient	488%	382%	2751%	252%	449%	412%	254%	53%	0%
Local Demand	$6.4M	$490K	$240K	$2.2M	$2.1M	$6.6M	$3.8M	$690M	$60M
Local Food Supply	$31M	$1.9M	$7.7M	$5.5M	$9.7M	$27M	$9.8M	$360M	-
Poultry & Eggs									
Local Quotient	3401%	0%	6443%	7670%	205%	11190%	3263%	191%	0%
Local Demand	$2.8M	$210K	$100K	$950K	$930K	$2.8M	$1.7M	$300M	$26M
Local Food Supply	$94M	-	$6.8M	$73M	$1.9M	$320M	$54M	$570M	-

Table 5 reports that the local demand for fruits and vegetables cannot be met by current production within each county, whereas the production for meat and poultry/eggs far exceeds local demand. This means that these counties are shipping outside of the CSV region in order to sell product.[22] This also shows how the demand for local meat and vegetables in Washington D.C. *alone* outstrips the supply of these items being produced in the

[20] Interview, 2020

[21] Virginia Dept of Education, "USDA Farm to School Grants Connect More Students with Locally Grown and Raised Food," accessed November 23, 2020, https://content.govdelivery.com/accounts/VADOE/bulletins/297333d.

[22] New Venture Advisors, Local Food *MarketSizer®* accessed November 23, 2020, https://toolsite.newventureadvisors.net/login.

CSV, while poultry and eggs are being produced to be sold on the national market—which is illustrated by the estimate that total demand in Virginia is lower than production in Rockingham County alone.

This represents a strong market opportunity for local producers to sell into markets outside of the CSV due to the high demand of local food in urban areas surrounding CSV and Virginia.

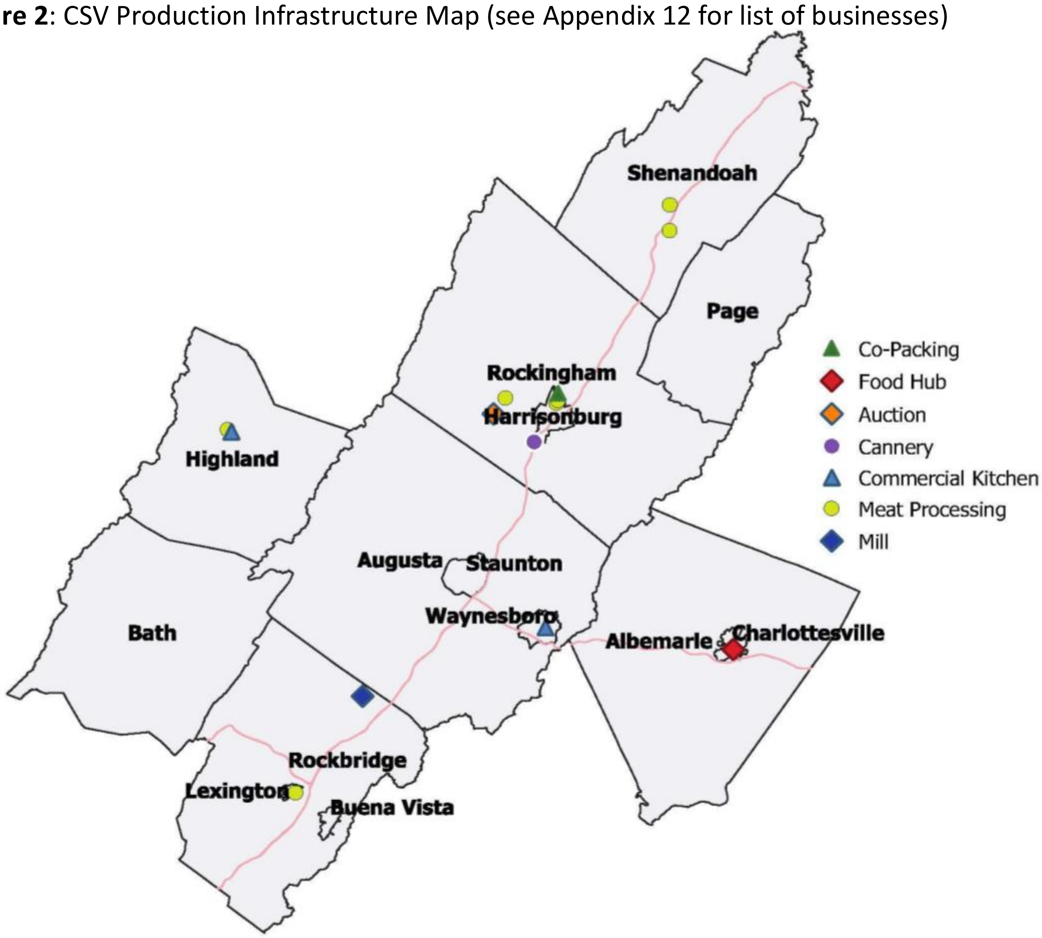
Local Infrastructure

Food system infrastructure designed to support small and local producers is key to ensuring the success and resiliency of small farms and businesses. This type of infrastructure can include, but is not limited to, canneries, commercial kitchens, food hubs, small value-added processors, cold and frozen storage, education and training and small food distributors. Understanding the existing landscape of infrastructure and support services helps identify gaps and needs in a food system.

Commercial Kitchens/Canneries

The largest commercial kitchen is the Highland Center Incubator Kitchen located in Monterey. The Highland Center operates a full-service inspected kitchen equipped with a walk-in freezer, commercial mixer, pH meter, steam-jacketed kettle, six-burner stove, and convection oven. They offer free business counseling to their members, providing help with business planning, marketing, financial planning, and operations.

Figure 2: CSV Production Infrastructure Map (see Appendix 12 for list of businesses)



There is another smaller commercial kitchen called the Commercial Prep Kitchen in Waynesboro. Additionally, at the onset of the COVID-19 pandemic, some privately owned restaurant commercial kitchens, such as the Newtown Baking and Kitchen in Staunton, extended the kitchen to those who needed certified preparation space.

Many interviewees mentioned using the Prince Edward County Cannery and Commercial Kitchen located in Farmville, about 100 miles southeast of Staunton. It is managed in partnership with the County and Virginia Food Works. Their capacity includes equipment for preparing and heat processing food into shelf-stable containers, a full-service co-packing facility with the ability to turn ingredients and recipes provided into resale-ready products, and space rentals for cold and frozen storage.

The area includes a handful of other private small food processors: one grain mill (Wades Mill), one cannery (Country Canner), and one full dairy processing and bottling facility (Mt Crawford Creamery).

In addition, Friendship Industries in Harrisonburg offers contract co-packing and packaging for food businesses. They also have the ability to meet requirements for refrigerated packaging and temporary storage before shipment.

Meat Processing

Red meat slaughter is up nationally, but has decreased significantly in Virginia since 2000, dropping by almost 26% by 2019. Most of the slaughter and processing facilities located in Virginia are along Interstate 81, with the majority clustered in Northern Virginia.[23]

There are three small meat processors within the CSV: Donald's Meat Processing (Lexington), D&M Meats (Mt Jackson) and Allegheny Meats (Monterey, not currently operational). Donald's is USDA certified, whereas D&M is a custom butcher for personal consumption only. According to the USDA Agricultural Census, 74 farms have on-farm meat packing facilities.[24]

There are also two slaughterhouses with meat processing in the region for smaller producers:

- Gore's Processing in Edinburg (USDA and organic certified) slaughters beef, swine, and sheep
- True and Essential Meats in Harrisonburg (TA certified) slaughters beef, swine, sheep, and goat

Virginia Poultry Growers Cooperative (Broadway) is an independent poultry (turkey) processing company that is owned by the growers. Farmer Focus (Harrisonburg) is another independent chicken processing facility that works with local farmers who raise organic flocks.

The region is also home to several commercial meat and poultry slaughterhouses and processing businesses that export products around the globe, including Cargill Protein, George's Chickens, and United States Cold Storage.

Inspection Regulations

Food establishments, including private homes, that manufacture, process, pack, or hold food for sale are subject to the Virginia food laws and related regulations. It is unlawful to operate a food business until it has been inspected. Catering is not permitted from a home-based kitchen. Products containing meat are regulated by the

[23] Virginia FAIRS, A Study of Small-Volume Red Meat Processing in VA, September 2020.

[24] Ag Census, USDA National Agriculture Statistics Service, "2017 Census of Agriculture," 2017, accessed September 20, 2020, https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Census_by_State/Virginia/index.php.

office of Meat and Poultry Services.[25] However, under Virginia's Home Kitchen Food Processing Exemption, certain canned foods, low-risk foods, and honey are exempt from inspection (see Table 6).[26]

Table 6: Food Processing Exemptions

Category	Products	Where they can be sold
Canned Foods—Exempt from Inspection	• Pickles, acidified vegetables processed in a private home; • Acidified vegetable products include pickled products, salsa, chow-chow, relishes and similar vegetables that are processed in a private home	• Farmer's market • From the private home where the product is manufactured • To individuals for personal consumption
Low-Risk Foods—Exempt from Inspection	• Candies, jams and jellies, and baked goods that do not require time or temperature control for safety and are produced in a private home. • The expanded exemption includes the following products produced in a private home: dried fruits, dry herbs, dry seasonings, dry mixtures, coated and uncoated nuts, vinegars and flavored vinegars, popcorn, popcorn balls, cotton candy, dried pasta, dry baking mixes, roasted coffee, dried tea, cereals, trail mixes and granola.	• Farmer's market • From the private home where the product is manufactured • To individuals for personal consumption
Honey—Exempt from Inspection	• Private homes where the resident processes and prepares pure honey produced by his/her own hives (sells less than 250 gallons/year) • This does not include INFUSED honey	There are no restrictions where products are sold or to whom

All meat and poultry products offered for sale require regulatory oversite. Products from livestock processed for resale require inspection per the Federal Meat Inspection Act. However, the State of Virginia offers exemptions for poultry based on the size of the operation when certain criteria are met. The exemptions mean that certain types of poultry slaughter and processing operations qualify to operate without the benefit of federal inspection on a daily basis, and a grant of federal inspection is not required. For example, on-farm poultry slaughtering inspection exemptions exist for producers who slaughter and sell less than 1,000 birds direct to consumer and for producers who slaughter and sell less than 20,000 birds within the state of Virginia and to Washington D.C.

Producers who slaughter and dress poultry for restaurants or other retail must operate under the retail exemption. This exemption ensures that retail businesses where poultry products are sold remain at an amount considered normal for retail purchase (75 pounds for consumers, 150 pounds for restaurants or similar).[27]

At this point no license or inspection is required for the selling of eggs in the Commonwealth. The Virginia Egg Law ensures safety and quality of the marketing of eggs. The law requires shell eggs being offered for sale must

[25] Virginia Department of Agriculture and Consumer Services, "Home and Commercial Kitchen-Based Businesses," accessed October 15, 2020, https://www.vdacs.virginia.gov/dairy-kitchen-food-services-businesses.shtml.
[26] Virginia Department of Agriculture and Consumer Services, "Virginia's New Home and Kitchen Processing Exemptions Businesses," accessed October 15, 2020, https://www.vdacs.virginia.gov/pdf/kitchenbillfaq.pdf.
[27] Virginia Department of Agriculture and Consumer Services, "A Guide to Selling Meat and Poultry Products in Virginia," accessed October 15, 2020, https://www.vdacs.virginia.gov/pdf/inspectionguide.pdf.

be clean, held at 45°F or less at all times, and labeled with the following: safe handling instructions; name and address of packer; grade; and name of product. Producers who sell a total of 150 dozen eggs or less per week produced by their own hens are exempt from the law, although farmer's markets may enforce it as a requirement to sell at the market.

Food and Farm Business Landscape

There are an estimated 43 restaurants and caterers in the region that use local produce/products. There are also 8 food trucks that are based in the region.

There are approximately 41 value-added/consumer packaged goods businesses, many of which use local produce or products in their goods.

Agrotourism is a growing industry in the CSV. As of 2015, there were 237 agrotourism venues (40 wineries, vineyards, or breweries) that brought in 736,236 local visitors, 533,136 non-local visitors, and $255.8 million in visitor spending. Agrotourism sustained 3,716 jobs and $141 million in labor income.[28]

Support for Small Food Businesses and Beginning Farmers

There are 11 colleges and universities in the CSV. There are no farm or agriculture-related degree programs. However, through the Virginia Extension offices, there are a variety of educational opportunities for farmers and interested individuals. There is a lack of ServSafe and food handler's classes available in the CSV.

VA Cooperative Extension- VA State University (Woodstock)	• Agriculture/Natural Resources: Animal Science and Equine; Beginning Farmer, Small Farms and Homesteading; Commercial Horticulture; Crop and Soil Science; Farm Business Management; Forages; Home Horticulture and the Local Extension Master Gardener Program; Large Animal Mortality Disposal Information; Pesticide Safety and Applicator Certification; Shenandoah County Sustainable Farm Demonstration; Testing Services (Soil Nutrient Analysis, Insect ID, Weed ID, Plant Disease ID, Feed Analysis, Waste Analysis, etc.) ○ Family and Consumer Science: Consumer Education; Food, nutrition, and health (including ServSafe classes) • Community Viability: Leadership and planning; Community Enterprise and resiliency; Community food system and enterprises; Community Planning; Emerging community issues
VA Cooperative Extension- Virginia Tech (Rockbridge County)- Shenandoah Valley Agricultural Research and Extension Center	• Research and Extension programs at the Center cover livestock (Beef Cattle and Sheep) production, forages and forage systems, and small-scale forestry and wood lot management. • The mission is to provide agricultural producers and Extension educators in Virginia and the mid-Atlantic region with applied, research-based information on the soil, animal, and plant components of forage-based livestock systems.

[28] Economic Impacts of Agrotourism in Virginia, 2017.

Allegheny Mountain Institute (Staunton)	• 18-month fellowship prepares individuals to become teachers and ambassadors for a more vibrant and accessible local food system. AMI Fellows spend six months in immersive, residential training on the Allegheny Farm Campus (Phase I) and one year in service work in the region with AMI and food-related non-profit partner organizations (Phase II). • Offers classes for farmers, gardeners, youth, and cooking classes
Other Ag Related Education Opportunities	• New Country Organics (Waynesboro)- Offers classes on organic farming taught by local farmers • The Highland Center- Community classes (and through Highland County Public Schools) on gardening, local foods, healthy cooking, and nutrition • Polyface Farms (Swoope)- Offers ag seminars and apprenticeships • Mt Crawford Creamery (Mt Crawford)- Offers field trips and education classes on milk and the positives of dairy (for customers not farmers)

Related Education Programs

James Madison University and Blue Ridge Community College are accredited by the Virginia Small Business Development Center Shenandoah Valley as key providers for workforce development programming. The following table outlines the types of support for entrepreneurs and small business owners that food businesses can take advantage of, as well as related degree programs.

Blue Ridge Community College (Weyers Cave)	• Culinary Arts and Management Program (AAS) • Offers Workforce and Continuing Education Classes- HR management, Certified Logistics Course (about supply chains), IT 101, and Microsoft Office
James Madison University (Harrisonburg)	• BA Program in Hospitality Management which includes Culinary Arts • Gillian Center for Entrepreneurship—Offers interdisciplinary programs across the college plus an Entrepreneur Bootcamp for graduating students from any major interested in starting their own business
Virginia Small Business Development Center Shenandoah Valley (Harrisonburg)	• Workshops for new entrepreneurs, in customer service; and marketing and sales • Offers networking events around topics of interest
Other Related Education Opportunities	• Eastern Mennonite University (Harrisonburg)—Offers degrees in Environmental Science & Justice • Bridgewater College (Bridgewater)—Offer degrees in Environmental Science and Nutritional Science

COVID-19 Implications

The COVID-19 pandemic has had serious implications across the local food system, the effects of which will continue to unfold in coming months and years. The pandemic is disrupting the U.S. farm and food supply chain in several ways. The most relevant to the study, is the way the pandemic has changed consumer demand for food at retailers and restaurants. The shift in consumer demand (less demand for restaurant food and more demand for groceries) has implications for growers of fruits and vegetables. Since people are not going to grocery stores as often as before the pandemic, and since consumer incomes are lower, consumer demand for canned and frozen fruits and vegetables is surely much higher than it was prior to the pandemic.[29]

These trends were seen in the findings in the CSV. During interviews, a number of farmers mentioned their business doubling or tripling during COVID, with demand for local products at the highest it has ever been. Catering and prepared meal businesses also reported a doubling or tripling in sales during this time.

The pandemic has caused disruption in processing and wholesaling, particularly in the market for meat. Meat plant closures due to outbreaks coupled with increased consumer demand for groceries with constrained supplies is leading to increased retail prices. At the same time slaughterhouses are not buying as many live animals. This combination is creating bottlenecks in processing at the expense of smaller operations that are given lower priority from processors. With the decreased supply of meat products into the market due to restraints on processing facilities, the wholesale prices of meat have substantially increased, while livestock prices have decreased.

However, there are a number of programs focused on addressing the challenges facing the community while also supporting the growth and development of the local food system. Examples of federal and state funding programs include the following:

- Coronavirus Food Assistance Program
- USDA grants such as the Community Food Projects, Local Food Promotion Program, Farm to School, Farmers Market Promotion Program, Specialty Crops Block Grant, Rural Business Development Grants, and Regional Food System Partnerships
- The Economic Development Administration has released funding through the CARES Act to support economic development projects

[29] Virginia Tech College of Agriculture and Life Sciences, "Impacts of the COVID-19 Pandemic on U.S. and Virginia Farms and Agribusinesses," May 2020, accessed November 23, 2020, https://aaec.vt.edu/content/dam/aaec_vt_edu/extension/aaec-outreach-reports/covid-19-resources-may-2020/COVID-impacts-on-Virginia-5-20.pdf.

III. Primary Research

Primary research consisted of **interviews** and **surveys** of three key stakeholder groups: farmers, food businesses and food buyers.

Interview Methodology

Interviews were conducted via phone July 29 to October 6, 2020. The CSPDC Study Team and NVA generated a list of key stakeholders, farmers, food businesses, buyers, and distributors to be interviewed for the study. CSPDC's recommendations were based on a desire to gain perspectives from these groups and insight into their needs and challenges. NVA designed an interview guide for each audience (found in Appendix 2). In total, 37 interviews took place: 7 preliminary interviews and 30 additional interviews.

The following is a list of stakeholders who were interviewed (a full, detailed list can be found in Appendix 3):

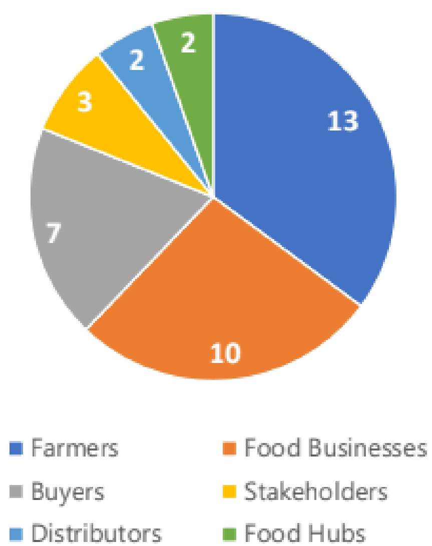
Name	Organization
1. Joel Salatin	Polyface Farms
2. Steve Cooke	Friendly City Coop
3. David Lee	Zion Hill Farms
4. Frank Will	Mount Crawford Creamery
5. Jeff Heatwole	Produce Auction
6. Joe Cloud	T&E Meats
7. Mike Lund	Lundch
8. Jeff Jennings	Long Acres Produce
9. Lee O'Neil	Radical Roots Farm
10. Ron Cropper	Resource Group (representing Sysco)
11. Darrell B. Hulver	Survivor Farm
12. Derek Smiley	Smiley's Ice Cream
13. Tom Brenneman	Project GROWS
14. Bev Eggleston	Ecofriendly Foods
15. Eric Bendfeldt	VA Cooperative Extension
16. Andrew/Valerie Crummett	Cool Breeze Farm
17. Missy Moyers-Jarrells	Laurel Fork Sapsuckers
18. Mark Lilly	Farm to Family
19. Lynn St Clair	Swover Creek Farms
20. Laurie Berman	Allegany Mountain Institute
21. Rosalea Riley Potter	Buffalo Creek Beef
22. Debrah Gosney, Anne Wright	Southside Planning District Commission
23. Lou Ann & Chuck Neely	Riven Rock Farm
24. Kyle Krieger	Les Cochons d' Or
25. StacyRae Johnson	1 Tribe Farm
26. Louella Hill	Bellarino Creamery
27. Tom Stanley	Rockingham / Lexington Extension Agent
28. Kevin McClaren	Augusta Co-op
29. Julie Rice	Vic&Jules
30. Natalie Vandenburgh	4P Foods
31. Julie Houshalter	White Oak Lavender Farm / Purple Wolf Vineyard

32.	Kari Sponaugle	Church Hill Produce
33.	Diane Roll	Mama's Caboose
34.	Keith Holland	Three Rivers Farm
35.	Dave Gardner	Valley Pike Farm Market
36.	Jon Henry	Jon Henry General Store
37.	Wendy Gray	Herban Moonshine, Polyface Farm

Of those interviewed, the following majority characteristics were noted:

- 84% of all farmers interviewed had either meat or produce farms
- 62% of all interviewees were either farmers or food businesses
- 56% of all interviewees had operations in either Rockingham County or Augusta county

37 INTERVIEWS COMPLETED



Counties	
Rockingham (+Harrisonburg)	11
Augusta (+Staunton, Waynesboro)	10
Regional or outside	5
Highland Co	4
Page Co	2
Rockbridge (+Lexington and Buena Vista)	2
Shenandoah Co	2
Bath County	1
Total	**37**

Main Farm Type	
Meat	6
Produce	5
Dairy	1
Other (Lavender)	1
Total	**13**

Interview Findings

Sourcing/Production/Distribution

Buyers expressed challenges in meeting consumer preferences and demands for products (i.e., some canned products and fresh meats), noting that production variety is limited and most are unable to get everything from a single producer.

Most farmers, especially meat producers, mentioned that they heavily rely on off-site processing, which is fully booked up to a year out due to demand. Very few meat farmers mentioned having in-house processing. Additionally, the lack of farmers trained in the area of meat science was frequently mentioned as a growing challenge for scaling meat production. Across product types, most farmers self-distribute and utilize their own delivery vans to travel throughout the region multiple times per week.

Most food business interviewees cited a dependency on utilizing and renting commercial and shared kitchen spaces for production. The biggest barrier for some to produce at home is the requirement to have a certified kitchen. Interests in contract manufacturing to support production expansion were also mentioned.

Food auctions within the Mennonite communities are a key source of distribution; however, producers realize lower margins due to product pricing constraints.

Product

All audiences mentioned the need to react to the growing consumer demand for product quality and convenience. Interviewees mentioned noticeable shifts in interest by consumers to seek and purchase more high value/quality and local food and highlighted the opportunity to create a market for local products. There's a widely-held perception that consumers believe locally grown products are safer as they are not handled as much as non-local product. As a result of COVD-19, many food businesses mentioned pivoting to sell more grab and go and prepared food options due to in-restaurant dining restrictions and realized healthy sales. Consumers perceived the convenience options as sound alternatives. In-home delivery also saw a surge in consumer interest.

Market

All audiences recognized the need and the opportunity to build community, networks and infrastructure to support scale both within and outside of the Shenandoah Valley region. For example, there was consensus that developing Shenandoah Valley marketing, labeling and branding for locally grown products could help build a strong sense of community. Additional infrastructure ideas surfaced, including introducing more local food aggregation efforts to build sustainable food ecosystems that could even attract broader regional collaborations, developing processing partnerships to expand individual producer capacity to bring more value-added products to market, and offering sales support to expand the current customer base.

Agricultural Enterprise Center Needs

All interviewees highly valued the importance of scaling their operations, as indicated by majority interests (+50%) in value added processing, packaging, distribution, marketing and operations support, and a commercial kitchen concept for the Enterprise Center. Additional secondary interests that surfaced include a food hub, cold storage and meat processing.

"We need more food transparency. People are paying more attention to what they are eating, how it affects their body and keeping themselves healthier, and how it is prepared—new people at farmers markets etc." – Food Business Owner in Staunton

"More people want to eat local and know where their food is coming from." – Buyer in Shenandoah

"The desire for local has grown. Consumers have a higher willingness to pay for products." – Buyer in Augusta

"If you opened up a USDA slaughterhouse tomorrow, you'd have a line of customers waiting at the door with animals. But you have to have people who know how to cut meat." – Beef Farmer, Rockingham County

Survey Methodology

The survey was active September 16 to October 19, 2020. The survey was designed in Survey Monkey and targeted three potential users/audiences for the proposed facility to provide input and gain knowledge of the region: farmers, food businesses, and food buyers. The survey outreach was conducted primarily by the CSPDC

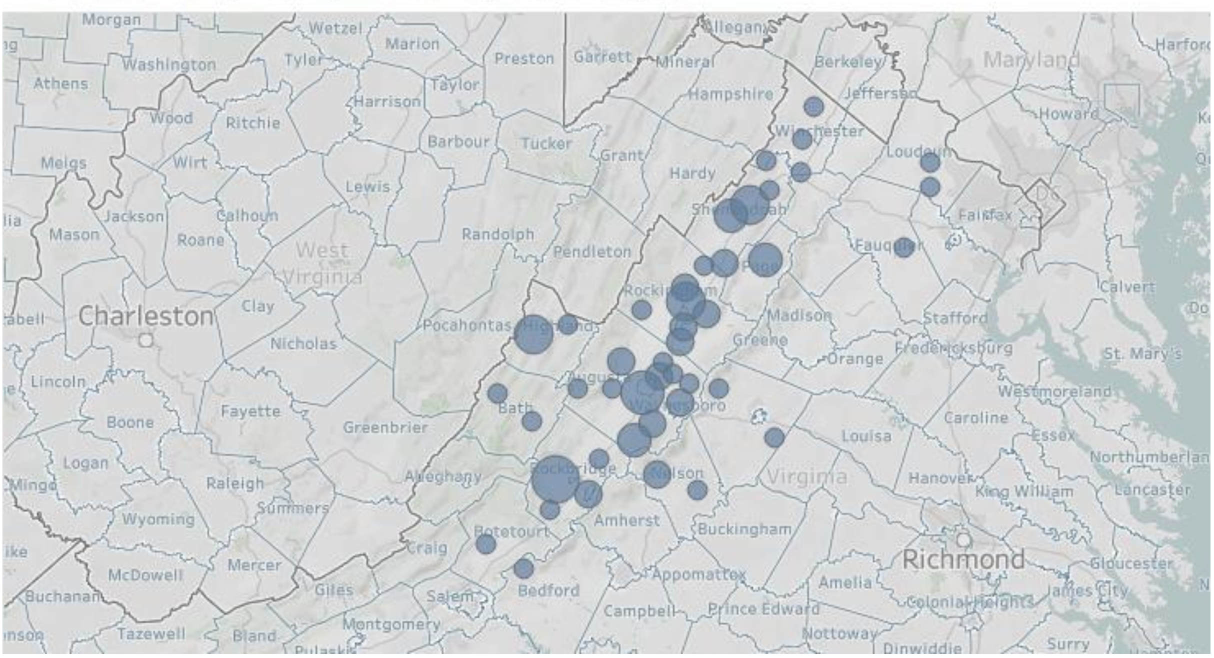
Study Team by emailing a link to the survey to a list of food system partners and stakeholders in the region (full outreach list can be found in Appendix 3).

"I utilize a commercial kitchen that's south of Richmond. I'm also interested in contract manufacturing." – Vegetable Farmer in Rockingham County

Partners were encouraged to share the link through their own listservs and on social media. The CSPDC also included a link to the survey on the project website and distributed posters and hard copy surveys to the Dayton Farmer's Market, Martin's Harness Shop, the Produce Auction, and the fairgrounds.

The number of questions in each survey group was as follows: farmer (28), buyer (18), food business (23) (see Appendix 1 for complete survey questions and responses). Prior to launch, the survey was beta tested by six testers. In all, 141 people responded to the survey. Of the 80 complete or partially complete surveys, 59 respondents were farmers, 9 respondents were food buyers, and 12 respondents were food businesses. Respondents hailed from all study area counties and cities in addition to 10 counties outside the study area. Rockbridge, Augusta, and Rockingham were the most represented counties in the survey followed by Shenandoah, Page, and Bath.

Shenandoah Valley Food System Survey responses (80)



Inside Study Area	#Resp	Outside Study Area	#Resp
Augusta	11	Albemarle	1
Bath	2	Bedford	1
Buena Vista	2	Botetourt	1
Harrisonburg	6	Charlottesville	1
Highland	5	Chesterfield	1
Page	3	Fairfax	1
Rockbridge	11	Fauquier	1
Rockingham	8	Frederick	4
Shenandoah	10	Loudoun	2
Staunton	5	Nelson	3
Waynesboro	2		

Farmers responded to the survey in highest numbers (96 total respondents, with 59 completes). Almost all the farmers reported they grow fruit or produce (57); 23 sell eggs; 3 sell dairy products; 34 are meat producers; 18 are grain or legume producers; and 23 process produce or add value to their crops.

Farmer Survey	Food Buyer Survey	Food Business Survey
96 total respondents, 59 completes	**16** total respondents, 9 completes or partial completes	**18** total respondents, 12 completes or partial completes
57 Fruit / produce	**3** Restaurants / cafés	**1** Baked goods
23 Eggs	**4** Grocery stores / retailers	**1** Catering
3 Dairy	**2** Produce Distributors	**3** Restaurants
34 Meat		**2** Stores / retailers
18 Grains / legumes		**5** Specialty packaged products
23 Processed produce / value-added (honey, packaged herbs, wine, molasses, other)		

Survey Findings

The following sections highlights top takeaways from each surveyed group, followed by a cross tabulation analysis of the survey responses. The cross tabulation is indicated by "Q2 x Q3" meaning that responses from question 2 of the survey were cross tabulated with the responses of question 3 to provide insights

Buyer Survey

Buyer Responses *In addition to food buyers, food business respondents answered questions about local purchasing and the types of products they buy. Their responses are combined in this section where appropriate (denoted by "+" in the table title).*

BUYER TAKEAWAYS

With the small dataset of buyer respondents, it is difficult to draw statistically significant conclusions about buyer interests and behavior in the Shenandoah Valley and surrounding areas. However, a few trends can be inferred from the results. Buyers are interested in buying local, whole, fresh produce; fruit; dairy and eggs; and meat. These categories represent the bulk of their annual spend, and there is potential for their existing budgets to be diverted to purchasing local versions of these items. While only two distributors responded to the survey, their reported annual food spend was much higher than the multiple restaurants and groceries who responded. Assuming distributors are purchasing much higher volumes of food and therefore spending more money, this represents a buyer category with high purchasing power in the region. While very price sensitive, a locally grown label, an organic certification, or a sustainable meat certification would enable buyers to pay more for food items. Traceability is a key interest among buyers, which aligns with providing farm-identified products. Volume and availability are needed for buyers to reliably buy local products from a food hub. Meeting volume needs, year-round product, and reliability of items emerged as key necessities for potential food hub buyers.

Buyer Location (Q2 x Q3): Nine buyers responded to the Buyer Survey: two specialty distributors, four independent or specialty groceries, and three restaurants. A buyer responded from each county and city in the study area, with the exception of Page County and with the addition of a buyer from Charlottesville, which is outside the study area.

Q2 x Q3: Buyer location by type	Distributor	Grocery	Restaurant /Cafe	Total
Augusta	0	1	0	1
Charlottesville	1	0	0	1
Highland	0	1	0	1
Rockbridge	0	0	1	1
Rockingham	1	0	0	1
Shenandoah	0	2	0	2
Staunton	0	0	1	1
Waynesboro	0	0	1	1
Total Respondents: 9	2	4	3	

Buyer Annual Spend (Q3 x Q4): "Dairy and eggs" and "whole, fresh produce" were the top two categories by annual spend, with all buyers reporting a combined spend of $1,296,400 and $1,054,000, respectively. "Meat and poultry" was next highest category, with all buyers reporting combined annual purchases of $626,300. "Processed produce" and "grains" had the lowest combined annual spends, with $14,500 and $43,300, respectively, with no contributions from distributors in either category. Distributors reported spending the highest amount on food items.

Q3 x Q4: Buyer annual spend by category and type	Distributor	Grocery	Restaurant /Cafe	Total
Whole, fresh produce	$835,000	$154,000	$65,000	$1,054,000
Processed produce		$500	$14,000	$14,500
Meat, poultry	$250,000	$16,300	$360,000	$626,300
Dairy, eggs	$1,200,000	$41,400	$55,000	$1,296,400
Grains		$22,300	$21,000	$43,300
Specialty products	$140,000	$102,000	$105,000	$347,000
Total Respondents: 9	**2**	**4**	**3**	

Price Premiums for Certifications (Q7 + Q27): Of 21 buyers, 16 (76%) are willing to pay a price premium for "locally grown" products. Nearly half of buyers are willing to pay a price premium for "organic" (9) or "non-GMO" (9) certification. "Naturally grown" was mentioned by 6 buyers. A notable write-in answer indicated a willingness to pay a premium for heirloom/heritage grains. (Note: this combines Food Buyer Survey respondents *and* Food Business Survey respondents)

Q7 + Q27: Certifications that buyers are willing to pay a premium for	Total	%
Locally grown	16	76%
GAP (Good Agricultural Practices)	4	19%
HACCP (Hazard Analysis and Critical Control Points)	4	19%
Organic	9	43%
Naturally Grown	6	29%
Certified Humane	4	19%
American Grass Fed Association	3	14%
Animal Welfare Approved	5	24%
Food Justice Certified	3	14%
Non-GMO	9	43%
None of the above	1	5%
Other (please specify)	5	24%
Total Respondents: 21		

Definitions of "Local" (Q6 + Q28): Nearly half of respondents defined "local" as "grown in Virginia" (43%). More than half consider local to be "grown in Virginia and/or adjacent states" (53%). No respondents listed "grown in Shenandoah Valley" as their definition of local.

Q6 + Q28: Local Definition	Count	%
Grown within a radius of 50 miles	3	14%
Grown within a radius of 150 miles	2	10%
Grown within a radius of 200 miles	1	5%
Grown in the Shenandoah Valley	0	0%
Grown in Virginia	9	43%
Grown in Virginia and/or adjacent states	3	14%
We do not specifically define local	3	14%
Total Respondents: 21		

Challenges in Buying Local Products (Q11 + Q31): Local food buyers listed pricing and availability as the top obstacles in purchasing local products, with 29 percent of respondents selecting each. Timing, or seasonality, of produce was also mentioned as a major obstacle by 24 percent of respondents. Volume was mentioned by 71 percent of respondents as a minor obstacle when purchasing local. Traceability requirements and packaging specifications were the top mentions as non-obstacles by 67 percent and 57 percent of respondents, respectively.

Q11 + Q31: Challenges in buying local products	Major Obstacle		Minor Obstacle		Not an obstacle	
Challenge	**Count**	**%**	**Count**	**%**	**Count**	**%**
Pricing—product is too expensive	6	29%	9	43%	5	24%
Volume—unable to fill the quantity needed	4	19%	15	71%	2	10%
Quality—product does not meet standards or is inconsistent	3	14%	8	38%	9	43%
Availability—not able to consistently provide product	6	29%	11	52%	3	14%
Timing—seasonality of produce does not align with consumer demand	5	24%	8	38%	8	38%
Diversity of product—not enough selection	3	14%	8	38%	9	43%
Professional skills of suppliers—unprofessional or poor communication	1	5%	9	43%	10	48%
Effort—too much effort required on my part to find and source local	2	10%	13	62%	6	29%
Traceability—suppliers can't meet traceability requirements	2	10%	4	19%	14	67%
Packaging/specifications—suppliers can't meet spec requirements for packaging, labeling, etc.	1	5%	7	33%	12	57%
Total Respondents: 21						
Comments: Transportation; lack of education about how to find local products						

Primary Suppliers of Local Farm Products (Q8 + Q29): Of the 21 food business and buyer respondents, 19 (90%) reported purchasing local products directly from farmers, and 38 percent reported purchasing local farm products from a specialty distributor. Broadline distributors and agricultural cooperatives were each listed by 4 respondents as a place they buy local products.

Q8 + Q29: Primary suppliers of local	**Count**	**%**
Farmers	19	90%
Broadline distributor (i.e., Sysco, US Foods, etc.)	4	19%
Specialty distributor (i.e., Cavalier, etc.)	8	38%
Food hub	5	24%
Agricultural cooperative	4	19%
Produce auctions	6	29%
Retailers (i.e., other grocery stores)	7	33%
Total Respondents: 21		

Annual Budget Spent on Shenandoah Valley-Grown Products (Q10 + Q30): Buyers reported spending an average of 30 percent of their annual food budgets on products grown in the Shenandoah Valley.

Likelihood of Buying from Food Hub (Q3 x Q12; Q32): A total of 14 food buyers indicated interest in purchasing local products from a food hub: 1 buyer (a restaurant) said they were "extremely likely" to buy from a food hub; 4 buyers said they were "very likely" or "somewhat likely" to buy from a food hub. Nine out of 11 food businesses indicated they would buy local products from a food hub.

Q3 x Q12: Type of Buyer x likely to buy from food hub	Distributor	Grocery	Restaurant	Total
Extremely likely	0	0	1	1
Very likely	1	2	0	3
Somewhat likely	0	1	0	1
Not very likely	1	1	2	4
Not at all likely	0	0	0	0
Total Respondents: 9	**2**	**4**	**3**	

Buyers Interested in Food Hub

The following survey analysis is filtered by buyers and food business owners who reported they were "extremely likely," "very likely," or "somewhat likely" to purchase from a food hub (filtered by Q12).

Desired Food Hub Products and Services (Q14): Every interested buyer said that it was "very important" for the food hub to offer local dairy products. Four out of five respondents said it was "very important" for a food hub to have a strong brand representing agriculture in this region. The same number of respondents (four out of five) also indicated "very important" for each of the following: farm-identified products; local proteins; and a consistent, year-round supply of the items they use most. All respondents said it was "very important" or "somewhat important" to deliver orders directly and to have an online ordering system. Only one buyer said it was important to have frozen local produce.

Q14: Desired food hub products and services	Very important	Somewhat important	Not very important	Not at all important
Offers local dairy products	5	0	0	0
Strong brand representing agriculture in this region	4	0	1	0
Offers farm-identified products	4	0	1	0
Offers local proteins	4	0	1	0
Offers consistent, year-round supply of the items we use most	4	1	0	0
Delivers orders directly to my facility	3	2	0	0
Has an online ordering system	3	2	0	0
Offers local grains	3	0	1	1
Ordering can easily be done through my existing ordering process / system	2	1	0	2
Offers certified organic products	2	2	1	0
Offers fresh cut local produce	2	1	1	1
Offers frozen local produce	1	0	1	3
Total Respondents: 5				

Challenges in Buying Local Products: (Q11 x Q12): Four out of five interested buyers said that "pricing" and "volume" were top obstacles when purchasing local products. Two buyers said that "quality" (product does not meet standards or is inconsistent) was a "major obstacle," and two buyers said "availability" (not able to consistently provide product) was a "major obstacle." This is consistent with challenges reported by all buyers– pricing and availability remain top challenges.

Q11 x Q12: Challenges purchasing local x likely to buy from food hub (filtered by Q12)	Major obstacle	Minor obstacle	Non-obstacle	Major + Minor total
Pricing	4	1	0	5
Volume	1	4	0	5
Quality	2	1	2	3
Availability	2	1	2	3
Timing	0	3	2	3
Product Diversity	1	1	3	2
Supplier Skills	1	2	2	3
Effort	0	3	2	3
Traceability	1	2	2	3
Packaging	1	1	3	2
Total Respondents: 5				

Pricing Requirements and Premiums (Q3 x Q15): Three out of five interested buyers responded that they are willing to pay a premium above standard pricing for most or all local products through a food hub. Two buyers responded that they are willing to pay a premium above standard pricing for well-branded, farm-identified local products.

Q3 x Q15: Type of buyer x pricing strategy (filtered by Q12)	Distributor	Grocery	Restaurant	Interested Buyers
Local product pricing should match the market pricing for standard/non-local products	0	1	0	1
We are willing to pay a premium above standard pricing for most or all local products	1	1	1	3
We are willing to pay a premium above standard pricing for well-branded, farm-identified local products	1	1	0	2
Total Respondents: 5				

Of the buyers that said pricing was an obstacle in purchasing local products, three out of five respondents said that they are willing to pay a premium above standard pricing for most or all local products, and two said they would pay a premium depending on the branding and farm-identification. This indicates that while buyers may be price sensitive, they also understand and are willing to pay more for a local product if it meets certain conditions.

Q11 x Q15: Pricing as obstacle x Pricing Strategy (filtered by q12)	Pricing		Interested Buyers
	Major	Minor	
Local product pricing should match the market pricing for standard/non local products	1	0	1
We are willing to pay a premium above standard pricing for most or all local product	2	1	3
We are willing to pay a premium above standard pricing for well-branded, farm identified local product	2	0	2
Total Respondents: 5			

Supplier Requirements and Certifications (Q5, Q7): All five interested buyers indicated that suppliers must process meat in a USDA facility, and four indicated suppliers must process seafood in an FDA-inspected facility. Requirements that suppliers must offer traceability, must pass an on-farm audit, must have an on-farm food safety plan, and must be GAP (Good Agricultural Practices) certified were indicated by three buyers each.

Q5: Supplier requirements (filtered by Q12)	Interested Buyers
Must offer traceability	3
Must pass our on-farm audit	3
Must have on-farm food safety plan	3
Must be GAP and/or GHP certified (for whole produce)	3
Must be HACCP certified (for processed produce)	2
Must be slaughtered in a USDA facility (for land-based proteins)	5
Must be processed in an FDA inspected facility (for seafood)	4
We depend on our distributors' requirements	2
Total Respondents	**5**

Of the 16 interested food businesses and buyers, 13 (81%) responded that they would pay a premium for "locally grown"; 7 (44%) would pay a premium for "organic"; 7 (44%) would pay a premium for "non-GMO"; and 6 (38%) would pay a premium for "naturally grown." Only 1 buyer indicated they wouldn't pay a premium for any certifications. Buyers also mentioned they would pay a premium for "animal welfare—approved" (5), "certified humane" (4), and "American Grass-fed Association" (3).

Q7 + Q27 xQ12 Pay Premium for Ag Products	Interested Buyers	%
Locally grown	13	81%
GAP (Good Agricultural Practices)	4	25%
HACCP (Hazard Analysis and Critical Control Points)	4	25%
Organic	7	44%
Naturally grown	6	38%
Certified humane	4	25%
American Grassfed Association	3	19%
Animal welfare—approved	5	31%
Food justice—certified	3	19%
Non-GMO	7	44%
None of the above	1	6%
Total Respondents	**16**	

Potential Product and Volumes Purchased through Hub (Q3 x Q9; Q16 x Q17; Q32): Four out of five buyers said that more than 40 percent of their annual spending goes toward whole, fresh produce. The two categories that respondents said they spend the least amount on were "processed produce (cut, frozen)" and "grains."

Q3 x Q9: Type of Buyer x Annual Spending ($) (filtered by q12)	Distributor	Grocery	Restaurant /Cafe	Interested Buyers
Whole, fresh produce	>40%	>40%	10-20%	3
Processed produce	0%	5-20%	<5%	3
Meat, poultry	30-40%	20-40%	5-10%	5
Dairy, eggs	10-20%	>40%	10-20%	5
Grains	0%	10-40%	<5%	3
Specialty products	10-20%	30-40+%	5-10%	5
Total Respondents: 5	**1**	**3**	**1**	

Sixteen buyers and food businesses estimated they'd buy a combined $1,102,560 worth of local products through a food hub. Nine out of 16 respondents indicated they would potentially buy a combined $269,150 worth of local vegetables, especially fresh greens, tomatoes, garlic, onions, pumpkins, rainbow carrots, and red potatoes. Ten buyers indicated they'd buy $238,300 worth of local fruits from a food hub, especially apples, pears, plums, berries, and peaches. Ten buyers also indicated they'd buy a combined $181,900 worth of local milk, and nine buyers reported they'd purchase a combined $167,450 worth of meat, especially local chicken and pork.

Q16 + Q32: Volume potentially bought from food hub ($)	Total	Top Products	Interested Buyers
Vegetables	$ 269,150	Fresh greens of all kinds (lettuce, arugula); tomatoes—all (heirloom); garlic and onions; pumpkins; rainbow carrots; red potatoes	9
Fruit	$ 238,300	Apples, pears, plums, berries, peaches	10
Eggs	$ 81,800	Eggs	8
Dairy	$ 181,900	Milk	10
Protein/meat	$ 167,450	Chicken; pork	9
Grains	$ 31,900	Grains	6
Legumes	$ 14,900	Dried beans	6
Value added products	$ 59,300	Honey	7
Prepared foods	$ 25,300		4
Processed fruits and vegetables (frozen, chopped, etc.)	$ 32,500	Cut / processed local vegetables and or fruit	6
Not applicable			3
Total(s)	**$ 1,102,560**		**16**

Food Business Survey

FOOD BUSINESS TAKEAWAYS

Twelve food businesses responded to the survey with varying degrees of maturity and at least one from every county in the study area. Most of the food business respondents either sell out of their own space/store, to a retailer or through their own online store. The businesses that responded were generally small, few sold through a distributor or indicated high volume sales, and four indicated they produce their products at home. There was high interest in meat skills and processing trainings and in purchasing local ingredients from a food hub. More research regarding nonfarm-based food businesses will be needed to understand the full food entrepreneur landscape in the CSV. See Commercial Kitchen Usage section for summary on kitchen usage and interest.

Food Business Responses

Type and location (Q19; Q2 x Q21): Of the 12 food businesses/entrepreneurs who responded to the food business survey, 11 were licensed and 1 was not. There were 5 specialty packaged goods companies, 3 restaurants, 1 caterer, 1 retail/store, and 1 baked goods business. Businesses included a grist mill, a bakery, a full-service caterer, a BBQ sauce company, a homemade ice cream company, multiple sausage companies, a hot sauce company, and a mustard company.

Q19: Type of business	Respondents
Operate a licensed food business	11
Operate a food business, not licensed	1
Total	**12**

There were no food business respondents from Page, Highland, or Bath counties.

Q2xQ21: County x Type of Business	Caterer	Restaurant	Specialty/ Packaged Goods	Retail/Store	Baked Goods	Respondents
Augusta	0	1	1	0	0	2
Buena Vista	0	0	0	0	1	1
Frederick	0	1	1	0	0	2
Harrisonburg	0	0	0	0	0	1
Rockbridge	1	0	1	0	0	2
Rockingham	0	1	0	0	0	1
Shenandoah	0	0	2	1	0	3
Total Respondents: 12	**1**	**3**	**5**	**1**	**1**	

Commercial Kitchen Usage (Q21 x Q23): Six out of 12 business respondents use a commercial kitchen to produce their products. Four businesses (one baked goods and three packaged goods companies) produce their products at home. One restaurant and one retail store use a contract food manufacturing facility to produce their products.

Q21 x Q23: Type of Business x Production Location	Baked Goods	Caterer	Restaurant	Retail/ Store	Specialty packaged	Total
Commercial kitchen	0	1	2	1	2	6
At home	1	0	0	0	3	4
Contract Food Manufacturing Facility	0	0	1	1	0	2
Total Respondents: 12	**1**	**1**	**3**	**2**	**5**	

Business Maturity (Q21 x Q25): Five out of 12 businesses have been generating revenue for three to five years. Four businesses have been generating revenue over ten years. The baked goods business has been generating revenue for less than a year.

Q21 x Q25: Type of Business x Years Generating Revenue	Baked Goods	Caterer	Restaurant	Retail/ Store	Specialty packaged	Total
<1 year	1	0	0	0	0	1
3-5 years	0	1	1	1	2	5
5-10 years	0	0	1	0	1	2
10+ years	0	0	1	1	2	4
Total Respondents: 12	**1**	**1**	**3**	**2**	**5**	

Markets and Sales (Q21 x Q26): Of the 12 food business respondents, 9 sell their products in their own store, restaurant, or food truck; 7 sell their products in their own e-commerce shop; 7 sell in retailers, grocery stores, or cooperatives; 5 sell at farmer's markets; 5 sell in other restaurants; 5 sell through distributors.; and 2 sell through food hubs.

Q21 x Q26: Type of Business x Selling Location	Baked Goods	Caterer	Restaurant	Retail/ Store	Specialty packaged	Total
Farmer's market	1	0	1	1	2	5
My own store, restaurant, or food truck	1	0	3	2	3	9
My farm stand or CSA	0	0	1	0	1	2
My e-commerce shop	0	1	2	0	4	7
Retailers, grocery stores, and cooperatives	0	1	1	1	4	7
Online grocers	0	0	1	0	0	1
Restaurants and cafes	0	0	1	1	3	5
Institutions (schools, hospitals)	0	0	0	0	1	1
Distributors	0	0	1	1	3	5
Food hubs	0	0	0	0	2	2
Other (please specify)	0	1	0	0	0	1
Total respondents: 12						

Meat Fabrication Needs and Training Interest (Q21 x Q33): Five out of 12 food business said that they would be interested in specialty meat preparation classes or skills training. Four respondents said they would be interested in general meat fabrication classes to learn how to do this type of breakdown, and four indicated interest in access to services that provide this type of meat processing. A write-in mentioned interest in a steam kettle and operator.

Q21 x Q33: Type of Business x Interested in Meat Processing Training	Baked Goods	Caterer	Restaurant	Retail/ Store	Specialty packaged product	Total
General meat fabrication, cutting, and processing classes or skills training	1	0	1	1	1	4
Access to services that offer general meat fabrication, cutting or processing for your animal products	0	1	0	1	0	4
Access to services that offer specialty meat preparations (smoking, curing, sausage, charcuterie, aging) for your animal products	0	1	1	1	1	4
Specialty meat preparation classes or skills training (smoking, curing, sausage, charcuterie, aging)	1	1	1	1	1	5
Other (please specify)	0	0	1	0	1	2
Total respondents: 12	**1**	**1**	**3**	**2**	**5**	

Likelihood of Buying from Food Hub (Q32): Ten food businesses indicated interest in buying ingredients for their business from a food hub (see table "Likelihood of Buying from Food Hub" in buyer response section for more).

Farmer Survey

Farmer Takeaways

The farmer respondents represented a balanced group of vegetable growers and meat producers, in addition to egg and fruit producers. There were respondents from every county and independent city in the survey area. Most farmer respondents were very small farms—over half reported growing less than four acres of vegetables and very few have certifications around production practices – although the respondent group was split in reporting sustainable practices and conventional methods. Both vegetable and meat growers listed "lack of adequate slaughter and meat processing facilities" and "availability of labor" as a top barrier to growing their business. Lack of vegetable processing capacity was also mentioned by a number of growers. Lack of flash-freeze capabilities, large-operation management skills, and production equipment received the lowest mentions as barriers.

Farmers want meat processing, meat skills training and meat value-added services – this came from both vegetable and meat producers alike. The top two challenges in entering wholesale market channels were listed as pricing and lack of access or inadequate slaughterhouse capacity. This indicates the strong need for additional meat processing and slaughter in the region and the potential for a new dedicated sales channel that understands the pricing needs and obstacles for small local growers. Almost all farmers were interested in working with or selling to a new food hub with top requirements being an online marketplace where they can post products for buyers to view/purchase; ensuring farm identification; providing distribution/pick-up services; bulk purchasing of packaging, boxes, containers; coordinating preseason crop planning; and cold or frozen storage service. These requirements are in line with standard food hub facility features and indicate a strong desire in wanting the benefits that come from shared infrastructure dedicated to bringing product from small farms to market.

There is a need for wholesale readiness training and GAP certification for these small growers to sell into a food hub, as very few are selling through distributors or to institutional markets currently. There is a desire to expand current markets and access more buyers.

Farmer Responses: Demographics

Farmer Type and Location (Q2 x Q36): Of 59 farmers who completed or partially completed the survey, 36 (61%) produce vegetables and 34 (58%) raise protein/meat—these were the two largest groups of farmers who responded. Twenty-three (39%) sell eggs, 21 (36%) grow fruit, and 17 (29%) sell value-added products. Three farmers (5%) reported being dairy farmers, and 6 (10%) reported processing their own fruits and vegetables for sale. The largest group of respondents were meat farmers from Augusta County (6). Augusta and Rockbridge counties had the highest input with 8 farmers each, followed by Rockingham with 6 farmer respondents.

Q2 x Q36: County x Farmer type	Albemarle	Augusta	Bath	Bedford	Botetourt	Buena Vista	Fairfax	Fauquier	Fredrick	Harrisonburg	Highland	Loudon	Nelson	Page	Rockbridge	Rockingham	Shenandoah	Staunton	Waynesboro	Total	%
Vegetables	0	3	1	1	1	1	1	1	0	3	3	0	2	1	5	6	2	4	1	36	61%
Fruit	0	3	0	1	0	0	0	1	0	0	2	0	1	1	5	3	1	2	1	21	36%
Eggs	0	5	1	0	1	0	1	1	1	2	2	1	0	0	4	3	0	1	0	23	39%
Dairy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	3	5%
Protein/Meat	1	6	1	0	0	0	1	1	2	2	2	2	0	2	5	2	3	3	1	34	58%
Grains	0	1	0	0	0	0	0	0	0	1	0	0	0	2	2	1	3	0	0	10	17%
Legumes	0	2	0	0	0	0	0	0	0	0	1	0	0	0	2	1	2	0	0	8	14%
Value Added Products	0	3	0	1	0	0	0	0	1	2	1	0	1	0	3	3	0	1	1	17	29%
Processed fruits and vegetables	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	1	0	6	10%
Total Respondents	**1**	**8**	**2**	**1**	**1**	**1**	**1**	**1**	**2**	**5**	**4**	**2**	**3**	**3**	**8**	**6**	**5**	**4**	**1**	**59**	

Vegetable Acreage/Size of Operation by County (Q2 x Q37): More than half of produce growers who responded reported growing under four acres of vegetables (31 of 59 total respondents). Four farmers reported growing between 5 and 9 acres of vegetables and four grow between 10 and 24 acres. Two farms reported growing between 50 and 99 acres of vegetables; they were located in Highland and Nelson counties. The only farm that grows over 100 acres of vegetables is located in Harrisonburg.

Q2:Q37: Produce acreage by county	0-4	5-9	10-24	25-49	50-99	100+	N/A	Total
Albermarle							1	1
Augusta	3		2				3	8
Bath		1					1	2
Bedford	1							1
Botetourt	1							1
Buena Vista	1							1
Fairfax	1							1
Fauquier	1							1
Frederick	2							2
Harrisonburg	2	1				1	1	5
Highland	1		1		1		1	4
Loudoun							2	2
Nelson	2				1			3
Page	2						1	3
Rockbridge	5		1				2	8
Rockingham	5	1						6
Shenandoah	2						3	5
Staunton	2	1					1	4
Waynesboro				1				1
Total Respondents	31	4	4	1	2	1	16	59

Production Practices and Certifications (Q36 x Q40): Thirty-three out of 59 farmers reported that they use organic growing methods but are not certified; 19 of those were vegetable farmers and 20 were meat farmers. Twenty-six farmers said they practice chemical free/naturally grown methods, 22 report pasture-based agriculture, and 20 say they farm conventionally. The respondent group was split in their types of growing methods, with half reporting some sort of sustainable, non-chemical practice and the other half reporting conventional methods.

Q36 x Q40: Farmer Type x Production Practices	Vegetables /Fruit	Eggs	Dairy	Protein /Meat	Grains/ Legumes	Total
Conventional	14	6	1	12	6	20
Chemical free/naturally grown	15	10	2	18	6	26
Organic methods, not certified	19	11	0	20	7	33
Pasture based	13	11	2	16	5	22
Biodynamic	1	0	0	1	0	3
Permaculture	4	5	2	11	3	12
Regenerative agriculture	6	4	1	12	4	16
Hydroponic	3	1	0	3	2	4
I would prefer not to answer	0	1	0	1	0	2
Other (please specify)	0	0	0	0	0	7
Total Respondents	39	23	3	34	14	59

The majority of farmers (43 out of 59) reported no official certifications. Eight farmers reported GAP certification, with five of them being vegetable/fruit growers, three selling eggs, and three selling meat. Three growers also reported the Virginia Grown certification or label. Two vegetable farms reported being certified organic. One vegetable and egg operation reported HACCP certification. No meat farmers reported American Grass Fed Association or animal welfare–approved certifications.

Q36 x Q42: Farmer Type x Owned Certifications	Vegetables / Fruit	Eggs	Dairy	Protein/ Meat	Grains / Legumes	Total
GAP (Good Agricultural Practices)	5	3	0	3	0	8
Virginia grown	1	2	1	2	1	3
Organic	2	0	0	0	0	2
Naturally grown	1	2	0	2	0	2
HACCP (Hazard Analysis and Critical Control Points)	1	1	0	1	0	1
Certified humane	1	0	0	0	0	1
American Grass Fed Association	0	0	0	0	0	0
Animal welfare–approved	0	0	0	0	0	0
Food Justice Certified	0	0	0	0	0	0
Non-GMO	0	0	0	0	0	0
I do not have any certifications	29	16	1	26	10	43
Other (please specify)	0	0	0	0	0	11
Total Respondents						59

Food Safety Plan (Q36 x Q41): Seventy-four percent (42 out of 57) of farmer respondents said they do not have a written food safety plan on their farm. Fifteen farmers, the majority of them vegetable growers, said they do have a food safety plan.

Q36 x Q41: Farmer Type x Written Farm Food Safety Plan	Vegetables / Fruit	Eggs	Dairy	Protein / Meat	Grains / Legumes	Total	%
Yes	13	5	0	9	3	15	26%
No	26	18	3	25	9	42	74%
Total Respondents	39	23	3	34	12	57	

Market Channels (Q36 xQ47): A total of 59 farmer respondents receive, on average, about 45 percent of their gross income from "shipping off farm direct sales" and about 41 percent from "farm stand store/on farm retail." Most growers report receiving the majority of their income from direct-to-consumer or retail sales (farm stand, farmers market, CSA, farm stand sales, shipping). On average, growers reported 38 percent of income coming from wholesalers, distributors, or food hubs, with dairies reporting almost all of their income coming from this type of sales channel. Farmers who grow legumes and grains reported high percentages of their income coming from shipping their product to direct sales. Restaurants comprised an average of 11 percent of total income, and grocery stores and institutions were only 2 percent of income.

Q36 x Q47: % Income thru market channels	Vegetables	Fruit	Eggs	Dairy	Protein /Meat	Grains	Legumes	Value- Added Products	Processed Fruits &	Other (please specify)	Average
Farm stand store / on farm retail	44%	45%	54%	52%	41%	22%	36%	38%	45%	36%	41%
Farmer's market	46%	16%	35%	5%	25%	5%	30%	34%	10%	32%	24%
CSA	27%	30%	25%	0%	19%	5%	7%	29%	13%	22%	18%
Broker	16%	20%	0%	0%	10%	20%	0%	0%	0%	14%	8%
Direct sales to farm stands	15%	9%	25%	25%	18%	0%	0%	5%	15%	1%	11%
Shipping off farm direct sales	46%	48%	56%	0%	61%	78%	67%	26%	0%	63%	45%
Grocery stores	12%	7%	1%	0%	2%	0%	0%	1%	0%	1%	2%
Restaurants	12%	11%	115	0%	10%	13%	17%	11%	15%	11%	11%
Institutions	3%	3%	1%	0%	1%	0%	0%	2%	8%	2%	2%
Wholesalers, distributors, or food hubs	31%	39%	19	90%	29%	30%	45%	32%	58%	8%	38%
Total Respondents: 59	36	21	23	3	34	10	8	16	7	18	

Barriers to Growing Business (Q36 x Q46): The top barriers to reaching their farm and production goals reported by farmers were lack of adequate slaughter and meat processing facilities (25 out of 59), availability of labor (23), knowledge of government grants (21), difficult finding buyers (20), and extreme weather events (18). Both vegetable and meat growers listed "lack of adequate slaughter and meat processing facilities" and "availability of labor" as a top barrier. Lack of processing capacity was also mentioned by 16 growers in total, nine vegetable and nine meat (some grow both). Lack of flash-freeze capabilities, large-operation management skills, and production equipment received the lowest mentions as barriers.

Q36 x Q46: Farmer Type x Barriers	Vegetables /Fruit	Eggs	Dairy	Protein /Meat	Grains /Legumes	Total Resp.
Lack of adequate slaughter and meat processing facilities	19	13	2	16	4	25
Availability to labor	13	9	0	17	5	23
Knowledge of government grants and programs	13	6	1	13	3	21
Difficulties finding and/or negotiating with buyers	15	8	1	10	3	20
Weather, i.e. extreme events such as flood, drought, tornados, or seasonal changes	10	7	1	11	4	18
Lack of processing capacity	9	5	1	9	2	16
Access to capital	10	4	0	9	2	15
Customer knowledge/awareness of local food production	9	8	2	10	2	14

Q36 x Q46: Farmer Type x Barriers	Vegetables /Fruit	Eggs	Dairy	Protein /Meat	Grains /Legumes	Total Resp.
Concerns about and labor required for food safety regulations including FSMA and GAP	9	4	1	10	2	13
Fair pricing	8	6	1	8	2	13
Knowledge of and/or equipment for post-harvest handling (grading, cooling, washing, packing)	8	4	1	7	4	13
Shipping cost/packaging	6	5	0	10	2	13
Availability/Cost of suitable land	8	2	0	6	2	12
Delivery cost/logistics	5	4	0	7	0	10
Financial management and/or recordkeeping	5	0	0	6	2	10
Lack of flash-freeze capabilities (IQF)	5	2	0	5	1	9
Management skill to run a larger operation	6	1	0	6	1	9
Production equipment (tilling, planting, weeding, harvesting)	3	1	0	6	2	8
Total Respondents	39	23	3	34	14	59

Interest in Expanding to Wholesale Markets (Q36 xQ48): Out of 59 respondents, 21 said they would be interested in expanding with not end-consumer buyers; 30 said they might be interested if barriers were removed and/or conditions met; and 8 said they would not be interested in expanding to these types of buyers.

Q36 x Q48: Farmer Type x Interested in Expanding with Not End-Consumer Buyers												
	Vegetables / Fruit		Eggs		Dairy		Protein / Meat		Grains / Legumes		Total %	
	Count	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
Yes	12	20%	9	15%	0	0%	11	19%	4	7%	21	36%
No	5	8%	3	5%	0	0%	5	8%	1	2%	8	14%
Maybe	22	37%	11	19%	3	5%	18	31%	7	12%	30	51%
Total(s)	39	66%	23	39%	3	5%	34	58%	14	24%	59	

Challenges Entering Wholesale Markets (Q36 xQ49): The top two challenges reported as barriers to entering non-direct-to-consumer markets were pricing (26 farmers) and meat processing–lack of access or inadequate slaughterhouse capacity (23 farmers). Pricing (50), accessibility to buyers (43), distribution/transportation challenges (42), and issues meeting required volumes, requirements, and labor needs (41) received the most mentions with combined major and minor obstacle sums.

Q36 x Q49: Farmer Type x Challenges in Non DTC		Vegetables / Fruit	Eggs	Dairy	Protein / Meat	Grains / Legumes	Total
Volume	Major	12	4	1	11	7	20
	Minor	15	8	0	12	2	21
	Non	12	11	2	11	3	18
Land Access	Major	7	2	0	6	1	10
	Minor	5	4	1	6	3	10
	Non	27	17	2	22	8	39
Pricing	Major	17	8	3	15	6	26
	Minor	15	11	0	13	5	24
	Non	7	4	0	6	1	9
Labor	Major	9	6	0	12	3	17
	Minor	18	11	1	13	2	24
	Non	12	6	2	9	7	18
Distribution /Transportation	Major	5	3	0	6	0	10
	Minor	20	11	2	17	9	32
	Non	14	9	1	11	3	17
Capital	Major	8	4	0	9	3	13
	Minor	15	8	0	14	4	27
	Non	16	11	3	11	5	19
Accessibility	Major	9	6	1	8	0	12
	Minor	17	10	0	17	8	31
	Non	13	7	2	9	4	16
Requirements	Major	4	5	0	7	2	9
	Minor	22	9	2	17	8	32
	Non	13	9	1	10	2	18
Meat Processing	Major	17	11	3	13	3	23
	Minor	7	3	0	5	2	10
	Non	15	9	0	16	7	26
Produce Processing	Major	6	3	0	4	3	10
	Minor	10	7	2	11	5	17
	Non	23	13	1	19	4	32
Total Respondents		39	23	3	34	14	

Farmer Responses: Interest in Food Hub

The following survey results are filtered by question Q54 to show the attributes of only farmers "interested" or "somewhat interested" in selling through a food hub.

Food Hub Interest (Q54; Q36 x Q55): Out of 59 farmers, 21 said they'd be "very interested" in working with a new food hub if it met their requirements. Almost all (95% of all farmer respondents) reported interest in a new food hub.

Q54: Food Hub interest	Percent	Count
Very Interested	36%	21
Somewhat Interested	59%	35
Not Very Interested	3%	2
Not at All Interested	2%	1
Total Respondents		59

In an unaided response as to why they were interested, farmers wrote in top reasons for working with a food hub which included market access/new customers; distribution assistance and central location; sales and marketing assistance; and that working with a food hub would free up time to do other things. Three farmers reported no interest in working with a food hub, saying that they already have the ability to market their products and that food hubs don't tend to serve larger operations.

Wholesale Readiness (Q36 x Q41 x Q42 x Q44): Of farmers interested in a new food hub, 72 percent do not have an on-farm food safety plan. Only 6 out of 53 interested farmers are already GAP certified. However, 35 out of 39 produce farmers replied "yes" or "maybe" when asked if they would consider becoming GAP certified to sell through a food hub – a certification necessary for wholesaling. Eight farmers said they would not get GAP. Almost all interested farmers sell solely direct to consumers with very little wholesale sales.

Q36 x Q44: Produce farmer x Interested in GAP Certification	Vegetables/Fruit				Respondents
	Yes	**No**	**Maybe**	**N/A**	
Total Respondents	10	8	15	6	39

Desired Food Hub Features (Q57): Top food hub features and services respondents considered important included an online marketplace where they can post products for buyers to view/purchase (45 out of 55 farmers); ensuring farm identification (40); providing pick-up service (37); bulk purchasing of packaging, boxes, containers (36); coordinating preseason crop planning (33), and cold or frozen storage service (31). An online marketplace, ensuring farm identification, and access to a kitchen to process products received the highest counts of "very important."

Q57: Food Hub Features	Very important		Somewhat important		Not very important		Not at all important		Total top 2 box
	Count	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**
Pick-up service	11	20%	26	47%	10	18%	5	9%	37
Quick cooling service to remove field heat	3	5%	17	31%	10	18%	24	44%	20
Washing, grading and/or packing services	5	9%	15	27%	16	29%	18	33%	20

Q57: Food Hub Features	Very important		Somewhat important		Not very important		Not at all important		Total top 2 box
	Count	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**
Bulk purchasing of packaging, boxes, containers	15	27%	21	38%	8	15%	11	20%	36
Cold or frozen storage service	14	25%	17	31%	10	18%	14	25%	31
Frozen processing service	8	15%	10	18%	15	27%	22	40%	18
Contract manufacturing services for my products	6	11%	14	25%	14	25%	20	36%	20
Access to a kitchen where I can process my farm products	17	31%	8	15%	14	25%	16	29%	25
Wholesale readiness training	10	18%	17	31%	13	24%	15	27%	27
Ensures farm identification	19	35%	21	38%	7	13%	8	15%	40
Low-cost, short- term financing for production expenses	3	5%	19	35%	9	16%	23	42%	22
An online marketplace where I can post my products for buyers to view/purchase	24	44%	21	38%	6	11%	4	7%	45
Coordinates preseason crop planning between buyers and producers	9	16%	24	44%	7	13%	15	27%	33
Business/Entrepreneur training	6	11%	18	33%	14	25%	15	27%	24
Other (please specify)	3	5%	0	0%	0	0%	0	0%	3
Total Respondents: 55									

Products Sold through Food Hub (Q36 x Q58 x Q59): Top vegetables listed by farmers to be sold through a food hub include lettuce and salad greens, cucumbers, tomatoes, green beans, sweet peppers, poblano peppers, beets, carrots sweet corn, potatoes, squash, kale, onions, berries, apples, plums, and pears. Meats include whole beef cattle, lamb, pork, sausage, chicken, goat, turkey, ostrich, ducks, and geese. Grains and legumes include wheat, dry beans, and sunflower seeds. Value-added products include dried herbs, ginger, turmeric, jams, salsa, flowers, honey, wine, syrups, vinegars, and ciders.

Interested farmers indicated they'd sell anywhere from 38 percent to more than half of their volume through a food hub. Legume farmers said they'd sell, on average, 61 percent of their product through a hub.

Q36 x Q58: % of Potential Production Interested in Selling Through Food Hub (average) (filtered by q54)	Avg % of volume	Respondents
Vegetables (lbs.)	38%	36
Fruit (lbs.)	42%	21
Eggs (doz.)	51%	23
Dairy—milk, cheese, other (gals., lbs., etc.)	50%	3
Protein/Meat—beef, pork, lamb, poultry (lbs.)	46%	32
Grains (bushels, lbs., tons)	56%	8
Legumes (lbs)	61%	6
Value-added products (cases, jars, pallets, etc.)	42%	16
Processed fruits and vegetables (frozen, chopped, etc.)(lbs.)	38%	6
Total Respondents		**56**

Access to Infrastructure (Q36 x Q61): The highest response for each type of infrastructure was "I don't have, don't need." For a commercial kitchen, 25 out of 53 respondents replied "I don't have but need"; 27 out of 53 said the same for slaughter facilities, and 31 out of 53 for meat processing equipment.

Q36 x Q61: Farmer Type x Access/Willing to Share Infrastructure (filtered by q54)		Vegetables / Fruit	Eggs	Dairy	Protein / Meat	Grains / Legumes	Total
Certified Kitchen	I have and would share for a fee	1	1	0	2	2	2
	I have access but not to share	2	1	0	1	0	2
	I don't have but need	13	4	1	14	5	24
	I don't have, don't need	18	15	2	15	5	25
Slaughter Facilities	I have and would share for a fee	0	0	0	0	0	0
	I have access but not to share	3	4	0	4	0	4
	I don't have but need	14	9	2	12	5	22
	I don't have, don't need	17	8	1	16	7	27
Meat Processing Equipment	I have and would share for a fee	2	1	0	1	0	2
	I have access but not to share	1	2	0	3	1	3
	I don't have but need	10	7	1	10	4	17
	I don't have, don't need	21	11	2	18	7	31
Respondents		**34**	**21**	**3**	**32**	**12**	**53**

Farmer Responses: Meat Processing and Skills Training

Desired Meat Fabrication Services (Q36 x Q50 and Q51): Out of 59 farmer respondents, 31 said that they would be interested in "meat fabrication–large animal breakdown (farm: cow, chicken, goat, lamb)"; 26 respondents said they would be interested in "specialty meat cutting–retail/wholesale cuts"; and 24 said they'd be interested in smoking/curing services. Overall, there was high interest among all farmer types in meat fabrication and specialty processing services and low interest in seasonal wild game fabrication, with only 10 percent of farmers saying they were interested. Additionally, 42 percent of farmers were interested in services that provided meat fabrication and processing and 36 percent were interested in services that provided specialty meat preparations (adding value to meat products).

Q36 x Q50: Farmer Type x Meat Facility Interest	Vegetables / Fruit		Eggs		Dairy		Protein / Meat		Grains / Legumes		Total	
	Count	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
Meat fabrication—large animal breakdown	20	34%	15	25%	2	3%	18	31%	5	8%	31	53%
Meat fabrication—seasonal wild game breakdown	3	5%	2	3%	0	0%	3	5%	0	0%	6	10%
Specialty meat cutting—resale/wholesale cuts	18	31%	10	17%	2	3%	13	22%	5	8%	26	44%
Smoking/Curing	16	27%	10	17%	2	3%	14	24%	5	8%	24	41%
Sausage Making and/or Charcuterie	13	22%	9	15%	2	3%	11	19%	4	7%	19	32%
Aging (Dry/Wet)	10	17%	7	12%	1	2%	9	15%	2	3%	16	27%
N/A	11	19%	6	10%	1	2%	12	20%	6	10%	22	37%

Interest in Meat Fabrication/Processing Skills Training (Q36 x Q51): Across all types of farmers, 24 percent reported interest in general meat fabrication classes or training, and even more (31%) had interest in specialty processing classes that included smoking, curing, sausage making, and charcuterie. Less than half of all farmer respondents (46%) were not interested in any meat services or said it didn't apply to them.

Q36: Farmer Type x Q51: Meat Processing Skills Interest	Vegetables /Fruit		Eggs		Dairy		Protein /Meat		Grains /Legumes		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
General meat fabrication, cutting, and processing classes or skills training	8	14%	5	8%	1	2%	8	14%	2	3%	14	24%
Access to services that offer general meat fabrication, cutting or processing for your animal products	19	32%	10	17%	2	3%	13	22%	4	7%	25	42%
Access to services that offer specialty meat preparations (smoking, curing, sausage, charcuterie, aging) for your animal products	15	25%	9	15%	2	3%	12	20%	5	8%	21	36%
Specialty meat preparation classes or skills training (smoking, curing, sausage, charcuterie, aging)	12	20%	5	8%	1	2%	8	14%	3	5%	18	31%
N/A	14	24%	10	17%	1	2%	17	29%	6	10%	27	46%
Total	39	66%	23	39%	3	5%	34	58%	14	24%		
Total Respondents											**59**	

Commercial Kitchen Responses

The following survey results include farmers and food business responses.

Commercial Kitchen Takeaways

About half of the farmer respondents and half of the food business respondents were interested in utilizing a commercial kitchen to process goods or add value to raw farm products. Access to the kitchen during special hours, having desired equipment and cold/freezer storage were key features requested by the respondents. Additionally, contract manufacturing services and packaging equipment were called out. The top activities occurring the kitchen would be canning/preserving and cutting/processing produce. The busiest time in the kitchen, according to respondents, would be between May-November; however, responses indicated a year-round need for kitchen use and access. The ability to process meat in the kitchen was also a highlighted need. The potential for contract services – processing products for a user according to their specifications – represents an additional service called out by respondents.

Commercial Kitchen Features and Usage

Commercial Kitchen Interest (Q1 x Q2 Q64; Q21 x Q23): A total of 33 farmers and food business respondents indicated interest utilizing a new commercial kitchen. Of the 56 farmer respondents, 15 said they would be "very interested" and 21 said were "not at all interested." Four food businesses said they would be interested. Farmers in Highland and Rockbridge counties indicated the least interest.

Q1 x Q2 x Q64: Primary Business x County x Interest in Commercial Kitchen

	Farmer/Producer				Food Business Operator				Respond-ents
	Very	Some-what	Not very	Not at all	Very	Some-what	Not very	Not at all	
Albermarle	0	0	0	1	0	0	0	0	1
Augusta	4	2	0	2	1	0	1	0	10
Bath	0	1	0	1	0	0	0	0	2
Bedford	1	0	0	0	0	0	0	0	1
Botetourt	0	0	0	1	0	0	0	0	1
Buena Vista	0	1	0	0	1	0	0	0	2
Fauquier	0	0	0	1	0	0	0	0	1
Frederick	1	0	1	0	1	0	0	1	4
Harrisonburg	1	0	2	1	0	0	1	0	5
Highland	0	0	0	4	0	0	0	0	4
Loudoun	1	0	0	1	0	0	0	0	2
Nelson	1	0	0	2	0	0	0	0	3
Page	0	2	0	1	0	0	0	0	3
Rockbridge	2	1	1	4	0	0	1	1	10
Rockingham	1	4	1	0	0	0	0	1	7
Shenandoah	1	1	1	1	1	0	1	0	6
Staunton	2	1	0	1	0	0	0	0	4
Waynesboro	0	1	0	0	0	0	0	0	1
TOTAL	**15**	**14**	**6**	**21**	**4**	**0**	**4**	**3**	**67**

Two food business owners who currently produce their goods at home said they would be interested in producing in a new kitchen.

Kitchen / Food Lab

Features of Commercial Kitchen (Q1 x Q65): Out of 33 interested respondents, 20 (16 farmer/producers and 4 food businesses) said they require specialized equipment for kitchen production. "Special access hours," "specialized equipment for food manufacturing," and "access to co-packing service that processes products according to my specifications" were selected by 16 respondents each, while 15 respondents selected "freezer storage," 13 selected "cold storage," and 11 respondents said they would like access to a food lab/test kitchen. A write-in response also mentioned a need for streamline packaging and labeling equipment.

Q1 x Q65: Primary Business x Kitchen Requirements (filtered by q64)	Farmer/ Producer	Food Business Operator	Total
Special access hours (i.e. 24-hour access, night access, daytime only, weekend access)	12	4	16
Specialized equipment—kitchen production	16	4	20
Specialized equipment—food manufacturing	13	3	16
Cold storage square footage or pallet space	11	2	13
Freezer storage square footage or pallet space	13	2	15
Dry storage square footage or pallet space	7	3	10
Access to a loading dock	3	3	6
Proximity to public transportation	2	1	3
Proximity to highways	8	2	10
Allergen free area	1	2	3
Access to a food lab/testing kitchen	8	3	11
An area to meet with customers for tastings or demos	8	2	10
Private production space that only I can access	4	1	5
Access to co-packing service that processes according to my specifications	14	2	16
N/A	1	0	1
Other (please describe)	1	0	1
Total Respondents	29	4	33

Techniques and Equipment (Q1 x Q66; Q67): Out of 33 respondents, 12 (10 farmer/producers and 2 businesses) said they practice "canning or preserving in jars"; 11 said they practice "cutting, slicing, shredding of fresh produce"; and 7 businesses do bottling and 7 do specialty cooking.

Q1 x Q66: Primary Business x What Techniques You Apply (filtered by q64)	Farmer/Producer	Food Business Operator	Total
Assembly of dry ingredients	2	2	4
Bottling	3	4	7
Canning or preserving in jars	10	2	12
Cutting, slicing, shredding of fresh produce	10	1	11
Drying, dehydration	6	1	7
Fermenting	5	0	5
Freezing—blast chiller	3	0	3
Juicing	5	1	6
Milling	0	0	0
Grinding	5	0	5
Specialty cooking (e.g. large scale braising, roasting, steaming)	5	2	7
Baking	4	1	5
Smoking	2	1	3
N/A	1	0	1
Other (please specify)	2	1	3
Total Respondents	29	4	33

Out of 33, 14 respondents replied "not applicable" when asked about their need for automated packaging equipment, and 7 respondents (6 farmer/producers and 1 business) said they need or would be interested in seamer/shrinker machinery.

Q1 x Q67: Primary Business x Need Access to Automated Packaging Equipment (filtered by q64)	Farmer/Producer	Food Business Operator	Total
VFFS	2	1	3
Bottling	2	3	5
Augur line	1	0	1
Form, Fill and/or Seal machinery (FFS)	4	0	4
Seamer/Shrinker machinery	6	1	7
Pack, Bale and/or Palletize machinery	3	0	3
Check weigher machinery	5	1	6
N/A	13	1	14
Other (please specify)	3	1	4
Total Respondents	**29**	**4**	**33**

Usage

Out of 29 farmer/food business respondents, they collectively reported to have about 47 people working in a kitchen during the months of September and October and about 45 people during the months of July and August. The busiest time of the year would be May through November, with anywhere from 23 to 29 users renting the kitchen throughout each month and more than 40 people using the kitchen throughout the month.

Q68 x Q70: Months in Production x How Many People in the Kitchen (filtered by q64)	Just me	2 People	3 People	7 People	People in kitchen per Month	Kitchen Users per month
January	3	4	2	1	24	10
February	4	4	2	1	25	11
March	7	6	2	1	32	16
April	10	6	2	1	35	19
May	13	7	2	1	40	23
June	17	7	2	1	44	27
July	18	7	2	1	45	28
August	18	7	2	1	45	28
September	18	8	2	1	47	29
October	18	8	2	1	47	29
November	13	7	2	1	40	23
December	5	4	2	1	26	12
Average					**37**	**21**

Location of Facility

Willingness to Travel (Q54 x Q62; Q74): Out of 57 total respondents, 21 said they would travel up to 50 miles to access a food hub (15) or a commercial kitchen (6). Out of 56 farmers interested in working with a food hub, 15 said they would be willing to travel up to 50 miles to a hub, while 12 said they would only travel 20 miles to a food hub. Of the 28 business respondents interested in working with a commercial kitchen, 6 said they would travel 30 miles, and 6 also said they would travel up to 50 miles. Respondents were less willing to travel farther for a commercial kitchen than for a food hub.

Q54a,b x Q62; Q74: Distance willing to travel to facility	Food Hub	Commercial Kitchen	Total
Less than 20	0	3	3
20 miles	12	5	7
25 miles	4	2	6
30 miles	11	6	17
35 miles	1	0	1
40 miles	4	3	7
45 miles	0	3	3
50 miles	15	6	21
55 miles	1	0	1
60 miles	3	0	3
70 miles	1	0	1
75 miles	1	0	1
N/A	3	0	3
Total Respondents	56	28	57

Primary and Secondary Research Summary for Facility Features

The following section summarizes key insights and trends regarding desired facility features from both primary and secondary research findings.

Food Hub

A food hub would meet the needs of both buyers and farmers in regard to aggregation, distribution, marketing, sales, and packaging needs. Ninety-four percent of farmers surveyed said they were interested in working with a new food hub. In addition, 17 buyers reported that availability and the inconsistency of supply of local products was an obstacle in purchasing local. The closest food hub is located in Charlottesville, 30 miles from Waynesboro.

Distribution—There are only a few produce distributors that serve/work with small farms in the CSV region. Results from the survey indicate 67 percent of farmers view pick-up service as important, and 71 percent find the cost/complex logistics of distribution to be a challenge. Furthermore, interviewees mentioned distribution, delivery assistance, and back hauling as necessary to support growers in the region. Providing distribution and trucking services would meet the needs of growers in the region.

Marketing/Packaging—There is no coordinated marketing identification for items grown or produced in the CSV region. According to the surveys, 72 percent of farmers said it was important for a food hub to ensure farm identification, and 77 percent of farm and food businesses said branding/marketing support would be a valuable service.

"Small farms need to start thinking bigger and working together. They can drown in inefficiency. As many small farms that have popped up, I've seen twice as many fall down." – Meat Farmer in Augusta County

"Shenandoah should be a culinary destination and have a unique identity. There's potential for the younger generation to think outside of the box. Develop Shenandoah Valley marketing and make the community unique and differentiated." – Food Business Owner in Staunton

"There's great potential for a 'pearls on a string' concept—centralizing a decentralized food system is hard." —Stake-holder in Augusta

"Scale up with partner farms and provide local products to a local hub." – Meat Farmer in Highland County

Co-Packing/Contract Manufacturing

Many food businesses travel outside of the region to utilize services at Virginia Food Works in Prince Edward County. The only co-packing and packing for food businesses in the CSV is Friendship Industries in Harrisonburg. Friendship Industries also has the ability to meet requirements for refrigerated packaging and temporary storage before shipment. According to the survey, 48 percent of farmers and food businesses said they'd like access to a co-packing service that processes their products.

Commercial Kitchen

There are two commercial kitchens in the CSV region. The largest of the two, the Highland Center in Monterey, is not as accessible for some farmers due to its location; 49 percent of farmers and food business owners said they would be interested in utilizing a shared commercial kitchen. The addition of a certified, USDA-inspected kitchen in the CSV has the potential to attract users from all over Virginia, not solely the CSV, as it would fill a gap in existing local food infrastructure.

Incubator/Food Lab

The Highland Center is the only facility that offers business incubation services dedicated to food businesses. Staunton Creative Community Fund also provides business support and funding to start-ups, but no specific programing for food entrepreneurs was identified. Results from the surveys indicate that 74 percent of respondents said they'd like recipe testing and support, and 77 percent said they'd like to be a part of a food business community. Business incubation services dedicated to building a food business from product development, recipe testing, and business planning to sales and launch are essential to support the success of shared kitchen users.

Storage: Dry, Cold, Frozen

There is a lack of cold and frozen storage for small to midsize producers in the region. No shared storage for small producers was identified. According to survey responses from farmers, 56 percent said cold or frozen storage was an important feature for a food hub, and 34 percent said that they don't have access to cold storage but that they need it. Those interested in utilizing a commercial kitchen also required cold, dry, and freezer storage.

Training/Technical Assistance/Classroom Space

Virginia Cooperative Extension is the main provider for agriculture-related education. James Madison University and Blue Ridge Community College are accredited by the Virginia Small Business Development Center Shenandoah Valley as key providers for education and support for entrepreneurs and small businesses. From the surveys, 69 percent of all respondents said they'd like access to general business strategy support and business plan development.

The CSV region lacks sufficient in-person food handling and ServSafe trainings; 88 percent of survey respondents said they'd like assistance or support in navigating food safety requirements. Furthermore, 44 percent of farmers said they'd like the food hub to offer business entrepreneur training, and 49 percent said that wholesale readiness training was an important feature of the food hub. Very few survey respondents were GAP certified, a necessary requirement to sell wholesale. Further support for in-person trainings is illustrated through the high number of respondents (74 percent) who said they'd be interested in utilizing a classroom for food- and ag-related activities, seminars, and trainings.

Meat Processing

Meat processing and fabrication is a needed service in the region. Results from the surveys show 43 percent of farmers reported inadequate meat processing and slaughterhouse capacity, and 53 percent of farmers reported interest in utilizing a facility for meat fabrication. Allegheny Meats (Monterey) was purchased in 2020 but was not yet up and running at the time of writing (April, 2021). There are three existing meat processors/slaughter facilities in the region with capacity to service small meat producers—Donald's Meat Processing (Lexington), Gore's Processing (Stephens City), and True and Essential Meats (Harrisonburg). Of these, only two are USDA-inspected and all are booking into 2021–22 for slaughter and process dates.

Slaughter Services

There is a strong need for additional slaughter capacity in the region. However, the regulatory environment and other barriers to start a new slaughterhouse are prohibitive—and interviews and discussions with the CSPDC indicated that the appetite to build a stand-alone slaughterhouse was limited. The ability to add slaughter to a mixed-used facility such as a food hub or commercial kitchen is complicated, as the location will greatly be impacted by this addition (zoning, noise pollution, regulations, inspections, neighbors, etc.). The need for strong partnerships with existing slaughter facilities and processors will aid in taking the processing onus off of the few existing facilities in order to create more general capacity in the region, but it will not solve the problem entirely.

IV. Business Analysis and Operating Model

During the business analysis stage of the study, NVA worked with the CSPDC to develop a chosen operating model, identify case studies to support the model, provide site selection criteria, perform preliminary break-even and capacity modeling, and finally, develop and submit the building program that lays the groundwork for future architectural design.

Three operating model options were put forward to the CSPDC team for consideration on November 24, 2020:

- Option A: The Wagon Wheel (small)
- Option B: The Shenandoah Small Farm Enterprise Center (large)
- Option C: The Shenandoah Specialty Meats Hub (medium)

The ultimate decision by the CSPDC and their study team was a hybrid of option A and option C. The full descriptions of the models and their supporting case studies can be found in Appendixes 6, 7, and 9.

Summary of Operating Model Options: 3 Approaches			
Component	Option A: The Wagon Wheel *Hub + Spoke (Small)*	Option B: The Shenandoah Small Farm Hub and Enterprise Center *Centralized (Large)*	Option C: The Shenandoah Specialty Meats Hub *Specialty (Medium)*
Meat Aggregation	✓ Onsite + Remote	✓ Onsite	✓ Onsite
Produce Aggregation	✓ Onsite + Remote	✓ Onsite	✓ Brokerage Only
Branding / Marketing	✓	✓	✓
Virtual Hub/Online Marketplace	✓	✓	✓
Dry Storage	✓ Onsite + Remote	✓ Onsite	✓ Onsite
Cold Storage	✓ Onsite + Remote	✓ Onsite	✓ Onsite, Hanging Room
Frozen Storage	✓ Onsite + Remote	✓ Onsite	✓ Onsite
Commercial Production Floor—Meat	✓	✓	✓
Commercial Production Floor—All Other		✓	
Shared Kitchen—Meat	✓	✓	✓
Shared Kitchen—All Other	✓	✓	✓
Flash Freezing Line			
Training / Classrooms	✓ Multi-purpose	✓	✓
Event / Community / Entrepreneurial Space		✓	✓
Retail	✓ No Service	✓ Full Service	✓ Limited Service
Off-Premises (“Spoke” Network)	✓	✓	✓
Facility Admin Office	✓	✓	✓
Reception Area	✓	✓	✓
Food Truck Services	✓ Parking Only	✓ Parking + Services	✓ Parking

Recommended Operating Model

The CSPDC and their study team chose a hybrid model of options A and C. This model will be located in either Rockingham County or Augusta County, near one of the independent cities of Waynesboro, Staunton, or Harrisonburg. The site is still undetermined. The mission of the facility will be to build resiliency and sustain small, local farms and food businesses in the Shenandoah Valley. An overview of the chosen operating model components and the supporting research by feature can be found in Appendix 7.

Overview of the Shenandoah Specialty Meat and Produce Hub

At this stage, a recommended model, **The Shenandoah Specialty Meat and Produce Hub (the Hub)** has been selected by the assembled CSPDC stakeholders and was presented to key community stakeholders (i.e., farmers, buyers, and business owners) in April 2021 to inform them about the operating model and garner their support, interest, and excitement. The CSPDC's timeline for the project is still under development.

The Hub will be a single building with a dual focus on supporting meat aggregation and processing for the region and serving as a produce hub and distribution center. A commercial kitchen will support both functions. The interplay between these two components will be thoughtfully designed to promote and service local farmers, small businesses, and entrepreneurs.

The Hub will support the branding, marketing, and sale of high-quality agricultural products through food hub aggregation and online sales to wholesale and retail buyers. Sales will occur through an online marketplace where individuals and wholesale buyers can see what is available and make purchases. This concept will rely heavily on the support and engagement of a base of entrepreneurially minded community members and farmers who view the center as a destination for learning and growth opportunities for their businesses. Additionally, the facility will focus on the expansion and scale of meat production and distribution within the Central Shenandoah Valley region. Key aggregation, production, distribution marketing, and warehousing services will be available to support all business stages.

The Hub will have a special emphasis on supporting meat producers in the region by filling gaps in meat fabrication, processing, labor/training, and storage needs. The Hub has the opportunity to bring brand recognition to the region through the sale of Shenandoah Specialty Meats—branded products and value-added meat items sourced from farmers within the region raising beef, pork, chicken, turkey, lamb, geese, and other unique meats. This model supports the scale-up of the needed butchery workforce and meat education across the region with in-house skills training programs on meat fabrication, slaughter, and specialty processing for farmers. On the direct-to-consumer side, Shenandoah Specialty Meats may provide a subscription delivery service that specializes in locally produced premium sustainable meats at an affordable price with the potential to gain national brand recognition.

The development will be staged and scalable. Sales will initially focus on both direct-to-consumer and wholesale customers with the intention to transition to primarily wholesale buyers as more suppliers become wholesale ready. The Hub will support multiple configurations (flexibility) for kitchen and processing setups, to attract both targeted initial tenants and to fill the space with future tenants and programming.

Revenue-Generating Spaces in the Hub Facility

- Dedicated warehouse space for the storage and aggregation needs of a **food hub**, which will provide aggregation and distribution of local produce and meat. This space will include storage, processing space, and office space for purchasing, sales, marketing, and branding support for the agricultural products and farmers utilizing the services. Note the office space is not revenue generating and is for administration.
- An **online marketplace** to support the sale of produce and food hub items (to both wholesale and direct-to-consumer audiences), as well as consumer packaged goods (CPG products) produced in the commercial kitchen.
- A certified kitchen space to act as a **commercial kitchen** with equipment for use by all users of the Hub: entrepreneurs and small businesses (such as canning, bottling, baking); meat processing, packaging, and value-added processing at scale; and vegetable processing, packaging, and value-added processing at scale. This state-of-the-art commercial kitchen facility with production stations will be available for rent hourly and offer various types of storage that will be available for rent monthly.
- **Dry, cold, and frozen storage** options that support the Hub's needs and are also available for monthly rental (as noted above) by local community members and facility users such as farmers and food entrepreneurs.
- A commercial, temperature-controlled **production room for large animal fabrication and processing**. This space, built to USDA specifications, will support the multi-stage fabrication and processing of large animals (cow, pig, sheep, goat) to prepare them into saleable cuts or provide meat for supporting services for value-add products.
- A modern **multi-purpose space** capable of hosting up to 50 people for meetings, small gatherings, educational/training/classroom uses, and related needs.
- A commercial **loading dock** (two bays) for small/medium freight (semi), truck, and box-truck access to the facility. At least one bay to accommodate a semi. There would be potential to generate revenue through a cross-docking fee.

Revenue-Generating Services Supported by the Hub Facility

In addition to the specific spaces outlined in the previous section, the Hub will also support services or programming for the users of the facility and local farmers, small businesses, entrepreneurs, and community members.

- **Meat fabrication and processing***—*service provided for a fee*
- **Specialty meat services**—curing, charcuterie, sausage—*service provided for a fee*
- **Business incubation***—entrepreneurial training and business skills—*service provided for a fee or included in kitchen rental*
- **Knowledge and service hub for agricultural community***—clearing house for providing technical assistance and existing service identification for Hub users –*classes/lectures provided for a fee or offered on a sliding scale/free to farmers*

**service may rely on/be provided by third party partners.*

V. Building Program and Facility Layout

The building program defines and describes each individual space in the facility, the activities that will occur there, and its approximate square footage. It also details who the users of the space will be and the physical and adjacency requirements. The building program is the foundation for future architectural design and direction. The following building program has been designed according to the operating model detailed in the previous section.

Building Space Components

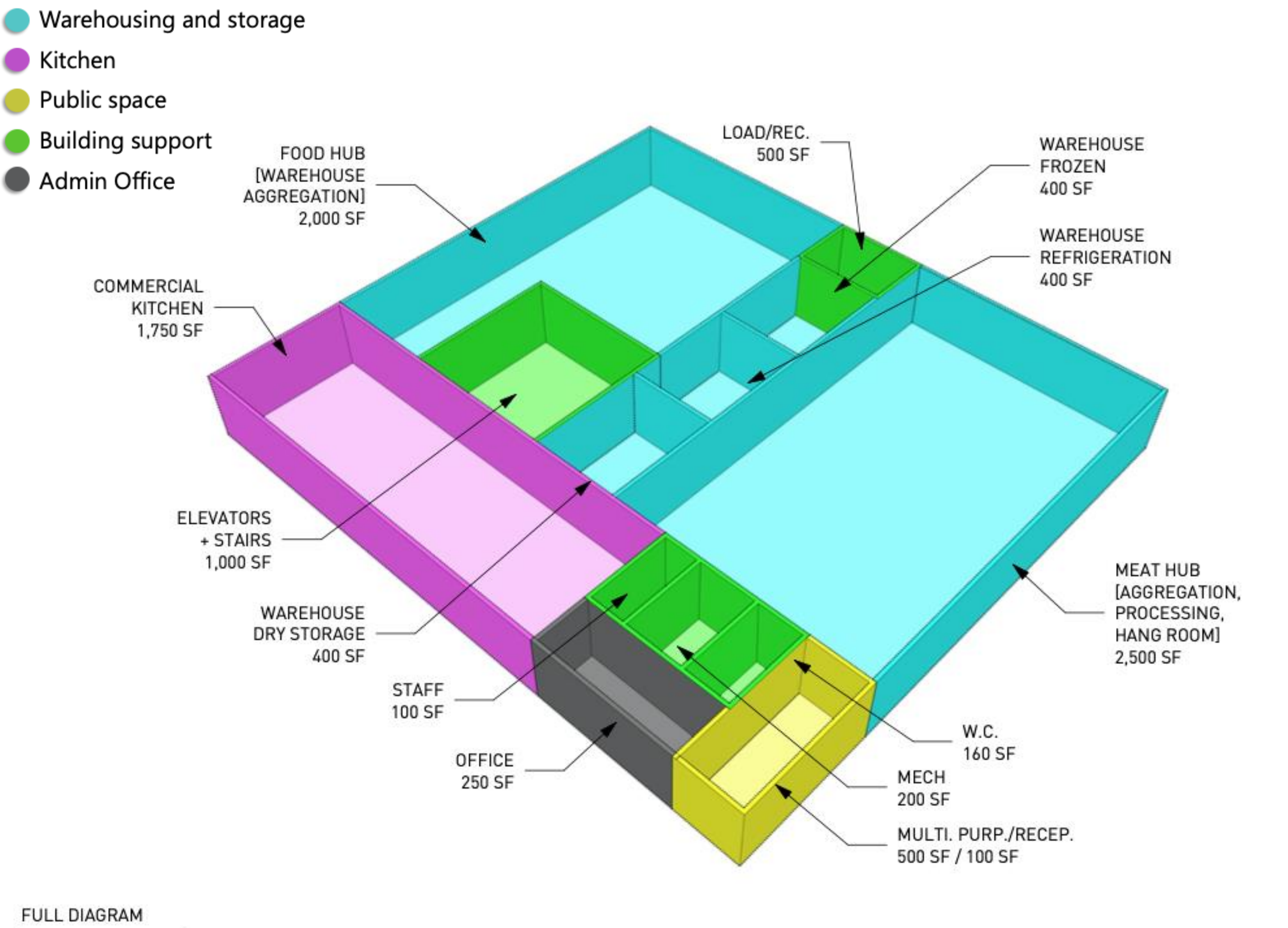
The Hub will be an approximately 10,000 square foot space allocated into the following components. See Appendix 8 for a full list of equipment recommended for the program and mentioned in the following sections.

Table 7: Hub Space Components

Component / Programming	Approx. Sq. Ft.	Potential Users
Food Hub (Warehouse—Aggregation)	2,000	TBD (Operator) Local Farmers
Food Hub (Warehouse—Loading/Receiving)	500	
Warehouse Storage—Dry, Refrigerated, Frozen **Allocated for both in-process and finished products to support FSMA and state regulations*	1,200	Facility Users
Commercial Kitchen	1,750	Facility Users
Meat Hub (Aggregation, Fabrication, Hang Room, Processing Area)	2,500	TBD (Operator) Local Farmers
Online Marketplace	0	TBD (Operator)
Multi-Purpose Space/Classroom	500	TBD (Operator) Other Facility Users
Office Space	250	TBD (Operator) Facility Users/Tenants
Building Reception	100	Facility Users Visitors
Additional Building Space Needs		
Mechanical Room	200	
Toilets	160	
Staff Room	100	
Elevator & Stairs (Access Areas)	1,000	
TOTAL SQUARE FOOTAGE	**10,260**	

Note: Users are considered small food businesses, entrepreneurs, farmers, and other in-region community members.

Bubble Diagram of Shenandoah Specialty Meat and Produce Hub

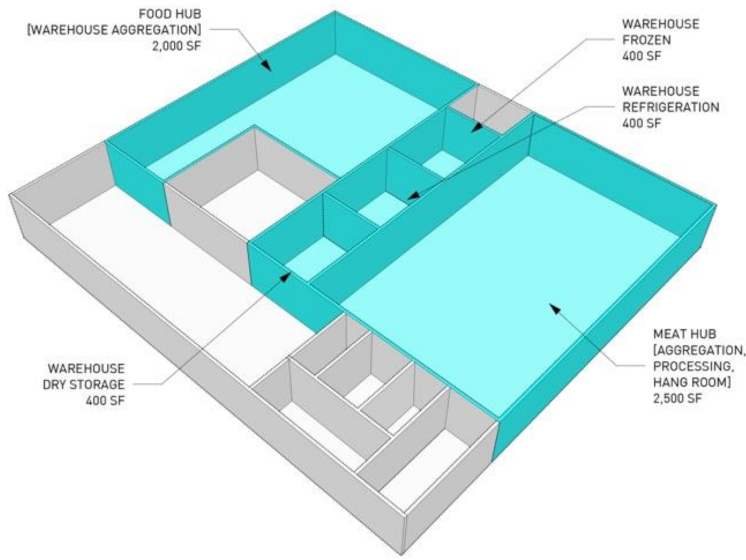


NON-SITE SPECIFIC BUBBLE DIAGRAM FOR SHENANDOAH AG CENTER TOTAL AREA = 10,260 SF

Note 1: *These concept renderings are being provided to illustrate the space concept and are not fully detailed for access, compliance, or full-scale usage at this time.*

Note 2: *Layout and full-compliance access considerations, such as hallways, stairs, elevator shaft area, doorways, lobbies, reception portals, and vestibules, and common restroom facilities have been considered in the general and total-square-footage allocations for the build-out.*

Food Hub—Warehouse and Aggregation Space



The food hub warehouse and aggregation space will be designed, outfitted, and built to support the development needs of a regional food hub in terms of aggregation, processing, and distribution of local food products. The space will be where local produce (fruits, vegetables, etc.) and products can be aggregated from local farmers (or dropped off by local farmers), processed, and stored or distributed. The space also allows for minimal processing of crops for value-added aggregation and production. This area's proximity to the commercial kitchen space increases the opportunities for farmers who want to diversify their offerings with various levels of more advanced production (pickling, light canning, value-added baked goods, etc.).

- Potential Tenant: TBD
- Estimated Square Footage Usage: 2,000 square feet plus access to shared storage spaces (approx. 1,200 sq. ft.) and access to loading/receiving (approx. 500 sq. ft.)
- Income Source(s): Rent
- Equipment and Space Considerations:
    - Access to shared receiving/loading areas and access for multiple truck types for drop-offs and delivery access (approx. 500 sq. ft.)
    - Aggregation area for sorting, picking, packing, and processing of products (limited electric and wash facilities to code as required by tenant)
    - Shared storage for dry, refrigerated, and frozen goods in normal shelving and palletized formats
    - Access to the commercial kitchen space
    - Utilities, drains, sinks, etc. (will use best practices)
    - Dedicated truck and van parking (overnight) for Hub vehicles
    - Dedicated food safe sort, light processing, and packing spaces (tables, water access, electrical inputs)

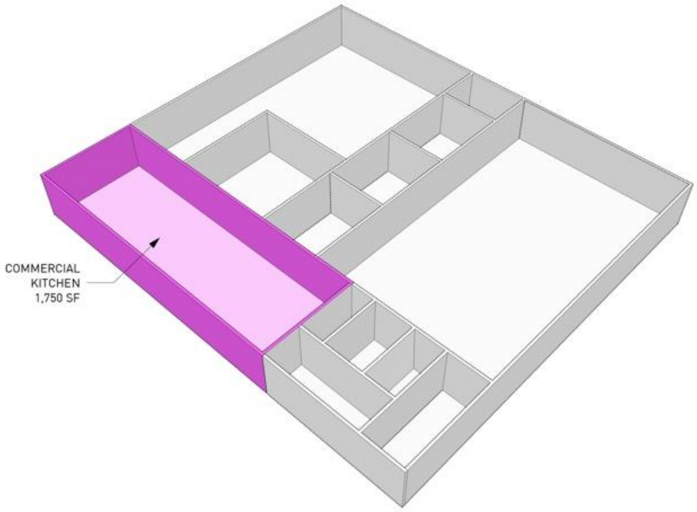
Food Hub—Loading/Receiving Dock

The Hub will also support a loading/receiving area complete with a two-bay loading dock designed to support access for the core operator, as well as tenants, partner organizations, building users, and other potential customers. The loading dock has been sized and designed to accommodate two trucks making deliveries simultaneously to ensure flow for the facility. The loading dock will also integrate one low and one high bay to accommodate deliveries or pick-ups via all truck sizes: standard vehicle height, box truck load height, freight height (semi), and related vehicles. This will be a shared space with priority given to the main aggregation operator and the meat fabrication operator. This is a non-revenue generating space.

- Potential User(s): Hub operator and facility users
- Estimated Square Footage Usage: 500 square feet
- Income Source(s): N/A
- Equipment and Space Considerations:
    - Two bays for vehicle access to loading/un-loading for facility users and tenants
    - Access to limited on-site parking during deliveries

Commercial Kitchen

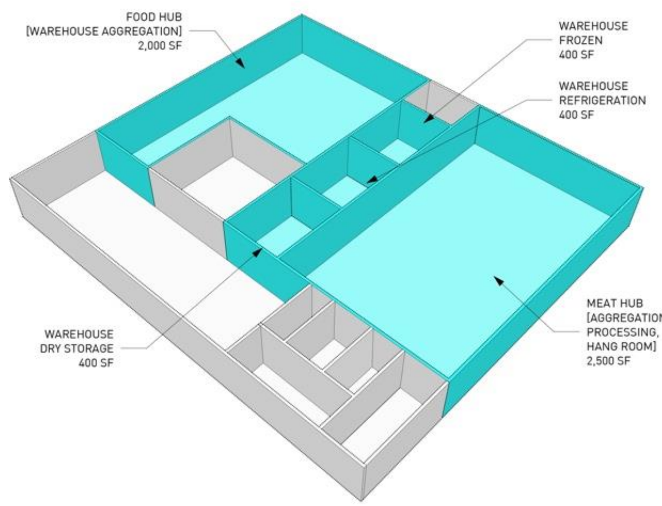
The commercial kitchen will feature current technology to meet the highest standards in food safety and quality with the various users' needs in mind. The space will support the incubation of small businesses, entrepreneurs, farmers, and collaborative community organizations looking for dedicated commercial kitchen space. The space is being designed to support three (3) user groups: 1) local small businesses and entrepreneurs looking for commercial kitchen space for the development of consumer packaged goods or food-focused businesses (i.e., CPG products, caterers, etc.); 2) farmers looking for value-add production space for the development of additional revenue (i.e., canning, pickling, cooked or baked items); and 3) a fee-based service provider offering value-add meat production (i.e., sausage making, charcuterie, curing of meats).



The space will also offer dedicated dry, refrigerated, and frozen storage available on a monthly rental basis. The space will be outfitted for individual rental considerations (dedicated individual stations and work pods) to allow each entity to work in the safest manner in a shared space. The space can also be rented by organizations or other businesses offering educational classes, trainings, or safety or workforce trainings that require commercial kitchen or equipment access.

- Potential User(s): Local entrepreneurs, small businesses, and farmers
- Estimated Square Footage Usage: 1,750 square feet plus access to shared storage spaces (approx. 1,200 sq. ft.)
- Income Source(s): Hourly rentals, short-term rentals, educational/training rentals
- Equipment and Space Considerations:
    - Specific FFE will depend upon the final user groups for the facility, but recommendations have been provided for the specific equipment needs of each
    - Individualized work pods/stations
    - Utilities, drains, sinks, etc. (will use best practices)
    - Access to dock for deliveries and receiving
    - Shared and secure storage for in-process and finished goods
    - Shared bathroom/staff space within the facility (approx. 160 sq. ft.)
    - Space for demonstration or teaching uses (design/layout considerations)

Meat Hub—Meat Fabrication, Processing and Specialty Meat Services Space



A commercial, temperature-controlled aggregation and production room for large-animal fabrication and processing is designed to be used in partnership with a fee-based service provider who can offer fabrication, processing, butchery, and specialty meat production services to local farmers. This space, built to USDA specifications, will support the multi-stage fabrication and processing of large animals (cow, pig, sheep, goat) to prepare them into saleable cuts, to provide supporting services for value-add products (cured products, sausages, charcuterie, etc.), and to provide packaging and aggregation of local meat products for distribution via the Hub. This space will combine dedicated refrigerated cutting room space with all necessary supporting equipment and racking for large-animal handling, butchery, and specialty cutting room space, some cold-room value-add production, and packaging and storage solutions for in-process and finished meat products.

- Potential Tenant(s): TBD (operator)
- Estimated Square Footage Usage: 2,500 square feet plus access to shared storage spaces (approx. 1,200 sq. ft.)
- Income Source(s): Rent
- Equipment and Space Considerations:
    - Specific FFE and will depend upon the final operators' needs based on their desired skill offerings (processing, butchery, and production), but recommendations have been provided for the specific equipment needs of these potential end uses

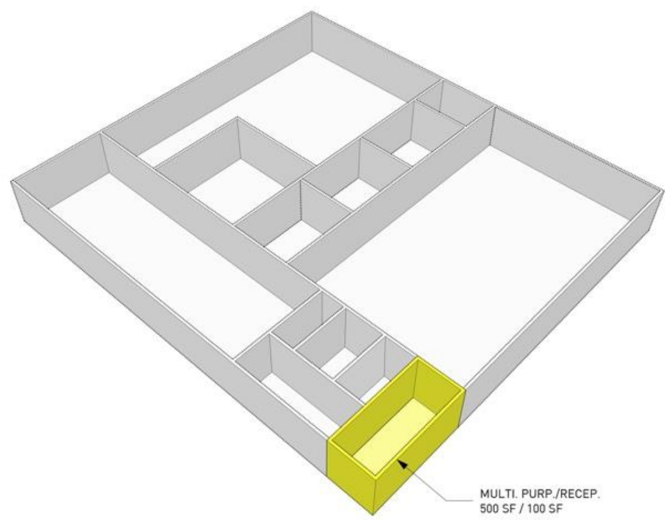
- Refrigerated/temperature-controlled work areas with USDA-regulated design and safety integrations
- Access to loading/receiving area
- Access to commercial kitchen facilities
- Access to warehouse and storage facilities
- All utilities, drains, sinks, etc. (will use best practices)
- Access to truck/van parking during use/production hours

Online Marketplace (Storage Needs)

The online marketplace will offer producers operating elsewhere in the building additional sales channels by which to offer their products, and it will increase community food access connection points and convenience. Developing retail connection points also enhances the Hub as a destination and supports the local food systems in development. This marketplace will function primarily "virtually" and be supported by technology and software owned by the Hub. In addition to these technology needs, the marketplace will need access to shared storage in the Hub for finished product storage.

- Potential User(s): N/A
- Estimated Square Footage Usage: *no specific footprint, just access to shared storage spaces*
- Income Source(s): Revenue/fee percentage from sales
- Equipment and Space Considerations:
    - Access to warehouse and storage facilities

Multi-Purpose Space



The multi-purpose space(s) will be developed for Hub programming and services such as educational programming, entrepreneurship programming, and skills training, as well as to support users' additional space needs for small meetings, classroom space needs, and small gatherings of 50 people or less. The room is a public space with access to shared reception area that oversees entrance to the building.

- Potential User(s): Facility users and community members
- Estimated Square Footage Usage: 500 square feet total (incl. 100 sq. ft. for reception)
- Income Source(s): Rentals (short term)
- Equipment and Space Considerations:
    - Dedicated 500–square foot modern multi-functional space (approx. 50 people capacity)
    - Shared access to restroom facilities for event guests and organizers
    - Access to loading/receiving area
    - Access to commercial kitchen facilities
    - Access to warehouse and storage facilities
    - All utilities, drains, sinks, etc. (will use best practices)
    - Access to truck/van parking during use/event hours
    - Access to limited on-site parking for event guests

Office Space – Private

The office space in the Hub is dedicated to the core operator and other facility employees. The space is a private space with access to reception.

- Potential Tenant(s): TBD
- Estimated Square Footage Usage: 250 square feet total
- Income Source(s): Rent or short-term rentals (shared office space)
- Equipment and Space Considerations:
  - Modern office offerings for both public and private users (phone booths, high-speed internet, copy access, restroom facilities, basic office supplies)
  - Access to all other building offerings
  - All utilities, build-outs, etc. (will use best practices)
  - Access to limited on-site parking for office users/clients

Revenue Inputs

The Hub will generate revenues to support its operation via rents (long-term tenants and short-term users), programming fees, facility usage fees (storage, meeting space), and revenues generated by support programming and services offered by the core operators. Table 8 details the revenue rentals, usage rates, and fees associated with the revenue-generating components and programming in the Hub.

Table 8: Revenue-Generating Hub Activities

Component / Programming	Revenue Sources	Potential Users	Revenue Model
Food Hub – Warehouse and Aggregation	Long-Term Lease/Rent Fees for Use/Services	Operator Local Farmers	$/Sq. ft.
Commercial Kitchen	Short-Term Hourly Rentals	Users	$/Hour
Meat Hub—Meat Fabrication, Processing or Value-Add (Specialty) Services	Fee-Based Service	Operator Local Farmers	$/Service (based on pounds or product)
Meat Hub—Aggregation, Storage, Hang Room	Long-Term Lease/Rent Fees for Use/Services	Operator Local Farmers	$/Sq. ft.
Warehouse Storage (Dry, Cold, Frozen)	Rental (Monthly)	Users	$/Month
Online Marketplace	Service Fees, and/or Percentage of Sales	Operator	% of Sales Service Fee
Multi-Purpose Space	Rent and/or Short-Term (Hourly) Rentals	Operator Other Users	$/sq foot $/Hour or Use
Loading/Receiving Dock	N/A – Not Revenue Generating	All Users / Tenants	N/A
Business Incubation Services	Fee-Based Services / Programming	Operator Users	$/Service (based on class or programming length)
Knowledge & Service Hub for Local Ag Community (Technical Programs & Services)	Fee-Based Services/Programming	Operator Users	$/Service (based on class or programming length)

Upkeep, Scheduling & Oversight

Once the CSPDC facilitates the design, development, and construction of the Hub, additional resources will be needed to operate and maintain the Hub. The facility will rely on its management and/or its tenants to help operate and maintain the spaces shown in Table 9. Staff or tenants will maintain the allocated spaces and programming they are connected to and be responsible for the operational costs, including (but perhaps not limited to) labor and staffing, general operational overhead (utilities, equipment, maintenance and facilities upkeep, general supply needs), and related upgrades or additions to their spaces for their ongoing needs.

The specific platform used for the online marketplace will be chosen by the future operator of the facility (examples include Local Food Marketplace, Farm Fare, or custom-made software).

Table 9: Upkeep, Scheduling and Oversight considerations

Component / Space	Tenant/Operator
Overall Facility Upkeep & Operation	Onsite
Commercial Kitchen: Upkeep, Scheduling & Oversight	Onsite
Online Marketplace: Management, Tech support,	Offsite (third party)
Multi-Purpose Space: Upkeep, Scheduling & Oversight	Onsite

Growth Opportunities

The CSPDC is also exploring future avenues for growth for the Hub. Once operation in years 1-3 has shown the facility's ability to break even and create sustainable revenue streams for its operation, additional programming or service components may be integrated into the space usage or design. These include, but are not limited to, the following:

Workforce Development. A top priority for the Hub is to capitalize on the specialty skill bases being integrated into other programming to support workforce development in the region. Workforce development programs primarily focused on training community members for jobs in meat fabrication, meat processing, butchery, and specialty meat production could create additional workforce to support the Hub's programs, generate entrepreneurial ventures in the field or support local businesses in need of this specialized skill base. Once the Hub is up and running, this will be a core focus of growth for the facility. These skills are considered advanced for job placement with wages above minimum wage ($20/hr. industry average) and opportunities for growth and job development over time. The Hub is uniquely situated to integrate this into its own job-training programs, creating an "academy" for meat-focused job skills that supports its own growth and development, as well as the region's.

Direct to Consumer Subscription Membership. The facility's meat services can be expanded to integrate a direct-to-consumer subscription membership. This program offers an additional revenue stream to support meat fabrication, processing, and specialty services at the Hub and offers an access point for members of the local community to find locally raised meat products.

Food Truck. The facility's meat services can also be expanded to source and supply meat to a BBQ truck offering on-site meat and prepared food sales. This would be a continuation of the value-add specialty meat programming that the operator of that component could offer on their own or via an additional program partner. This on-site access point makes locally raised meat products in a ready-to-eat format available to the community. The truck's upkeep, storage, supply, and parking needs would be met by the compatible services offered by the facility.

Food Truck Parking and Kitchen Access. Similar to the offerings that would be needed to support the BBQ truck, the facility could expand to support local food truck access for operators in the surrounding municipalities and region. Food truck licenses often require the operators to attach to a "commissary kitchen" for basic service needs (such as grey-water disposal, a spray-out/cleaning area, trash removal, and overnight parking) and potential production needs (kitchen access, storage access, or dish-washing facilities). The Hub can service all of these needs and create an additional revenue stream from existing spaces and offerings with minimal upgrades.

VI. Financial Model

This section outlines the financial assumptions and resulting forecasted financials for the three business areas identified as highest priority and potential for the facility: an aggregating regional food hub, a meat processing facility, and a shared commercial kitchen.

The break-even models provided are based on assumptions derived from the primary research, input from core team members with unique expertise in these areas, an assessment of comparable businesses, and NVA's expertise through previous projects. While these assumptions are based on rigorous research, some are driven by indirectly comparable businesses or analogs, or through input provided by the core team that is unable to be verified by outside sources. (The practice of using analogs is widely accepted in the venture capital industry when directly comparable businesses do not exist. Analysts develop models using ratios from existing businesses that have an operating feature that is analogous to the new venture, even when the core businesses are different.)

Therefore, these **assumptions and financial forecasts should not be viewed as exact revenue and cost figures that would be generated or incurred**. Actual cost, revenue, and budget figures will vary—sometimes significantly—based on additional research, final decisions made on the business model, decisions made by the actual operators of these businesses, and market conditions.

The model assumes the facility will be staffed with a full-time operator/manager (with a salary of $66,000), a purchasing manager (with a salary of $80,000), a sales manager (with a salary of $42,000), a warehouse manager (with a salary of $66,000), and two drivers (each with a salary of $40,000). The hourly staffing needs are forecasted to be three butchers ($20/hour), two general warehouse workers ($15/hour), two workers for the food hub ($15/hour), and two facilities and maintenance staff ($15/hour). This staffing structure is similar to that of food hubs nationwide that (1) are at break-even sales volumes ranging from $750,000 to $2 million and (2) are not focused on non-revenue generating services like technical assistance for growers. Salaries are based on data from the Bureau of Labor Statistics for Virginia.[30] Fringe is assumed to be 30 percent of gross wages for the salaried employees.

Table 10: Personnel for All Enterprises

Title	Type	Rate	Benefits	No.	Annual Pay	Area of Facility
Operator/Manager (1)	Salary	$66,000	30%	1	**$85,800**	Food Hub, Meat Hub, Commercial Kitchen
Purchasing Manager (1)	Salary	$80,000	30%	1	**$104,000**	Food Hub, Meat Hub
Sales Manager (1)	Salary	$42,000	30%	1	**$54,600**	Food Hub, Meat Hub
Warehouse Manager (1)	Salary	$66,000	30%	1	**$85,800**	Food Hub, Meat Hub
Drivers/Delivery (2)	Salary	$40,000	30%	2	**$104,000**	Food Hub, Meat Hub
Butchers/Production (3)	Hourly	$20	0%	3	**$124,800**	Meat Hub
General Warehouse (2)	Hourly	$15	0%	2	**$62,400**	Food Hub, Meat Hub
Food Hub Packing (2)	Hourly	$15	0%	4	**$124,800**	Food Hub

[30] U.S. Bureau of Labor Statistics, "May 2020 State Occupational Employment and Wage Estimates Virginia," https://www.bls.gov/oes/current/oes_va.htm#35-0000.

Enterprise 1: Food Hub

Financial Assumptions

For the financial analysis, “food hub” refers to fruit and vegetable purchases only (meat is included in meat hub).

Overview of Business Model

- Revenue model: Purchases produce from growers; sells to buyers at a markup
- Core services: Aggregation; washing, sorting, and packing of raw produce; cold and dry storage; sales and marketing
- Distribution: The food hub will provide inbound or outbound distribution, moving produce to and from farmers

Product Mix and Pricing

The food hub will buy and sell whole produce only. The crops that would be moved by the hub are based on input received from interested growers and buyers and are described in significantly more detail in the “Primary Research” section.

The potential list of products that could be moved by the food hub long-term is significantly longer and would be determined by the management team of the food hub, based on a deeper assessment of demand, grower interest, and margins generated by specific crops.

The assumed average case price at which the food hub will sell produce to buyers is developed based on a database of high and low prices for these crops from the Baltimore terminal market. Even though there is a local product premium that could be applied to these average case prices, based on the assumption that an operator is successful in capturing a higher price based on higher quality, brand, longer shelf life, and buyer incentives to purchase local, we have not incorporated that premium into our analysis. This was done mainly to be conservative. Based on NVA’s research nationwide, buyers—particularly institutions and the distributors that serve them—often state that they are willing to pay an average of 15 percent more for local products, both because their customers are asking for this and because they often have local procurement goals in place.

These steps result in a case price to buyers of $21.00.

Revenue to Growers

Case price paid to growers is the buyer price less the amount the food hub receives. This represents the revenue stream generated by the traditional food hub and covers the fixed and variable cost of goods and fixed overhead costs (i.e., Selling, General & Administrative expenses).

It is assumed that 100 percent of product coming into the food hub will be hub-packed (i.e., the produce will come in “raw” from the grower and will be washed, sorted, and packed into cases by the food hub). This assumption is based on USDA data showing that only 74 out of the 685 farms in the area have onsite packing facilities.[31]

[31] Ag Census USDA National Agriculture Statistics Service, “2017 Census of Agriculture, Virginia.”

The food hub will receive 35 percent of the case price to buyers for items that the food hub must pack in-house. This higher margin of 35 percent accounts for the labor and packaging costs the hub will incur and the operating costs of running a pack house. Therefore, the growers will receive 65 percent of the case price for hub-packed items. In the P&L, this is referred to as "COGS—Food Hub."

Through interviews with food hubs and other produce distribution companies—as part of NVA's 50+ food hub studies nationwide—and from the national food hub surveys conducted by the National Good Food Network, it is clear that case margins vary drastically from hub to hub. On one end of the spectrum, grant-supported (often nonprofit) food hubs and cooperative food hubs may set margins as low as 10 percent. On the other end, for-profit hubs that offer extensive value-added services for their products charge up to 40 percent. Input received from traditional buy/sell food hubs with a goal of profitability suggests that 35 percent is often palatable to growers and enables the hub to generate adequate profit margin at scale.

It is assumed that each case of produce that the hub washes, packs, and sorts requires eight minutes of labor to receive, wash, sort, and pack and an additional one minute of labor to unload off the rack and pack onto a delivery vehicle.

These labor estimates are based on labor models developed through data collected on similar operations across the country as part of NVA's previously conducted research and were part of the consideration of personnel required to run the facility.

Packaging

Whole produce cases are packed in corrugated cardboard, estimated to cost an average of one dollar per case. These assumptions are based on actual costs incurred by food processing and distribution companies nationwide. The actual costs will vary on a crop-by-crop, pack-size-by-pack-size basis.

An additional cost of ten cents per case is incurred for all incremental packaging, including pallets and plastic wrapping. This is based on input from food hubs nationwide and reinforced by "Running a Food Hub: Assessing Financial Viability," a report put forth by the USDA in March 2016.[32]

Facilities and Capacity

The capacity of the various storage areas is based on the following assumptions:

- Average of 25 cases per pallet
- Two tiers of racking
- 2 turns per week
- 50 square feet of the dry storge area set aside for facility use (to store dry spices, etc.)
- 25 pounds of produce per case
- Estimated utilization of the facility at 50 percent in year 1 and growing by 5 percent every year (to allow flexibility for growth and to meet spikes in supply).

[32] USDA Rural Development, "Running a Food Hub: Assessing Financial Viability," 2016, https://www.rd.usda.gov/sites/default/files/publications/SR77_FoodHubs_Vol3.pdf.

Table 11: Food Hub Overview

	Dry	Cold	Freezer	Assumptions/Notes
Square feet	400	200	200	From the building program
Square feet available	350	200	200	50 sq.ft. of dry for facility use (spices, packing material, etc.)
Square feet for hub utilization	263	150	150	25% of available square footage allocated for shared kitchen storage rentals
Average turnover/week	2	2	2	
Annual capacity (in cases)	21,000	12,000	12,000	With 2-tiered racking and leaving room for aisles
Total annual capacity (cases)	45,000			
Total annual capacity (lbs.)	~1.12M			25 lbs./case

Revenue Model

The survey data indicated there were 51 farms interested in selling to the food hub. Assuming the average acreage of 4 acres per farm, the total acreage of the farms willing to sell to the Hub is 204 acres (at a minimum, as some of the farmers in the survey had over 50 acres of useable acreage). The farmers further indicated they would be willing to sell an average of 45 percent of their produce to the food hub, which means that of the 204 total acres, interested farmers were willing to sell about 92 acres of produce to the food hub. Based on an average yield per acre of 25,000 pounds (based on the produce mix to be processed at the food hub) and losing about 33 percent of the yield to damage and seconds, it is estimated that the facility can process 67 acres of harvested land, which converts to 1.12 million pounds of produce, as noted in Table 11. Assuming food hub utilization to be 50 percent in year 1 and growing to 70 percent in year 5, the revenue projections for the food hub are as shown in Table 12.

It is also estimated that fruit and vegetable prices to go up at a rate of 2 percent per year, which is in line with inflation expectations. This is a conservative estimate given the high demand for locally grown produce in recent years.

Table 12: Food Hub Revenue Model

Food Hub	Year 1	Year 2	Year 3	Year4	Year 5
# of farms in the region	6,312				
Acreage per farm	216	USDA			
Total acreage (per USDA 2017)[33]	50,920	Data			
Harvested vegetable acreage	925				
Harvested fruit & berries acreage	2737				
# of vegetable & fruit operations	685				
# of vegetable farms with packing facility	74				
# of farms interested in selling to hub	51	Survey			
Avg. acres/farm selling to the food hub	4.0	Data			
% of produce farmers willing to sell to hub	45%				
Total acreage selling to the food hub	91.8	91.8	91.8	91.8	91.8
% of total harvested acreage in the area	2.51%	2.51%	2.51%	2.51%	2.51%
Total cases per capacity	44,928	44,928	44,928	44,928	44,928
Total acreage facility can process	67	67	67	67	67
Estimated utilization	50%	55%	60%	65%	70%
% of total harvested acreage in the area	1.84%	1.84%	1.84%	1.84%	1.84%
Avg. yield per acre	25,000	25,000	25,000	25,000	25,000
Avg. yield lost to seconds	33%	33%	33%	33%	33%
Total pounds of product (minimum of capacity & availability)	561,600	617,760	673,920	730,080	786,240
Avg. pounds per case	25	25	25	25	25
Total cases going through the hub	22,464	24,710	26,957	29,203	31,450
Avg. wholesale price per case	$21.00	$21.42	$21.85	$22.29	$22.73
% increase in price		2%	2%	2%	2%
Revenue Potential for Facility	**$471,744**	**$529,288**	**$588,967**	**$650,800**	**$714,892**

Food Hub	Year 1	Year 2	Year 3	Year 4	Year 5
Cost of goods sold (65% to farmer)	$306,600	$344,000	$382,800	$423,000	$464,700
Packing Costs ($1.10 per case)	$24,700	$27,200	$29,700	$32,100	$34,600

[33] Ag Census USDA National Agriculture Statistics Service, “2017 Census of Agriculture, Virginia.”

Sensitivity Analysis

Analysis was performed to understand the sensitivity of earnings before interest, taxes, depreciation, and amortization (EBITDA) to the grower margin and the utilization of the facility's capacity in pounds and cases. For this part of the analysis, it was assumed that there were no changes to the revenue and expense numbers of the other enterprises (meat hub and shared kitchen). The sensitivity analysis is for year 1, and as it is tightly linked to the other enterprises, it should be used for directional guidance only. There could be situations where the meat hub or shared kitchen's contributions to the bottom line are higher, which would mean the facility overall would be profitable at a higher grower margin (lower price markups) for the fruit and vegetable enterprise. The base case is highlighted: with all other factors held constant, paying growers 65% of the case price (grower margin) and operating at 50% of the food hub's total capacity results in EBITDA of -$101,005 for the three combined operations.

Table 13: Food Hub Sensitivity Analysis

		Grower Margin:	55%	60%	65%	70%	75%	80%	85%
Capacity Utilization	Annual lbs.	# of Cases	**EBITDA**						
40%	449,280	17,971	(91,346)	(110,216)	(129,085)	(147,955)	(166,825)	(185,695)	(204,565)
50%	561,600	22,464	(53,831)	(77,418)	(101,005)	(124,593)	(148,180)	(171,767)	(195,354)
60%	673,920	26,957	(16,316)	(44,621)	(72,925)	(101,230)	(129,535)	(157,839)	(186,144)
70%	786,240	31,450	21,199	(11,823)	(44,845)	(77,868)	(110,890)	(143,912)	(176,934)
80%	898,560	35,942	58,714	20,974	(16,765)	(54,505)	(92,245)	(129,984)	(167,724)
90%	1,010,880	40,435	96,228	53,771	11,315	(31,142)	(73,599)	(116,056)	(158,513)
100%	1,123,200	44,928	133,743	86,569	39,395	(7,780)	(54,954)	(102,129)	(149,303)

Based on this analysis, it appears that grower margin of anything more than 65 percent will be unprofitable to the facility (as it will not be enough to cover the expenses of the facility). The lower the utilization of the food hub, the lower the grower margin must be for the hub to be profitable (or even to break even).

Enterprise 2: Meat Hub

Financial Assumptions

Overview of Business Model

- Revenue model: Fabrication services and purchasing meat from the farmer and selling finished products to buyers at a markup. For the purposes of financial modeling, it is assumed that the meat processing facility **takes ownership of all products.**
- Core services and products:
    - Processing meat into vacuum-packed cuts and specialty meats (i.e., charcuterie, sausage, and smoked meats)
    - Fabricating services
- Distribution: The meat hub will provide distribution services.

Product Mix and Pricing

For the purposes of this model, it is assumed that the processing facility will focus only on beef. In reality, the facility will also work with pork, lamb, and potentially poultry. This calculation was made because beef is predominant in the area, and if the facility can profitably process beef, it can be adapted to manage other livestock with no additional requirements.

The facility will process and sell vacuum-packed cuts and specialty meats. Pricing estimates were determined as follows:

- Price per pound of the fabricating services is estimated to be $0.70, based on secondary research and from information provided to NVA by farmers.
- Price per pound of vacuum packed cuts is estimated to be $4.00, based on the price per pound marketed online by beef producers who sell to wholesale customers.
- Price per pound of the specialty meats is assumed to be $10.00 per pound. This is based on the various *retail* prices of various types of specialty meats, which have a wide range. Ten dollars is an achievable price point.

It is assumed that 10 percent of the meat hub's processing will be focused on fabrication. Of the remaining 90 percent, 75 percent is assumed to be vacuum-packed cuts and 25 percent is assumed to be specialty meats. The operator will determine the specific product mix and final pricing based on what the purchasing manager can source and the sales manager can sell.

The model conservatively assumes the prices will go up 5% for years 2, 3, and 4 and then 3% for year 5. This is based on the increasing demand for locally grown and processed meats. These assumptions lead to a weighted average price per pound generated by the facility of $5.06 in year 1.

Facilities and Capacity

The capacity of the various storage areas is based on the following assumptions:

- Average of 25 cases per pallet
- Two tiers of racking
- 2 turns per week
- 35 pounds of meat per case

Estimated utilization of the facility is 50 percent in year 1 and growing by 5 percent every year (to allow flexibility for growth and to meet spikes in supply).

Table 14: Meat Hub Overview

	Cold	Freezer	Hanging	Assumptions/Notes
Square feet	200	200	2,500	From the building program
Square feet for hub utilization	150	150		25% of available square feet allocated for shared kitchen storage rentals
Average turnover/week	2	2		
Annual capacity (in cases)	12,000	12,000		With 2-tiered racking and leaving room for aisles
Total annual capacity (cases)	~24,000			
Total annual capacity (lbs.)	~840,000			35 lbs./case

Revenue Model

Based on the interested farmers in the survey, the meat hub will be able to purchase and process over 300,000 pounds of meat in year 1, which equates to approximately 40 percent utilization of the facility. The 450 head used for revenue calculations is 0.67 percent of the total head available in the region,[34] making it a reasonable and achievable supply number. Based on the prices and services discussed in the previous section, the revenue that can be generated from the meat hub is calculated as shown in Table 15. There is an estimated 10 percent increase in the number of heads being sold to the hub per year.

Table 15: Meat Hub Revenue Model

Meat Processing	Year 1	Year 2	Year 3	Year 4	Year 5
# of heads in region per USDA ag census	67,440	67,440	67,440	67,440	67,440
Lbs. grown by farmers interested in selling to hub	750,000				
Avg. lbs./head on the rail	750	Survey			
# of heads available	1,000	Data			
% of heads they are interested in selling	45%				
# of heads to meat hub	450	495	545	584	625
% increase in # of heads to meat hub		10%	10%	7%	7%
Total # of beef operations in county	472				
Total farmers in survey	56				
Total throughput (cold + freezer)	838,656	838,656	838,656	838,656	838,656
Average capacity utilization	50%	55%	60%	65%	70%
Avg. lbs. that can be processed (min. of availability, capacity)	337,500	371,250	408,750	438,000	468,750
Avg. net capacity utilization	40%	44%	49%	52%	56%

[34] Ag Census USDA National Agriculture Statistics Service, "2017 Census of Agriculture, Virginia."

Meat Processing	Year 1	Year 2	Year 3	Year 4	Year 5
Avg. lbs./head (hot carcass)	750	750	750	750	750
Avg. usable lbs./head	550	550	550	550	550
# of heads that can be processed	450	495	545	584	625
# of heads processed/week	9	10	11	12	13
# of heads processed/day (6-day week)	2	2	2	2	3
% of total heads in the region	0.67%	0.73%	0.81%	0.87%	0.93%
Fabrication lbs.	33,750	37,125	40,875	43,800	46,875
Price per lb. of fabrication	$ 0.70	$0.74	$0.77	$0.81	$0.83
Lbs. of hot carcass to be bought for processing	303,750	334,125	367,875	394,200	421,875
# of heads to be bought for processing	405	446	491	526	563
Lbs. to be sold as prime cuts	158,838	174,918	192,567	206,294	220,805
Avg. price/lb. of prime cuts	$4.00	$4.20	$4.41	$4.63	$4.77
Lbs. to be sold as value-added products	63,881	70,348	77,446	82,967	88,803
Avg. price/lb. for value-add meat	$10.00	$10.50	$11.03	$11.58	$11.92
Average increase in prices		5%	5%	5%	3%
Revenue potential for facility	**$1,297,788**	**$1,500,597**	**$1,734,606**	**$1,951,176**	**$2,151,074**

Cost of Goods Sold (COGS)

Cost of Product

Price paid per head of beef (hot carcass hanging weight of 750 pounds) is estimated to be $1,575 (from the Virginia Department of Agriculture)[35]. We arrived at this price by taking an average of the 10-year average prices of the Choice 2-3 Slaughter steers in the three weight classes for a 1,200 pound live weight animal and adding $150 of additional processing fee.

	10 year average price (per hundredweight)
Slaughter Steers, Choice 2-3, 1000-1100 lbs	$114.33
Slaughter Steers, Choice 2-3, 1100-1300 lbs	$120.34
Slaughter Steers, Choice 2-3, 1300-1500 lbs	$121.70
Average price per hundredweight	$118.79
Price for 1200 lb live weight	$1,425
Processing fee	$150
Total cost per head to the meat hub	**$1,575**

[35] Virginia Department of Agriculture and Consumer Services, USDA-VA Market News, Richmond, VA, https://www.vdacs.virginia.gov/pdf/auctionaverageprices.pdf.

Additionally, it is assumed that the facility sees a 73 percent yield (approx. 550 pounds of 750 pounds of hanging weight). The rest is discarded as unusable.[36]

Packaging

Packaging is assumed to be $0.25 per pound of meat processed at the meat hub and are associated with vacuum-sealed meat packing. This is based on average retail prices of meat processing plants and can be considered the higher end of the packing costs.

Table 16: Cost of Goods Sold

Meat Processing	Year 1	Year 2	Year 3	Year 4	Year 5
Cost of goods sold ($1,575/head)	$638,000	$702,600	$773,500	$828,600	$886,900
Packing Costs ($0.25/lb.)	$84,400	$92,800	$102,200	$109,500	$117,200

Sensitivity Analysis

The meat hub's revenue comes primarily from vacuum-packed cuts and specialty meats; analysis was performed to understand the sensitivity of EBITDA to the price points for these two types of products. For this part of the analysis, it was assumed that there were no changes to the revenue and expense numbers of the other enterprises (food hub and shared kitchen). The base case is highlighted: with all other factors held constant, pricing prime cuts at $4.00/lb. and specialty products at $10.00/lb. results in EBITDA of -$101,005 for the three combined operations in year 1.

Table 17: Meat Hub Sensitivity Analysis

Price/Lb. Prime-cuts >	**$2.50**	**$3.00**	**$3.50**	**$4.00**	**$4.50**	**$5.00**	**$5.50**
Price/Lb. Specialty:				**EBITDA**			
$5.00	(649,745)	(571,597)	(493,449)	(415,300)	(337,152)	(259,004)	(180,855)
$6.00	(586,886)	(508,738)	(430,590)	(352,441)	(274,293)	(196,145)	(117,996)
$7.00	(524,027)	(445,879)	(367,731)	(289,582)	(211,434)	(133,286)	(55,137)
$8.00	(461,169)	(383,020)	(304,872)	(226,723)	(148,575)	(70,427)	7,722
$9.00	(398,310)	(320,161)	(242,013)	(163,864)	(85,716)	(7,568)	70,581
$10.00	(335,451)	(257,302)	(179,154)	(101,005)	(22,857)	55,291	133,440
$11.00	(272,592)	(194,443)	(116,295)	(38,147)	40,002	118,150	196,299
$12.00	(209,733)	(131,584)	(53,436)	24,712	102,861	181,009	259,158
$13.00	(146,874)	(68,725)	9,423	87,571	165,720	243,868	322,017
$14.00	(84,015)	(5,866)	72,282	150,430	228,579	306,727	384,875
$15.00	(21,156)	56,993	135,141	213,289	291,438	369,586	447,734

As with the fruit and vegetable enterprise, the profitability of the meat hub is tightly linked with the profitability of the other enterprises being managed by the facility. This sensitivity analysis provides directional guidance and assumes that the operations of the food hub and commercial kitchen operate

[36] University of Tennessee Extension, "How Much Meat to Expect from a Meat Carcass," https://extension.tennessee.edu/publications/Documents/PB1822.pdf.

within the model assumptions. Under those conditions, the meat hub will need to sell the vacuum-sealed meat at a minimum of $3.00 per pound to be profitable. The price of specialty meats will depend on market demand for the product and the degree of value-added provided by the meat hub.

Enterprise 3: Shared Kitchen

Financial Assumptions

Overview of Business Model

- Revenue model: Hourly rental from kitchen usage and storage.
- Core services: Kitchen space with professional grade equipment and dry and cold storage spaces for food entrepreneurs

Facilities, Capacity, and Pricing

The kitchen space will potentially have three hotline stations and four cold prep stations based on the building program square footage. Assuming the kitchen is open 24/7, there is potential for three shifts (six hours each with two hours in between for clean-up and down-time), and with seven rentable stations, the total capacity of the kitchen is 3,780 hours as shown in Table 18.

The dry, cold, and freezer storage areas each have room for eight 4.5x3-feet storage cages in the area set aside to rent out to the entrepreneurs—25 percent of the total square footage of the storage areas.

Table 18: Shared Kitchen Overview

	Dry	Cold	Freezer	Assumptions/Notes
Square feet	87.5	100	100	25% of total square feet from the building program
Square Feet per cage	13.5	13.5	13.5	Equipment list (4.5 feet x 3 feet)
# of cages in area	8	8	8	With 2 tiers with aisle space
Monthly rent for storage	$30.00	$45.00	$45.00	
Hotline stations	3			$20/hour
Cold prep stations	4			$15/hour
Shifts per day	3			6 hours / entrepreneur with time for cleaning and downtime
Capacity ("rentable" hours/month)	**3,780**			7 stations x 18 hours x 30 days

Revenue Model

The survey data indicated there are 21 entrepreneurs in the area who are interested in utilizing the commercial kitchen. From the survey, each entrepreneur will rent the kitchen for an average of 17 hours per week (this number takes into account seasonality where the kitchen operates at higher utilization during the summer months than during the winter months) which translates to 1,428 hours per month. Based on the total kitchen capacity of 3,780 hours, the utilization of the kitchen (if rented for 1,428 hours/month) will be 38 percent in year 1. Assuming an annual increase of 10 percent in the number of entrepreneurs renting the space, the kitchen utilization will climb to 52 percent in year 5.

A second source of revenue for the shared kitchen will come from storage rental spaces. It is assumed a utilization of 50 percent (12 units out of the 24) based on the 21 entrepreneurs currently identified. The rental rates used for the kitchen and storage rentals is based on market rates.

Table 19: Shared Kitchen Revenue Model

Shared Kitchen	Year 1	Year 2	Year 3	Year 4	Year 5
Kitchen Rental Revenue					
Average # of entrepreneurs (per survey)	21	23	25	27	29
% increase		*10%*	*10%*	*10%*	*10%*
# of hours per entrepreneur per week	17	**Calculated from survey results*			
Total # of hours per month (min. of availability, capacity)	1,428	1,564	1,700	1,836	1,972
% Utilization	***38%***	***41%***	***45%***	***49%***	***52%***
Rental hours of hot prep stations/month	612	670	729	787	845
Rental hours of hot prep stations/year	7,344	8,043	8,743	9,442	10,142
Rental rate of hot prep station/hour	$20	$20	$20	$20	$20
Rental hours of cold prep stations/month	816	894	971	1,049	1,127
Rental hours of cold prep stations/year	9,792	10,725	11,657	12,590	13,522
Rental rate of cold prep station/hour	$15	$15	$15	$15	$15
Annual rental revenue from kitchen	$293,760	$321,737	$349,714	$377,691	$405,669
Storage Rental Revenue					
Utilization of storage space	50%	50%	50%	50%	50%
Rental revenue from storage spaces/month	480	480	480	480	480
Rental revenue from storage spaces/year	5,760	5,760	5,760	5,760	5,760
Revenue potential for facility	**$299,520**	**$327,497**	**$355,474**	**$383,451**	**$411,429**

All Other Expenses

Distribution

It is assumed the facility will lease two refrigerated box trucks. These vehicles would be leased at $4,000 per month, based on current market estimates. It is assumed that the two trucks will average about 2,000 miles per week (based on 200 miles per day and 5 days per week). With trucks averaging about 12 miles per gallon and a cost of $3.20/gallon, it is estimated that the cost of gas will be $28,000 per year. Maintenance is covered within the lease rate.

Selling General & Administrative (SG&A) and Utilities

The SG&A and utility assumptions are detailed in the profit and loss statement below and are based on input from food hubs through NVA's previous studies.

Table 20: Profit and Loss Statement

In $1000s		Year 1	Year 2	Year 3	Year 4	Year 5
Revenue						
Food Hub		472	529	589	651	715
Meat Processing		1,298	1,501	1,735	1,951	2,151
Kitchen		300	327	355	383	411
Total Revenue		**2,069**	**2,357**	**2,679**	**2,985**	**3,277**
Cost of Goods						
Food Hub		331	371	413	455	499
Meat Processing		722	795	876	938	1,004
Total Cost of Goods		**1,054**	**1,167**	**1,288**	**1,393**	**1,503**
Gross Profits		1,015	1,191	1,391	1,592	1,774
SG&A Expenses	**Increase**					
Personnel expense	3%	777	801	825	849	875
Lease of vegetable washer	3%	0	30	31	32	33
Internet (per month)	3%	3	3	3	3	3
Bank fees (incl. cc fees 2% of 50% of total sales)	0%	11	13	14	16	17
Phone	0%	7	7	7	7	7
Tech (finance, inventory, tech support, HR/payroll)	3%	36	37	38	39	41
Food hub marketplace S/W cost	0%	5	5	5	5	5
Refrigerated box trucks	3%	96	99	102	105	108
Diesel costs	3%	28	29	30	31	32
Website hosting	0%	2	2	2	2	2
Security Monitoring	0%	2	2	2	2	2
Office Supplies	3%	6	6	6	7	7
Insurance $5.0M liability	3%	4	4	4	4	5
Tax/audit services	3%	15	15	16	16	17
Legal services	0%	5	5	5	5	5
Licenses, permits -incl. HACCP	3%	5	5	5	5	6
Training		2	2	3	3	3
Marketing		21	24	27	30	33
Facility Expenses						
Utilities—electric	3%	18	19	20	20	21
Utilities—N. Gas	3%	9	9	9	9	10
Utilities—Water	3%	12	12	13	13	14
Maintenance—coolers & equip	3%	21	21	22	22	23
Maintenance—land & bldgs.	3%	10	11	11	11	12
Property tax & insurance	3%	21	21	22	22	23
Operating Expenses		**1,116**	**1,183**	**1,222**	**1,261**	**1,302**
Operating Profit (EBITDA)		**-101**	**8**	**169**	**331**	**472**
Interest expense		124	124	124	123	117
Earnings after Interest Expense		**-225**	**-116**	**45**	**208**	**355**
Other Expenses						
Depreciation & Amortization		128	128	128	128	128
Taxes	35%	0	0	0	28	80
Net Income		**-353**	**-244**	**-82**	**52**	**148**

Funding Uses

Based on the financial analysis, the funding required for the development and support of the facility until it can achieve financial and operational stability is as shown in Table 21.

Table 21: Funding Uses

Use	Amount	% of Total
Land purchase	$592,500	12%
Building construction cost	$2,077,500	40%
Equipment	$875,550	17%
Working capital	$1,592,968	31%
Total	**$5,138,518**	**100%**

The working capital includes the funding required until the enterprise generates operational profit, supports interest payments for the first two years (until profitability is achieved and the enterprise can make interest payments) and pre-occupational capital (estimated at 20 percent of the land, building costs, and equipment) and will be used to cover design of the facility, blueprints, consulting, utility prepayments, soil tests, and environment impact, among other potential expenses.

VII. Site Selection

Seven potential sites were submitted to the CSPDC using the site criteria provided by NVA found in Appendix 10. The location of the sites are as follows: two sites in Staunton; two sites in Rockingham County; two sites in Augusta County; and one site in Harrisonburg. One site in Staunton was omitted as it did not have enough information provided.

NVA evaluated the submitted sites and provided a summary for consideration, found in Table 22. Site 1 is an urban location without gas service. Site 2 is a good fit if there is capital to build. Site 3 is also a good fit. Site 4 has no gas service and would require upfront capital to build. Site 5 has no gas service and would require alignment with the local Planned Unit Development. Site 6 may also be a good fit.

Table 22: Potential Sites

Site	Address	Locality	County	Avail. Area	New or Existing Bldg	Comments
1	10 Morris Mill	Staunton	Staunton	*Not provided*	Existing	Unknown available area. Urban location, septic, appears to have adequate power, but no gas utility.
2	Research Dr.		Rockingham	N/A	New	Appears to have utilities. Would require upfront capital to build.
3	4913 Crowe	Mt. Crawford	Rockingham	64,000	Existing, multiples of 8k sq. ft.	Existing utilities.
4	49 Wilshire	Fisherville	Augusta	20,600	For sale	No gas service; site is twice the required area; zoned industrial
5	2465 Lee	Mt. Sidney	Augusta	44,000	Existing	No gas service; planned unit development for zoning
6	2610 S. Main	Harrisonburg	Harrisonburg	42,000	Existing	Zoned industrial; utilities on site; site has four times the required area. Unclear if leasing is an option.

This is not an exhaustive list. Additional sites may be added as the process is still ongoing. Based on the sites and information provided to date, it is recommended that the sites in Mt. Crawford (site 3) and Harrisonburg (site 6) be investigated further, as they meet the most desirable criteria.

VIII. SWOT Analysis, Risks, and Recommendations

SWOT Analysis

The following SWOT (Strength, Weakness, Opportunities, Threats) analysis summarizes the Shenandoah Valley food system landscape based on comprehensive primary and secondary market research of the region.

Strengths

- **Shenandoah Valley has regional and historical recognition** as a vibrant agricultural area—for both agrotourism and as a source of quality local agricultural products. Four out of five of Virginia's top agricultural producing counties are in the Central Shenandoah Valley.
- **The Shenandoah Valley is uniquely centrally located for regional and national distribution.** With two major arteries—I81 and I64 intersecting in the heart of the Shenandoah Valley, the region is within a day's drive (eight to ten hours) from more than one-third of the U.S. population and all major eastern cities.
- **Climate and soil are conducive to raising a diverse set of crops year-round** with greenhouse use and/or season extension practices.
- **Vegetable and meat sales have seen significant growth** between 2012 and 2017.
- Farmers markets exist in every county in the region, indicating **strong interest in local foods.**

Weaknesses

- **Lack of USDA-inspected meat slaughter facilities** in the region has created a backlog of animals to be processed. This has been an obstacle for producers to grow operations and may require culling of animals that cannot be slaughtered.
- **Dearth of skilled labor force** has made it hard to find and hire farm laborers. The region has a lack of skilled labor in meat handling or butchery.
- The region has an **aging farmer population and decrease in farmland.** The average age of a farmer in Virginia is 59. The average size of a produce operation is very small (3.9 acres). The number of acres in farmland and the number of farms are decreasing, while the number of very large farms (2000+ acres) is increasing--these factors increase obstacles for new farmer entry and land access.
- There are **very few certified organic operations** in region that garner higher price points/premiums and align with consumer trends.
- **Lack of value-added processing infrastructure** in the region has meant that some businesses travel more than 100 miles to access a commercial kitchen facility.
- **Few small to midsized farms are set up to wholesale** to groceries, institutions, or distributors where GAP certification and packaging specs are required.
- **Lack of distribution, cold storage, and infrastructure** in the region makes it difficult for farms to bring crops to market, store crops, and extend their sales season. Infrastructure that exists on farms is not for shared use.
- **The dairy industry is struggling.** On average, one dairy closes every day in the state of Virginia.

Opportunities

- **Shenandoah Valley branding** will build community among producers and bring regional and national recognition to the agricultural area. The region already garners an informal reputation for once being the “bread basket of the South” and is a destination for cultural, scenic, and agrotourism. Formalizing the region under one brand would be an easy step to bring increased revenue to and expand the market potential of the agricultural sector.
- **Interest in vegetable farming is increasing** in the region. The number of vegetable farms increased between 2012 and 2017, and local demand for fruits and vegetables is higher than supply within region (NVA *MarketSizer®*), indicating there is opportunity for increasing produce supply *within* the region to meet existing demand. There are opportunities to grow this industry through technical assistance, wholesale readiness training, and collaboration among growers to focus on a set of high-value crops (and move away from commodity agriculture).
- **Lack of value-added processing infrastructure** indicates opportunity to provide this type of certified facility within region.
- There is opportunity to **capitalize on convenience trends**, to formalize and aggregate direct delivery and online sales marketplaces that have enabled convenience and safety during the pandemic.
- Because of the centrality of the region and highway interchanges, **wholesale distribution services that serve small to midsized farmers** are able reach a geographically diverse set of customers.
- **Lack of “clearing house” for information,** education, food system initiatives, and technical assistance for small farmers provides opportunity to create a centralized locale that “connects dots” between existing services in region and the needs of smaller producers.
- **Growing consumer interest in organic, local, and quality** food products in addition to prepared/healthy convenient foods and food delivery is a strong and consistent trend, which indicates opportunity to increase the supply and existence of delivered local foods and prepared foods made with local and organic ingredients.

Threats

- **Unemployment** is on the rise due to COVID-19. Loss of income may impact consumer and buyer ability to pay premiums for locally produced foods, patronize restaurants, and buy directly from farmers.
- **The restaurant industry and institutional food service are struggling** due to COVID-19. Hundreds of restaurants have permanently closed throughout Virginia since on the onset of the pandemic, and institutional food services that exist in colleges and universities have remained closed or are serving greatly reduced volumes. This represents a significant decrease in potential buyers of locally produced food at scale.
- **Dearth of meat slaughter and processing infrastructure** is a threat to family farm businesses. Even before the pandemic impacted meat processing plants, USDA meat slaughter and processing facilities were at full capacity, and many already had a backlog of animals in Virginia and surrounding states. Currently, all facilities in the region are booking out in 2021, which is forcing farmers to either cull their animals or not sell at optimal time, potentially incurring a loss. For small to midsized diversified farms, this is especially dire, as meat provides a crucial component to their operation and they don’t have the processing volumes that would enable them to get an earlier kill date. Additionally, the regulatory environment and requirements prevent a new USDA slaughter facility to be quickly or easily brought online.

- **Limited supply of wholesale-ready produce** growers in the region impacts ability to cash flow food hub, which requires high volume.
- **Labor required to process raw farm product** and convert to value-added goods takes farmers away from core business, and they may not want to or may not be able to do this additional labor.
- **Farmers may not want to share infrastructure or share** risk with each other in order to benefit from a collaborative network model of sales and distribution.
- **Lack of availability of skilled labor.** In every interview and conversation during the study, farmers and businesses cited the lack of labor force in the region as a major threat to their businesses. With high employment, even during the pandemic, this is a considerable trend. In particular, there is a lack of a skilled butchery/slaughter workforce which has exacerbated the bottleneck in meat processing capabilities in the region.

Risks and Mitigation Strategies

There are key risks to consider that may have a material impact on the successful development, launch, and viability of the Agricultural Enterprise Center. However, the risks can be mitigated with the right upfront strategies.

1. **Limited pool of skilled laborers**

   Mitigation Strategies:

   - Identify talent pool partnerships and develop a robust pipeline. Actively seek opportunities to partner with educational institutions within the region that provide training and education for meat processing skills. Leverage these partnerships for recruitment.
   - Cultivate a positive work environment and establish equitable pay practices. Offer competitive compensation and benefit packages with vacation and sick time to all employees.
   - Provide employees with opportunities for growth. Introduce and offer professional development opportunities for employees to improve both hard and soft skills.

2. **Low profit margins**

   Mitigation Strategies:

   - Build loyalty for a Shenandoah Valley brand and tell the local story to customers. There is real value-added in local produce, which should command a better price: local produce has a longer shelf life and better taste; it is nutritional; and many shoppers and diners know the difference and will pay for it. Convey the benefits to consumers at retail through farm identification on signage, cases, PLU codes, and other strategies.
   - Build a diverse customer base. The company should seek customers in channels that are less price-sensitive and can purchase in large quantities in addition to institutional markets. Target customers should include fine dining restaurants, high-end hotels, premium grocery stores, and specialty health food stores. Public schools and broad line supermarket and foodservice distributors purchase very large quantities but will be more price-sensitive. The food hub should seek a mix of customers that emphasizes the higher end of this range.
   - Secure a management team with experience in marketing and sales.

3. **Limited supply of wholesale-ready produce growers / experienced wholesale farmers.**

   Mitigation strategies:

   - Work closely with interested growers to get them wholesale ready—small infrastructure improvements, GAP certification, and identifying ideal product mixes.
   - Make it a win for growers even if unprofitable at first. If it doesn't work for the growers in year 1, there will not be a year 2. This means giving growers the price they need even if it cuts into or eliminates gross margin and ensuring the enterprise is well enough capitalized to cover any initial losses.
   - Establish a wide and cooperative network of growers. There should be a core group of growers that participate in pre-season crop planning, but cultivating relationships with a broader range of growers will also increase the likelihood of filling gaps if weather or other unplanned events disrupt supply. These transactional relationships can be the foundation for future partnerships as the business expands.

4. **Quick depletion of operating capital**

   Mitigation strategies

   - Build in and identify a contingency plan to proactively account for potential unplanned expenses or other pitfalls. Have the ability to make adjustments with minimal disruption to the business operations. Monitor business liquidity closely.
   - Revisit the budget and develop sound ongoing mechanisms to track revenue and expenses and enhance forecasting capabilities. Take a proactive approach to identifying and understanding trends and how they impact the financials.
   - Invest time in cultivating strong relationships with lenders and potential investors and ensure sufficient access to capital.

5. **Lack of slaughter capacity**

   Mitigation strategies

   - This poses a major risk to the meat supply to the facility. It will be important to forge strong relationships with the existing slaughter facilities and processors in the region in order to support the meat farmers of the CSV. It is in the interest of the existing slaughter facilities to support their customers in order to ensure future business—if farmers cannot get animals slaughtered/processed, they will not continue raising animals, which will hurt the slaughter business in the long term. An operator with strong relationships and business acumen that can work with existing facilities to create favorable arrangements for all parties involved is imperative.
   - Ramping up meat operations may be a phased approach in order to accommodate existing slaughter capacity.
   - Additional research into a slaughterhouse build may be necessary.

Strategic Recommendations and Next Steps

The feasibility study presents the business case for the development of an Agricultural Enterprise Center. It is the mechanism for the public sector to encourage private sector investment. It is critical that the owner/operator is engaged during the development phase (outlined below) so that the site plan, facility design, operating model, and business plan reflect their strategic vision and risk profile.

Phase 1: Next Steps

NVA recommends the following steps for the CSPDC to continue to support the success of the project:

1. **Conduct stakeholder outreach**. Understand the level of interest and enthusiasm of all attendees of the April 2021 stakeholder meetings. Follow up individually with stakeholders who expressed interest in learning more and becoming a user of the space. This initial group of interested stakeholders can form a stakeholder board, which can serve as extension of champions, supporters, and thought partners. Develop a cadence of communications to foster current stakeholder engagement and reach and identify new interest groups. These communications and outreach should be ongoing through the formal build and official grand opening of the Shenandoah Specialty Meat and Produce Hub.
2. **Identify and strengthen third-party partnerships.** Key partnerships with slaughter facilities, meat processors, specialty distributors, specialty groceries, and markets will be important to build and cultivate early. Look for opportunities to share project plans and updates with each. This is a highly interdependent industry, one in which "coopetition"—cooperation with competitors—can expand markets and support prices. As the business and new relationships develop across the local food system, these stakeholders and other intermediaries serving the same market should be open to opportunities that could build efficiencies and strengthen markets. These intermediaries could also become customers, and vice versa, and are a potential means for finding markets and filling orders.
3. **Perform site selection search.** Continue facility site search and vetting using site criteria defined from the study.

Phase 2: Development

The following steps, from the original proposal to the CSPDC, outline recommended actions for the next phase of the project —these may be performed by the CSPDC, the operator/owner, a grower-owner board, or any combination of the above:

1. **Perform operator and anchor tenant searches.** Convene a search committee. Leverage site selection criteria and the operator and anchor tenant RFIs (request for information) provided during the feasibility study. Develop, issue, and publicize an RFI from interested site owners, potential operators of the Shenandoah Specialty Meat and Produce Hub, or enterprises interested in operating the center. *Note*: *This could be separate RFIs or one combined RFI allowing respondents to indicate multiple areas of interest*. An experienced manager that oversees buying and selling with a deep knowledge of production, perhaps a former grower, is critical for garnering trust and confidence among growers and buyers. Growers will need assurance that they will be rewarded with a better price if they deliver a better quality product; thus, the sales staff must be able to effectively gauge and market quality to buyers to ensure an equitable correlation between quality and price. Draft memoranda of understanding (MOU) for selected site, owner/operator, and potential tenants.
2. **Begin facility design and business planning.** Update the operating model and building program based on the chosen site, operator, and anchor tenant requirements. Generate initial drawings of the site plan, floor plans, and elevations. Develop a final equipment list. Estimate rough costs for construction, furniture, fixtures, and equipment and tenant improvements.

3. **Refine the business plan.** Complete a comprehensive business plan that reflects the strategic vison of the selected owner/operator and their operating model. This will include their role as facility manger and any co-located enterprises the operator oversees directly. If necessary, the market analysis will be updated to validate the owner/operator's value proposition. The business plan will include the following:
    a. Strategic plans for phased facility development, operations, staffing, financing, brand/marketing
    b. Financial projections and capital requirements through break even and sources and uses of funds
    c. Governance structure and operating agreements with CSPDC and other strategic partners
    d. Implementation roadmap with milestones for securing letters of intent with anchor tenants, improving the site, facility design development, construction, and creating a private placement memorandum for fundraising.
4. **Commence fundraising.** The process can be complimentary to the anchor tenant RFIs. Ultimately CSPDC should create a fundraising plan to explore and secure diverse streams of capital from both public and private investors.
   See Appendix 13 for NVA's Funding Guide updated for 2021.

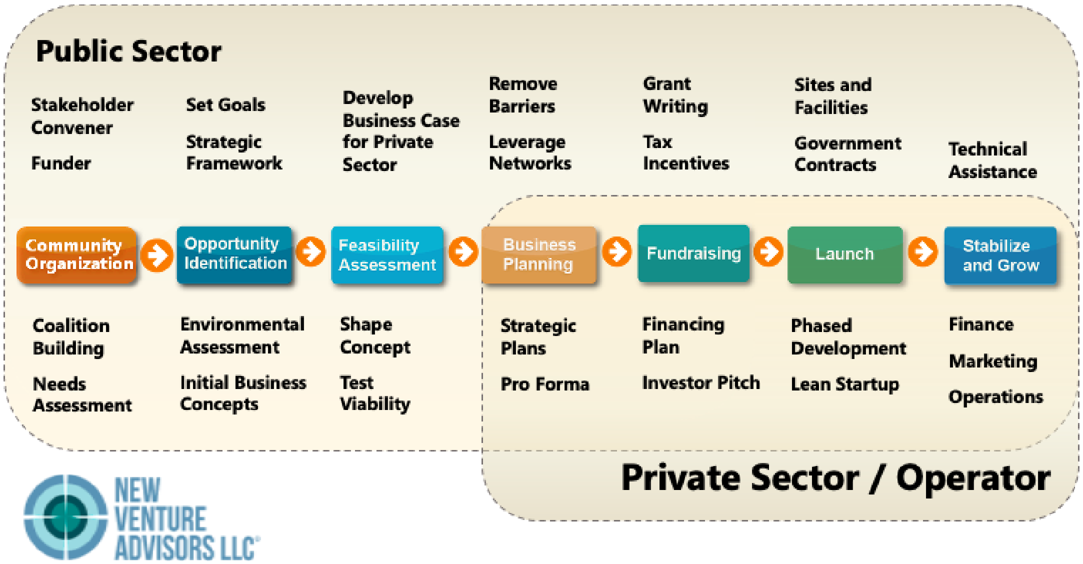
Role of CSPDC in Phase 2:

- Select operator search committee
- Issue RFIs and field responses
- Convene search committee through its selection process
- Review, negotiate, and finalize MOUs with anchor suppliers/tenants
- Option to participate in design phase and business planning process with owner/operator

The most important contributing success factor is the identification of an operator. The recommendations above assume an operator search is successful. If an operator is not secured, a (part-time) project manager with development experience will be a key role/hire. Additionally, there are things the public sector can do to build momentum and cultivate relationships through the planning phases that can be awarded to the identified operator. The figure below highlights momentum-building activities.

FRAMEWORK FOR PUBLIC-PRIVATE PLANNING COLLABORATION

New Venture Advisors developed this planning framework and leads and advises public and private stakeholders throughout the process.



Conclusion

The Shenandoah Valley is a region of rich agricultural heritage, recognized today for its fertile soils and abundance of local produce and meats. This feasibility study confirms the potential to support small and midsized farms in the region looking to continue this farming tradition, access new markets and strengthen the local food and farm economy in the process. Food system infrastructure that is dedicated to small producers and their unique challenges and needs is essential in bringing sustainable food system change to any community. The Shenandoah Valley is no exception. It has all of the pieces needed for a vibrant local food economy, and the opportunity to unite them under one vision to support these growers and consumers.

Appendix 1: Outreach Lists – For Interviews and Surveys

The following lists were produced by the CSPDC and their study team to guide outreach and community engagement for the primary research phase of the study.

Interview List

Category	Type	Locality	Name	Organization
Buyer	grocery	Harrisonburg	Steve Cooke	Friendly City Coop
Buyer	other	Rockingham County	Jeff Heatwole	Produce Auction
Buyer	rest/caterer	Staunton	Mike Lund	Lundch
Buyer		Harrisonburg	Ron Cropper (Resource Group)	Resource Group
Buyer	grocery	Augusta County	Kevin McClaren	Augusta Co-op
Buyer	grocery, rest/caterer	Augusta County	Dave Gardner	Valley Pike Farm Market
Buyer		Shenandoah County	Jon Henry	Jon Henry General Store
Distributor	specialty	Bedford County	Bev Eggleston	Ecofriendly Foods
Distributor	specialty	Richmond	Mark Lilly	Farm To Family
Farmer	meat	Augusta County	Joel Salatin	Polyface Farms
Farmer	meat	Rockingham County	David Lee	Zion Hill Farms
Farmer	dairy	Rockingham County	Frank Will	Mount Crawford Creamery
Farmer	produce	Page County	Jeff Jennings	Long Acres Produce
Farmer	produce	Rockingham County	Lee O'Neil	Radical Roots Farm
Farmer	produce	Page County	Darrell B. Hulver	Survivor Farm
Farmer	meat	Augusta County	Andrew/Valerie Crummett	Cool Breeze Farm
Farmer	meat	Rockbridge County	Rosalea Riley Potter	Buffalo Creek Beef
Farmer	meat	Highland County	Lou Ann & Chuck Neely	Riven Rock Farm
Farmer	meat	Augusta County	StacyRae Johnson	1 Tribe Farm
Farmer	non food	Rockingham County	Julie Houshalter	White Oak Lavender Farm / Purple Wolf Vineyard
Farmer	produce	Highland County	Kari Sponaugle	Church Hill Produce
Farmer	produce	Rockbridge County	Keith Holland	Three Rivers Farm
Food Business	growth	Harrisonburg	Joe Cloud	T&E Meats
Food Business	rest/caterer	Rockingham County	Derek Smiley	Smiley's Ice Cream
Food Business	early stage	Highland County	Missy Moyers-Jarrells	Laurel Fork Sapsuckers
Food Business	Farm Brewery	Shenandoah County	Lynn StClair	Swover Creek Farms
Food Business	rest/caterer	Bath County	Kyle Krieger	Les Cochons d' Or
Food Business	small/early stage	Waynesboro	Louella Hill	Bellarino Creamery
Food Business		Augusta County	Julie Rice	Vic&Jules
Food Business	rest/caterer	Harrisonburg	Diane Roll	Mama's Caboose
Food Business		Augusta County	Wendy Gray	Herban Moonshine, Polyface Farm
Food Hub	PDC	Southern VA	Debrah Gosney, Anne Wright	Southside Planning District Commission
Food Hub		Charlottesville	Natalie Vandenburgh	4P Foods
Stakeholder	education	Augusta County	Tom Brenneman	Project GROWS
Stakeholder		Regional	Eric Bendfeldt	VA Cooperative Extension
Stakeholder		Highland County	Laurie Berman	Allegany Mountain Institute
Stakeholder	extension	Rockingham County	Tom Stanley	Rockingham / Lexington Extension Agent

Survey Distribution list

1. Farmer's market lists:
    - Staunton FM; Ashley Malcolm
    - Harrisonburg FM: Josie Showalter
    - North Augusta FM: Meagan from PG
    - Lexington FM: Brian Ross
    - Broadway FM: CeCe Dodd
    - Highland FM:
    - Bridgewater FM
    - Glascow FM
2. Field of Gold Members
3. Economic development/Tourism directors list servs
4. CSPDC & Ag. Center website
5. CSPDC newsletter (Sep and Oct)
6. CSPDC/FOG social media
7. VA Cooperative Extension list serv/Buy Fresh Buy Local (Shenandoah Valley chapter)
8. Farm Bureau list serv
9. VDACS: VA Grown, VA Finest & Food and Bev Expo
10. Public project press release
11. Augusta County mailing list & Facebook page
12. Staunton City Facebook page & Twitter
13. Farm 2 Fork Affair
14. Virginia Tech List Serve
15. VA Farmers Market Association
16. VA FAIRS
17. Page County Grown
18. Staunton Creative Community Fund
19. Shenandoah Valley Small Business Development Center
20. Beerwerks Trail
21. Shenandoah Valley Wine Trail
22. Rockingham County Facebook & website
23. Waynesboro City mailing list
24. Restaurant Association—VRLTA
25. Rockbridge County Ag. Agent-supportive
26. Jennifer Vance—Boutitourt County
27. Chambers of Commerce
28. Jenna French
29. Regional Food Trucks
30. Rockingham County Farmers/Producer list
31. Rockbridge County farmers/supervisors
32. Shen. & Page County FOG contacts
33. Posters and hard copies at: Dayton Farmers Market, Martin's Harness Shop, Produce Auction, & Fair Grounds
34. The Highland Center contacts
35. SDDA
36. Staunton, Augusta County, Waynesboro tourism
37. FOG restaurants
38. Small Business Association
39. Tourism Departments
40. Chambers of Commerce

Appendix 2: Interview Guides

Shenandoah Interview Guide Overview

Approach:

Interviews are always fluid. NVA starts with a sense of what we want to learn from each interviewee but we do not adhere rigidly to the guide. We allow the conversations to take a natural course, which often leads to deeper insights than we can coax using predetermined questions. For this reason, these interview questions cover the broad territory recognizing that interviews will get specific according to each interviewee's priorities.

Intro Summary:

The Central Shenandoah Planning District Commission (CSPDC) is embarking on a feasibility study and design project for an Agricultural Enterprise Center in the Shenandoah Valley.

This new facility intends to support agricultural and food business diversification and growth through a number of potential services – aggregating and storing local products through a food hub, providing a commercial kitchen to create value-added products and test recipes, receive food-related education and training -- and perhaps more. New Venture Advisors has recently been brought on board to help guide the CSPDC through this process. NVA specializes in food enterprise development and local food system planning.

Over the next few weeks, we are conducting a series of interviews to gain a good understanding of the Shenandoah Valley food system, farmers, food businesses and opportunities and challenges within the region regarding food and entrepreneurship -- and how these may influence the offerings the Agricultural Enterprise Center will provide. You were identified as a key person for us to speak to, so we appreciate you taking the time to speak with us!

Audiences:
Farmers
Food Businesses/Entrepreneurs
Food System Stakeholders
Food Buyers

Food Buyer Interview Guide

(Food Hub, Distributor, Grocery store, Restaurant/Caterer, Institution)

General
Name
Title/Role at Company
Who is your core customer / who are you selling food to?

Sourcing

Do you buy all products in retail ready form, bulk wholesale form, or any combination?

Do you buy/source local products? How do you define local?

Where / who do you source local product from? (farmers, geography..)

What do you buy, how often and how much?

Do you prefer fresh foods or packaged/shelf-stable foods?

How do products get to you (pick up / delivery)?

What are the challenges in buying/transporting/storing local products? What are the benefits?

Do you see any price premium for local foods?

Demand
Tell us about the customer demand/interest in local products

Who is buying these products? (typical consumer?)

What are the core trends you're witnessing with your customer base?

What are some of your most popular locally produced SKUs?

How are they marketed? Is it successful?

Are there items customers request that you can't supply?

Are you able to buy un-processed product and process in house?

Covid 19
How has Covid-19 impacted your supply chain?

How has it impacted your buying process and business practices?

Do you see these changes as permanent or do you think things will "go back to normal"?

AEC
What would your vision for an Agricultural Enterprise Center be?

How will a facility like this help/support your business? Where is the ideal locale?

Who else should we speak to?

Food Business/Entrepreneurs Interview Guide

General
Name
Company:
Stage of business (start-up, early stage, growth)

Business overview
What do you make/sell?

How frequently do you operate (daily, weekly, monthly on a market schedule)?

What volume of sales do you produce for?

Market Channel
Where do you sell your product (wholesale, retail, direct to consumer – online, farmers market etc.)? Who is your core customer?

Do you sell your products in a retail package, wholesale/bulk form, or open foodservice format to consumers (counter service, farmer's market or other format that allows for service not packaging)?

What challenges do you have in selling to or accessing new markets/customers?

Production
Where do you produce your goods? (at home, shared kitchen, own facility, kitchen incubator, contract manufacturer)

Can you produce your products in a shared space or do you need private production space?

Have you had challenges in processing/packaging/distributing/storing your goods/products?

What are some of the key processing techniques you use to produce your product?

Do you use local products in your recipes?

What challenges do you have in sourcing and/or using local products in your recipes?

What are the main challenges you face in growing your business? (ex: marketing, sales, lack of capital, business skills etc.)

Covid 19
How has Covid-19 impacted business?

Do you see these changes as permanent or do you think things will "go back to normal"?

AEC
What would your vision for an Agricultural Enterprise Center be?

Would you be interested in the AEC to provide: space, resources or educational/training programs, sales or distribution opportunities?

What resources or assistance would be the most valuable to you?
How will a facility like this help/support your business?

Where is the ideal locale?

Who else should we speak to?

Farmer Interview Guide

General
Name
Farm Name

Tell us about your farm:

Size
What do you grow?
How much you produce annually?
Growing methods (conventional, organic, biodynamic, regenerative etc.)

Market Channel
Where do you sell your product (wholesale, retail, CSA, direct to consumer)? Who is your core customer?

What challenges do you have in selling to or accessing new markets?

Have you had challenges in processing/packaging/distributing/storing your products?

Do you see untapped market opportunities for farmers in your region?

Farm Product
Do you currently process your products? If so, what and where?

Do you have an interest in adding value to your raw products? (chopping, freezing, canning, packaging) If so, what types of added value products would you like to produce?

Covid 19
How has Covid-19 impacted your business?

Do you see these changes as permanent or do you think things will "go back to normal"?

AEC
What would your vision for an Agricultural Enterprise Center be?

How will a facility like this help/support your farm business?

Where is the ideal locale?

Who else should we speak to?

Stakeholder/Organization Interview Guide

Name
Title

Tell us about your role at your [X] organization and your work in the Shenandoah Valley

Does your organization directly work with farmers or food businesses involved with local agriculture—if so, how?

What are some of the challenges your community faces? What are some opportunities?

What would your vision for an Agricultural Enterprise Center be?

How will a facility like this help/impact your work?

Where is the ideal locale?

How would you/your organization like to collaborate or support the AEC?

Covid 19
How has Covid-19 impacted the food system in your region?

How has it impacted your beneficiaries/communities that you support?

Do you see these changes as permanent or do you think things will "go back to normal"?

Preliminary Interview Questions

Tell us about your farm/business/organization

What are some of the (food system) challenges your community faces? Where do you see opportunities?

What would your vision for an Agricultural Enterprise Center be?
    In your opinion, what is one feature this facility *must* have?

How will a facility like this help/impact your work/business/farm?

Where is the ideal locale?

Who else should we speak to for this project?
    Could you connect us with them

Appendix 3: Primary Research Analysis – Interview Synthesis

The following table summarizes key insights from the 37 interviews conducted during the primary research phase of the project. Interviewees have been kept anonymous.

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
Stakeholder A **Business Model/Info:** Buy fresh, buy local chapter champion **Located** in Rockingham	**Product Category:** Produce Meat, Other **Production Supply/Demand:** To meet demand: Rely on Martens, Krogers, Food Lion, Mt. Crawford Creamery Eastern VA—from growing 300 acres of vegetables Valley—growing 30-40 acres of vegetables Additional desired "sell to markets"—Radical Roots, Dave Oneil, Clifford and Don Roar with Valley Farming, Seasons Bounty CSA, Farmstead—Woods Edge Farm **Sourcing/Production/Distribution/ Processing Details:** $3-$4M—worth of produce goes through Produce Auction per year and comes from 5-10 mile radius	**Primary Customer:** Wholesale, Retail **Customer Details:** Multi-channel, Retail, Wholesale **Key Partnerships:** -Institutional purchasing/ wholesaling: UVA and VA Tech buy local products, -Augusta Medical center has tried to do more -Eastern Mennonite and Mary Baldwin University have tried to do more --- combination of local food hub products. -VA Tech distributor sources from local growers/ VA Tech has on campus farms.	1. Hard to balance supply and demand—part consumer education and part price points (have to travel to Charlottesville to make pricing work) 2. Getting producers to sell into wholesale markets is tough 3. Hard for farmers to maintain their place in the market; need name recognition on packaging 4. Getting GAP certification **COVID IMPACTS** Not specified	Market the region as a whole Model #1: Good Nature Family Farms (Kansas City)—formed alliance with about 150 farms, consistent packaging and maintained individual farm identity; works with a couple grocery chains and Amish farms Model #2: Friendly city food coop is doing an expansion -- Steve coke has been mentioned as a "node" or aggregating node. Friendly city food coop is already working with 100 producers around the state --- a network that is already established. Within that they're working with a local food hub, 4p foods. Model #3: A company that did some aggregation --- was called Shenandoah foods -- out of Staunton, had sprinter trucks, grew from 1 to 6 trucks, was moving 4M$ worth of products from Staunton and Harrisonburg Anchor tenants are important to reduce reliance on grant funding	**Features:** Cold Storage/Flash Freeze; Food Hub; Food Lab/Testing Kitchen; Packaging/Distribution/Marketing Operations; Value Added Processing **Other:** Need to identify anchor tenants **Location:** Harrisonburg has lots of growers and a warehouse with climate control Needs to be accessible (20-30 minutes from growers) 15-20 minutes from hwy 81 or 64 -- 45 mins for shen and page counties though --- in previous survey most farmers said 30-40 mins tops.
Stakeholder B **Business Model/Info:** AMI started as fellowship food education program, now nonprofit; used to be old school, has a lot of capacity to do more than what it's doing right now. AMI offers classes in new techniques about growing systems	**Product Category:** Produce **Production Details**: High tunnel and 4 season products Carrots, beets, onions, squash **Production Supply/Demand:** No one is doing charcuterie **Sourcing/Production/Distribution/ Processing Details:** Has 2 walk-in coolers, old fashioned cellar (carrots, beets), garage (onions), room under house (squash)	**Primary Customer:** Other **Key Partnerships:** - AMI Farm at August Health - Waynesboro City Schools with a robust Farm to School program - AMI Urban farm at VSDB	1. Not enough cold storage. Farmers have to grow items seasonally and get rid of them right away **COVID IMPACTS** Spearheaded a local food drive through the first two weeks of COVID	1. Aggregate food and create community label and branding 2. Farm to table community = cold storage space, need 4 different cold storages, dry/moist and cold/warm 3. Teach consumers about food (training/cooking classes)	**Features:** Commercial Kitchen; Cold Storage/Flash Freeze; Meat Processing; Packaging/Distribution/Marketing Operations; Training Space; Value Added Processing **Other Recommendations**: Food storage facility, mobile slaughterhouse, shared space for farmers to rent **Location**: Harrisonburg, 8 hours to most places

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
Also owner of Newtown Baking and Kitchen **Located** in Staunton					
Stakeholder C **Business Model/Info:** Founded as an organization to address childhood obesity and morbidities related to food. Driven by 10 social service agencies within Augusta Health. Focused on place-based education, pre-k-middle schoolers, bring them to farm, do Harvest of the Month where they taste a local item, farm to school in Staunton and Waynesboro, 2 year grant with FNS of USDA within the schools --- being a partner to identify and recruit suppliers Nutrition education and tastings in schools **Located** in Augusta	**Produce Type:** produce **Production Details:** greens, lettuce mixes, late season apples/orchard 12,000 pounds of food grown each year **Sourcing/ Production/Distribution/Processing Details:** Purchasing from 4P	**Primary Customer:** Wholesale **Customer Details:** Staunton City Schools and Waynesboro Public Schools **Key Partnerships:** Public/Private partnership goals Brokering relationships (that work out of 1 of 3 farmers markets) -- mostly from North Augusta, Waynesboro and VA dept of public health vendors from farmers markets Growers in Rockingham, Rockbridge, Augusta counties --- seasons bounty, second mountain farm (bulk greens) Common Grain Alliance	Lack of coordinate pathways for networking and marketing Set small town politics aside and we only get through this together (personality, ego, privileged producers, etc.) -- seeing individual success as shared successes, "Set a common plate, common table" This is a highly politicized community CSPDC is brokering a lot of relationships --- ironic they are leading this study…. (please keep confidential.. this is a sign of courage to take this on Politics of personality, ego, privileged producer, farm handed them ---- a lot of criticism in the farm community Growing for the market (grant and charity funded)—not usurping another grower's efforts **COVID IMPACTS:** Things are packaged in much smaller quantities 6 oz etc. In the past could bring in Second Mt. Farms, bulk greens—no touch element for logistics, health, etc. due to COVID; things are now packaged a lot more discreetly Now doing just in time ordering (vs. receipt in a central place for distribution), being delivered and packed for the days lunch right there, reduces the onus of the school system (not burdened with labor, storage) Schools aren't doing storage right now	1. Potential for 'pearls on a string' --- centralizing a decentralized food system is hard **COVID IMPACTS** Buying greens, lettuce mixes, late season apples/orchards, being delivered to each school (farmers are delivering themselves -- to each individual school) --- a couple of days a week Farms selling to schools: project grows selling their	**Features:** Commercial Kitchen Cold Storage/Flash Freezer Packaging/Distribution/Marketing Operations Value Added Processing **Other Recommendations:** Cooperative model --- where a member is an equity owner --- instead of one organization selling access, ESOP endeavor or cooperative, the equity piece is what's elusive to most, most people are running things on margins, equity isn't just about margins it's about respect, dignity, wealth of being and can become material generational wealth

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
Stakeholder D **Business Model/Info:** N/A – Broader perspective of the food system **Located** in Rockingham	**Produce Type:** produce meat, other **Production Details:** Mennonite farmers nearby mostly dairy farms and some poultry farms; committed with produce auction and that marketing model, old horse and buggy style **Product Pricing Details:** Use a lot of product at lower margin, ex. grape tomatoes (pretty labor intensive, wholesale market price pretty good, popular with school system because kids will eat them Close with hospital in Charlottesville prepared to buy higher end high marginal things **Production Supply/Demand Details:** High demand for high value/quality hand-picked crops: asparagus, raspberries, strawberries **Sourcing/ Production/Distribution/Processing Details:** Talked about having cold storage available at produce auction, decided not to Auctions based in Amish or Mennonite communities (“plain communities”)—business model: we’re all gonna do this together, solution to low prices is low prices, push through it and eventually the prices will come back up, hard to hold people together	**Primary Customer**: Other	Produce Auctions -To be successful you have to get in there and establish yourself and the products you’re selling. Buyer clientele are people who run road stands that run up and down valley region (Winchester to Shenandoah, route 11 parallel to 81) Talked to whole foods and wholesalers, hesitant to step outside of live auction marketing system High demand from wealthy cities for hand-picked high value crops -- but it’s a huge change in mindset so they need to be presented with right set of circumstances, support Geographical challenge: Allegheny Meats location and Staunton are 40-45 miles away, very difficult 45 miles	Need more mean processors	**Features:** Not specified **Other Recommendations**: carry dutch valley jar products, chocolate covered almonds, carry Meadowcroft Farm products Air bnb’s have display window and show Judy Croft’s products (6-8$ for pint jar) There are people who would like to do that, difficulty marketing, Judy got out and pounded the pavement Important: Marketing is key, make connections Highland Center Meat Processors Allegheny Meats, state of the art facility that’s sitting empty, lots of local investment and gov grants—heart breaking; went into it “if we build it they will come”, had capability of making jerky and smoke hams but counted on farmers bringing animals in and doing the marketing to have their own individual brand identity No effort to buy local livestock at market price and turn around and market value added products to generate revenue Takes someone behind it ready to work and develop businesses/ideas Another good case study: Buffalo Creek Beef, animals take priority, put together something that is working well for them, not sure there’s room for many more of those; vertically integrated; on 81 corridor **Location:** no recommendation

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
Buyer A **Business Model/Info:** Market + Event Hosting **Located** in Shenandoah, Middle of the valley (right off interstate 81 and route 11)	**Produce Type:** produce meat, other **Production Supply/Demand Details:** High demand for craft beer High demand for canned products—pickled beets and eggs, asparagus, peach halves Don't have the variety of production in the areas that they can get from a single producer **Sourcing/ Production/Distribution/Processing Details:** Self-delivery or commercial carry Broadline/Cisco for condiments and paper goods Stover's Greenhouse—lettuce delivery Direct purchase from food auction (lots of variability)	**Primary Customer:** Direct to Consumer **Customer Details:** Middle income and up (30-35 year old women) **Key Partnerships:** Dutch Valley (Lancaster, PA)—(No on else in VA can produce the volume of 150 -250 skus of product) Boars head deli, Wineries, Craft breweries	1. Difficulty sourcing products and keeping them fresh and marketing them 2. Inconsistency of quality, availability and price of products at the Auction **COVID IMPACTS** 1. No more events, weddings, corporate meetings 2. More people want to eat local and know where their food is coming from. 3. Local canneries wiped out	N/A	**Features:** Packaging/Distribution/Marketing Operations Value Added Processing **Other recommendations**: 1. Truck gardens **Location**: no recommendation
Buyer B **Business Model/Info:** Fresh map site = 50% off produce **Located** in New Market, VA, Farm Stores – Mt. Jackson and Warrenton, VA	**Produce Type:** produce meat, other **Production Details:** Fresh produce, eggs, milk, dairies, meats, cheese *Won't carry items that come out of a commercial kitchen **Product Pricing Details:** Margins and volumes are important—(i.e. willing to pay $50 per bushel) **Production Supply/Demand Details:** Currently can't supply enough local cheese to meet demand. **Sourcing/ Production/Distribution/Processing Details:** Varies by farmer Mainly utilizes produce auctions	**Primary Customer:** Direct to Consumer, Wholesale **Customer Details:** Top 10 buyer at the Shenandoah produce auction Buys for restaurants, CSA and individual store customers **Key Partnerships:** 4P—Unreliable pricing and products, not professional, ethically confused; Cavalier; Farm to Fork	1. Consistency, pricing, quality, markups (burned by 4P) 2. Packaging, marketing and branding can turn off customers, if it's ugly. 3. No good local dairy around (can't compete with PA and Mt. Crawford Creamery is unreliable) **COVID IMPACTS** 1. People want homegrown items 2. Need to always have basics on the shelves 3. Deliveries have declined	1. Better define local, organic. People are willing to pay premium pricing for organic (not local).	
Buyer C **Business Model/Info:** Co-op	**Produce Type:** other	**Primary Customer:** Wholesale	1. Lack of consistency for branded products (beef/cattle)	1. Build the market for dairy farmers	**Features:** Food Hub

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
Located in Augusta	**Production Details:** Feed mill, fertilizer, fencing, animal health products Retail stores—honey, canned pickles, vegetable plants, flowers—from valley, local produce—corn, tomatoes **Product Pricing Details:** Friend who markets local (natural beef) sells 1300 lb. steers for 13-14 hundred at market can get thousands of dollars if processed **Production Supply/Demand Details:** Consumer preference for local, fresh, natural, organic **Sourcing/ Production/Distribution/Processing Details:** Farmer's market/produce auction in Dayton	**Customer Details:** Farms throughout 30 counties in VA **Key Partnerships:** Not specified	**COVID IMPACTS** Desire for local has grown Consumers have a higher willingness to pay for products		Packaging/Distribution/Marketing Operations Value Added Processing **Other recommendations**: N/A **Location:** No recommendation
Buyer D **Business Model/Info:** Offices in IL, OK, TX, NC, MD, GA (manned by others) Sysco has 3 division Fresh Point largest buys fresh products and sells to institutions. Runs vendor managed program inside Fresh Point (Not owned by Sysco) Signal: sells to mass chain restaurants Sysco has a lot of distribution centers but don't have a lot in Fresh Point everywhere they need them, on national basis Sysco and Fresh Point opens contract with (i.e. outback steakhouse) fresh point doesn't have facility in mid atlantic area (MD, VA, DC triangle) so they have to work with others (Coastal Sunbelt) to supply	**Produce Type:** other **Production Supply/Demand Details:** large perception out there people are very concerned about food safety, idea that locally grown and organic = cleaner and safer and not handled so much **Sourcing/ Production/Distribution/Processing Details:** Distribution—MD to Hickory, NC Example—National basis—Sysco opens contract w/ chains (Fresh Point doesn't have a facility in the VA/DC area)—contract out to Coastal Sunbelt to supply those areas where they can't Takes a relatively broad definition of local -- any place you can go during the day and sleep in your own bed at night	**Primary Customer:** Wholesale **Customer Details:** Fresh Point Wegman's Costal Sunbelt **Key Partnerships:** Fresh Point Wegman's Costal Sunbelt	**COVID IMPACTS** Changed how people buy groceries, difficult to get to grocery store, also less frequent trips, and concerned about safety process itself Dreaded root vegetable (potatoes, other "fattening" foods) are now more desirable because they last longer More meal planning Supply chain broke down immediately because pandemic (not able to handle the need)	Not specified	**Features:** not specified **Other recommendations**: N/A **Location:** No recommendation

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
Located in IL, OK, TX, NC, MD, GA					
Distributor A **Business Model/Info:** Online marketplace; Also contracting, consignment and raising livestock **Located** in Arlington, VA, Washington, DC	**Produce Type:** meat **Production Details:** Turkey, Chicken (from Polyface), Quail, Swine, Rooster, Duck, Sheep, Goats, Value added beef and pork **Product Pricing Details:** not specified **Production Supply/Demand Details:** Swine—highest production in pounds **Sourcing/ Production/Distribution/Processing Details:** Self-distribution; Farmers bring livestock	**Primary Customer:** Retail **Customer Details:** 95% retail (farmer's market, direct sales, subscription services) **Key Partnerships:** not specified	1. Businesses are only focused on scale and are missing transparency and resiliency 2. Farmers are hesitant to buy too many animals because they worry about where they will get slaughtered. **COVID IMPACTS** 1. Sales grew (95% retail was DTC) 2. Restaurant sales declined	1. Focus on and incorporate tech into businesses (i.e. use of a transparent ledger/blockchain, food token, etc.) 2. Slaughtering facilities should be centrally located, multi-species and serve a diverse network of producers	**Features:** Meat Processing; Retail Space for Products Sold at the Facility; Training Space **Other recommendations**: 1. Incorporate meat, produce, grains, dairy and ready to eat food 2. Comprehensive training programs (trades, education, management **Location:** 460 and 81 (Roanoke and Lynchburg, in the county of Bedford) Ideally should replicate this model every 200-400 miles—need sizable, replicable models
Distributor B **Business Model/Info:** Brick and Mortar market, recently purchased an urban farm/commercial property **Located** in Richmond	**Produce Type:** Produce Meat, Other **Production Details:** Meat, Dairy, Vegetables, Fruit, Honey **Product Pricing Details:** not specified **Production Supply/Demand Details:** Consumers—hot fast food **Sourcing/ Production/Distribution/Processing Details:** Buy direct from farmers in Hanover County, Rockbridge, Nelson, Augusta Try to stay within 150 miles (buy from anyone producing quality local products) Self-distribute—meat, dairy, produce, fruit, honey jams	**Primary Customer:** CSA **Customer Details:** Operates on Thursdays, goes to auction on Tuesdays (Need everything on Monday CSA is year round and produce auction is seasonal **Key Partnerships:** Commercial Kitchens—2-3 places in Richmond (Hatch, Taza)	1. Hard to get product without running around all over the state 2. There are product pricing inconsistencies. Some charge by weight, by box, inconsistency in how things are being priced. 3. Trying to pick stuff that is grown without chemicals and it's hard to get that transparency from farmers --- for the most part everyone is honest --- don't require anything formally, just ask them how it's grown because customers want to know. **COVID IMPACTS** Considering doing pre-made meals, processed stuff, condiments, hot fast food	1. Clarity around variety, quality and price of goods.	**Features:** Food Hub **Other recommendations**: Hybrid of an auction and a food hub (chefs and farmers) **Location:** Richmond -density of people here and places for that food to go

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
Farmer A **Business Model/Info:** Monthly membership (subscription) program On farm market (events and regulars) **Located** between Stanton and Harrisburg	**Produce Type:** meat, other **Production Details:** beef, pork, eggs **Product Pricing Details:** not specified **Production Supply/Demand Details:** Distribution levels—20 beef, 5 hogs, 20 head of cattle, 4 dozen eggs/week **Sourcing/ Production/Distribution/Processing Details:** not specified	**Primary Customer:** Direct to Consumer **Customer Details:** 30-40 year olds (80-90% of the market) **Key Partnerships:** 1. T&E Meats 2. Front Royal 3. Allegheny Meats 4. COVID—Augusta Health (local hospital)—food boxes for the elderly	1. Risk averse farmers prevent growth 2. No labor force and maxed our facilities (meat processing) **COVID IMPACTS** creased product demand.	1. Butcher and break down primal cuts in a commercial kitchen 2. Form a distribution network to share costs, resources, etc.	**Features:** Commercial Kitchen; Event Space; Meat Processing; Packaging/Distribution/Marketing Operations; Retail Space for Products Sold at the Facility **Other recommendations**: 1. Restaurant 2. Community space (playground, walking trail, beer garden) **Location:** Staunton, Charlottesville, close to 81-64 corridor, populated end of Staunton
Farmer B **Business Model/Info:** Pasteurized pork operations and lodging facilities on farm for agritourism **Located** in Highland	**Produce Type:** meat **Production Details:** 100% grass fed and grass finished heritage beef Gourmet lamb Cattle Sheet **Product Pricing Details:** 50% gross margin on beef **Production Supply/Demand Details:** 700 acre operation 50-100 cows and hundreds of sheep Lower demand for lamb **Sourcing/ Production/Distribution/Processing Details:** Rely on others to process (see Key Partnerships)	**Primary Customer:** Direct to Consumer **Customer Details:** Core customers are health conscious families **Key Partnerships**: T&E Meats Blue Ridge Meats Allegheny Meats Local USDA plant	1. Restaurants don't want to buy product for commodity prices, but want to utilize farm branding 2. Farmer's don't always adhere to certain protocols and commercial kitchens don't pay enough for animals 3. Lost connection with where food comes from (consumers). 4. Allegheny Meats - capacity 8-10 beefs/day; 20 beefs/week with inspector - freezer space constraint - needed a refrigerated truck - higher price b/c competed with larger processing plants - poor job of labeling product - set of protocols could be mimicked by Greener World/American Grass Fed Association **COVID IMPACTS** Connected more people to local food	1. Scale up with partner farms and provide local products to a local hub	**Features:** Commercial Kitchen Cold Storage/Flash Freezer Event Space Food Hub Meat Processing Retail Space for Products Sold at the Facility Value Added Processing **Other recommendations**: 1. Online ordering component 2. Campus like feel 3. Platform for buying **Location:** Staunton, both interstate changes, really good vibe, good food scene
Farmer C **Business Model/Info:** Co-op **Located** in Page, In Luray	**Produce Type:** produce **Production Details:** Sweet potatoes—biggest production @ (1/4 and acre); Raspberries, Blackberries, Raspberries, Tomatoes	**Primary Customer:** Wholesale **Customer Details:** 40% of business is to farmers 30—40% of business is to local people in town	1. Farmer mentality is not vegetable or small production oriented and is more beef cattle **COVID IMPACTS** School sales decreased	1. Create a market for local products (produce) and a place/outlet for producers	**Features:** Commercial Kitchen Value Added Processing **Other recommendations**: N/A

Interviewee/Role	Products	Markets: Customers/Partnerships	Challenges	Opportunity	Food Center Vision
	Product Pricing Details: not specified **Production Supply/Demand Details:** $5.5M a year in sales **Sourcing/ Production/Distribution/Processing Details:** not specified	**Key Partnerships:** Page Co Schools (sweet potatoes) Local distillery—sweet potato and berry wines (disposition for small, damaged, odd formed items)			**Location:** Harrisonburg, would travel up to 30 miles
Farmer D **Business Model/Info:** Diversified farm + Member of Page County Growers **Located** in Page	**Produce Type:** Produce, meat **Production Details:** Beef by half, quarter or whole; Sweet corn, watermelons, pumpkins **Product Pricing Details:** not specified **Production Supply/Demand Details:** 500 acres of conventional farm land **Sourcing/ Production/Distribution/Processing Details: not specified**	**Primary Customer:** Direct to Consumer **Customer Details:** 50% DTC bulk of it went to auction Thinking about trying wholesale **Key Partnerships:** not specified	1. Saturated market in Page County (trying to sell product to 20,000 people) 2. Difficult to find markets to sell products (not good at developing—most products go to auction) 3. Producers want to remain as individuals when selling their products and sell at a premium price (lose to grocery stores on price) **COVID IMPACTS** 1. Not enough meat processing to handle the demand 2. People are buying more locally	1. Provide training for processing, canning, and other value-added services. (More farmer education). 2. Selling wholesale to DC	**Features:** Business Planning/Entrepreneurial Support/ Community Space Meat Processing Packaging/Distribution/Marketing Operations Value Added Processing **Other recommendations**: Mobile trailer (i.e. for meat processing) **Location:** No recommendation
Farmer E **Business Model/Info:** Main location + small kiosk store in Willingham **Located** in Harrisonburg	**Produce Type:** other **Production Details:** Dry mix—teas, sugars, petters, spices, herb de province **Product Pricing Details:** not specified **Production Supply/Demand Details:** not specified **Sourcing/ Production/Distribution/Processing Details:** Has a certified kitchen	**Primary Customer:** Wholesale **Customer Details:** Predominately wholesale accounts Provide lavender to jam/jelly producers **Key Partnerships:** 1. Local creamery—lavender ice cream 2. Country canner (Mennonites) 3. Cave Ridge Vineyard—tasting room, winemaker 4. Distilleries—making oils	1. Marketing and branding 2. Farmers are looking for ways to sell their products	1. Sell through a food hub	**Features:** Food Hub Packaging/Distribution/Marketing Operations **Other recommendations:** N/A **Location:** no recommendation
Farmer F	**Produce Type:** produce, meat	**Primary Customer:** Direct to Customer, Wholesale	1. Large labor and transportation expense (over 1 hour from the interstate)	Not specified	**Features:** Cold Storage/Flash Freezer

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
Business Model/Info: GAP and HGAP Certified. Conventional growing **Located** in Highland, Doe Hill	**Production Details:** 50 acres, Beef, poultry Vegetables—broccoli, cauliflower, tomato, okra, peppers, potatoes, upick strawberries (local), summer and fall squash (acorn, butternut), hard to grow straight cucumbers, brussels sprouts **Product Pricing Details:** not specified **Production Supply/Demand Details:** not specified **Sourcing/ Production/Distribution/Processing Details:** Not specified	**Customer Details:** 15% DTC and 85% wholesale - DTC—Highland County Farmer's Market, Farm stand - Wholesale—Wal-Mart via Produce Partners (in Ashland and Roanoke) **Key Partnerships:** Sealed the Seasons—partnering with a frozen market (send a truck for them to freeze an take to sale—cauliflower)	2. Competition (Mechanicsville and VA beach producers who are closer to hubs		Food Hub Packaging/Distribution/Marketing Operations Value Added Processing **Other recommendations:** Cross docking/place to drop product Back hauling **Location:** Staunton, I-81—I-64 corridor Secondary: Between Augusta and Richmond
Farmer G **Business Model/Info:** GAP certified, certified commercial kitchen Helped establish Rockbridge food hub Small on farm store **Located** in Rockbridge	**Produce Type:** produce, meat **Production Details:** 250 cows, 3-5 pigs, 3 acres of asparagus **Product Pricing Details:** $3.50/pound—squash, peppers, asparagus **Production Supply/Demand Details:** Not specified **Sourcing/ Production/Distribution/Processing Details:** Perform own distribution (travel 3x/week to Harrisonburg, Staunton, Charlottesville and Augusta	Primary Customer: Retail, Wholesale Customer Details: Wholesale—food hub (not sustainable) Key Partnerships: 4P Foods—marketing channel, food hub Carol County—commercial kitchen (process apple butter)—rarely used to capacity.	1. Lack of labor and interest 2. Deer, geese and bear are a problem for farmers 3. Don't have economies of scale, name recognition 4. Few processors 5. Uneducated, yet interested young farmers 6. Farmers are independent; cooperation is a challenge and the right infrastructure is not in place **COVID IMPACT** Did not have the farm store this year	1. Provide training for younger farmers 2. Outreach and educate farmers	**Features:** Cold Storage/Flash Freezer Food Hub Meat Processing Packaging/Distribution/Marketing Operations Training Space Value Added Processing **Other recommendations:** Central distribution Have a set of buyers to deliver 2x/week **Location:** no recommendation
Farmer H **Business Model/Info:** Vegetable farm, primarily Trying to drop CSA, have an online store, do drop spots (i.e. in Alexandria) **Located** in Rockingham	**Produce Type:** produce **Production Details:** Vegetable farm—(organic) wholesale—head lettuce, swiss chard, kale, cherry and heirloom tomatoes; also salad greens and herbs (for farmers markets not wholesale)	**Primary Customer:** Retail, Wholesale **Customer Details:** Retail -Whole Foods (core buyer); Other small grocers (with a DC reach) Wholesale—Widdells Farm wagon Other small grocers	1. Lack of big organic growers don't allow for the capture of price premiums at local food hubs 2. Too much of a heavy reliance on Whole Foods	1. Create another outlet to move volume with the right transportation and distribution (currently drive to Richmond weekly) **COVID IMPACT** Doubled CSA	**Features:** Commercial Kitchen Food Hub Packaging/Distribution/Marketing Operations Training Space Value Added Processing

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
	Product Pricing Details: not specified **Production Supply/Demand Details:** Demand is growing for organic line; there's a willingness for consumers to pay a premium organic price **Sourcing/ Production/Distribution/Processing Details:** Delivers all products except what wedels delivers to Richmond (because two hours). Widdells charges a fee per case. - Used to have this same model with the food hub Do own Charlottesville deliveries, work directly with the buyers, do invoicing Gourmet Central—utilized for processing (salsa, apple butter) Utilizes a commercial kitchen that's south of Richmond—interested in contract manufacturing	Charlottesville—Farmer's Market and Food Hub No sales to the produce auction **Key Partnerships:** Widdells Farm—dependency on deliveries to Richmond (2 hour trip)			**Other recommendations:** not specified **Location:** Staunton, pretty central for most people, near 64 and 81 interchange (good for transportation)
Farmer I **Business Model/Info:** Store + Shop (Donald's Meat Processing) Store is 400sq ft Owns Cattlemen's market in Lexington (have a kitchen here—grab and go, seasonal specials, lunch and carry out, retailer first) USDA Certified **Located** in Lexington	**Produce Type:** meat, other **Production Details:** 80% of meat is for Buffalo Beef; 20% other farmers and personal meat Pork and sausage—70% Buffalo Creek Beef and 30% other and custom animals Cooked, cured, value added—beef, lamb, pork, chicken, duck, seafood Smoker—sirloin roasts, deli meats, sandwiches Other items—pot pies, lasagna, spaghetti sauce local honey, jams, jellies, apple butter, spices, eggs, milk, butter, cheese,	**Primary Customer:** Direct to Customer, Wholesale **Customer Details:** Retirees, families with little time Local Food Hub in Charlottesville, U.S. Foods, AF, Lingley VMI, Bridgewater College W&L, Baldwin University, VA Tech **Key Partnerships:** not specified	1. Going through food safety audits 2. 6 months out for processing, at max capacity 3. A lot of farmers are afraid to take a risk -- rely on commodity, afraid of liability -- not willing to take a risk **COVID IMPACT** 1. Now trying to procure vegetables to sell 2. Saw a lot of new customers. Price was doubled at the grocery store, but we weren't putting restrictions on our products 3.Need for small processors right now is bigger than ever	1. More processing facilities 2. Improved distribution for farmers	**Features**: Food Hub Meat Processing Packaging/Distribution/Marketing Operations Retail Space for Products Sold at the Facility Value Added Processing **Other recommendations:** not specified **Location: N/A**

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
	Product Pricing Details: Brisket $8/ pound Ground beef—$5/pound **Production Supply/Demand Details:** Big demand for grab and go foods Customers prefer fresh meats **Sourcing/ Production/Distribution/Processing Details:** Meat processing occurs in house Have a delivery van for distribution		4.Deliver direct to buyers—some had fallen off due to COVID		
Farmer J **Business Model/Info:** Farm—Follow Polyface farms design Farm store Agritourism **Located** in Mt. Sydney, VA	**Produce Type:** produce, meat, other **Production Details:** grass fed beef, pastured pork and chicken, honey, eggs Annual Production: current—number of animals based on how much land we have, 25 head of cattle (looking to increase to 40), 20-40 pigs (looking to increase to 100 over next 3 years, pasture and forest finished), 300 laying hens (in spring) about 40 dozen eggs a week, 70 cows **Product Pricing Details:** not specified **Production Supply/Demand Details:** not specified **Sourcing/ Production/Distribution/Processing Details:** Self-transport of product T&E Meats processes because pork and beef have to be federally inspected, anything sold retail has to be USDA inspected Process at another local Mennonite farmer's place	**Primary Customer:** Other **Customer Details:** CSAs and DTC Supply 2 CSAs and consumers **Key Partnerships:** not specified	1. Limited by manpower 2. Processing is a big issue right now	Not specified	**Features:** Food Hub Packaging/Distribution/Marketing Operations Value Added Processing **Other recommendations:** not specified **Location:** Augusta, Rockingham, close to the line; 30 minute drive to Harrisonburg

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
Food Business A **Business Model/Info:** Food Truck + Shop at Mt. Crawford **Located in** Rockingham, Mt Crawford, VA	**Produce Type:** Other **Production Details:** Ice Cream—pints, quarts, half gallons **Product Pricing Details:** not specified **Production Supply/Demand Details:** Mt. Crawford Creamery is only so large; Derek brings in too much traffic and has to move to another farm in Bridgewater (has outgrown the current space) Demand for wholesale into stores (not enough room for production and Mt. Crawford may not be able to keep up with the demand)	**Primary Customer:** Direct to Consumer **Customer Details:** Local families and visitors of Mt. Crawford Creamery **Key Partnerships:** Mt. Crawford Creamery (runs an ice cream shop in the front)	1. False information about the negative effects of dairy and bad practices	1. People need to be educated about the health benefits of milk and local farmers' practices/treatment of animals (Farmers need an advocate) **COVID IMPACT** More Milk Purchases	**Features:** not specified **Other recommendations:** N/A **Location:** no recommendation
Food Business C **Business Model/Info:** Fine specialty food production **Located** in Swoope, VA	**Produce Type:** other **Production Details:** Spreads: (8oz);-pimento—ingredient dependency, garlic herb—can't wholesale b/c no certification Soups (28oz container); Rosemary biscuits All local products are used to make goods **Product Pricing Details**: not specified	**Primary Customer:** Wholesale **Customer Details:** Polyface is the main customer **Key Partnerships:** 1. Polyface—cooler and freezer storage for soups and spreads 2 Inn at Meadowcroft—utilizes certified kitchen (nice kitchen space, no great for large production, no processing facility**)**	1. Growing to scale	1. Ability to partner with someone and have larger scale production and get more product into the market 2. Expand product lines of soups 3. Small business marketing support	**Features:** Business Planning/Entrepreneurial Support/ Community Space; Commercial Kitchen; Cold Storage/Flash Freezer; Food Lab/Testing Kitchen; Packaging/Distribution/Marketing Operations **Other recommendations:** Large workspace—Charge an hourly rate to use Product distribution and delivery assistance **Location:** Charlottesville, would travel 30/40 minutes
Food Business D **Business Model/Info:** Two restaurants (BBQ, French) that source locally, Mustard Company **Located** in Bath, Hot Springs	**Produce Type: Produce Meat, Other** **Production Details:** Mushrooms, Grow own herbs, No local beef—issues with quality and consistency **Product Pricing Details:** 20% per night on take out **Production Supply/Demand Details**: Dietary trends—keto, gluten free	**Primary Customer:** Direct to Consumer **Customer Details:** Second home owners, tourists, locals—special occasion **Key Partnerships:** Wades Mill—flour purchases Mustard company	1. Farm to table i.e. becoming cliché and losing value **COVID IMPACT** Knocked out of the supply chain (i.e. nitro gloves) Opened a generic menu and changed steakhouse to BBQ takeout Increased shipping constraints	1. Better technology due to reliance on POS systems and online ordering	**Features:** Commercial Kitchen Food Hub Food Lab/Testing Kitchen Meat Procesesing Retail Space for Products Sold at the Facility Value Added Processing

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
	Hard to meet demand for heirloom tomatoes, turmeric, borage, field peas **Sourcing/ Production/Distribution/Processing Details:** Distribution—Sysco, US Foods, Cavalier Produce (Charlottesville); Lamb – Craigsville; Trout—VA trout company in Highland; Pork—out of North Carolina	- use a kitchen in Leesburg, VA (RC Culinary Lab) almost 4.5 hours away Rent a kitchen in WV for a day			**Other recommendations:** A warehouse with an opportunity to walk through a pick things Minimum every other day deliveries **Location:** no recommendation
Food Business E **Business Model/Info:** Small producer, cheese, Artisan style production **Located** in Staunton	**Produce Type:** Dairy **Production Details:** Purchase 150 gallons of milk a week (2 small dairies in the areas and Charlottesville food hub) **Product Pricing Details:** Premium pricing for purchases **Production Supply/Demand Details:** not specified **Sourcing/ Production/Distribution/Processing Details:** Processing occurs in the creamery	**Primary Customer:** Direct to Consumer **Customer Details:** not specified **Key Partnerships:** not specified	1. Difficult to make very consistent products in cheese making because so many variables 2. The valley is behind on a "year-round" mentality. (More seasonal	1. Shenandoah should be a culinary destination and have a unique identity. There's potential for the younger generation to think outside of the box. 2. Develop Shenandoah Valley marketing, make the community unique and differentiated **COVID IMPACT** Helped start local food drive thru—could be year round access to quality local products	**Features:** Business Planning/Entrepreneurial Support/ Community Space; Commercial Kitchen; Food Hub; Packaging/ Distribution/Marketing Operations; Training Space; Value Added Processing **Other recommendations:** Ripening room, storage facility **Location:** Charlottesville: growing urban center, possibly attracts people Staunton: central and has Polyface there which could help things move along Harrisonburg could make sense
Food Business G **Business Model/Info:** Education, Events and Production **Located** in Hightown, VA	**Produce Type:** other **Production Details:** Mostly maple syrup business and infused syrups (200—25 gallons of finished syrup) (value added products—maple vinegars, apple butter, ramp salts, shiitake mushrooms, **Product Pricing Details:** not specified **Production Supply/Demand Details:** Consumers want to support local	**Primary Customer:** Direct to Consumer, Wholesale **Customer Details:** Majority are maple syrup producers **Wholesale—**Staunton Olive Oil Company, New Beginning Farms, Polyface Farms, Carter Orchard, Old Town Butcher Shop **Key Partnerships:** Virginia Tech (educate people about maple syrup/sugar) Maple Association	Not specified **COVID IMPACT** 1. Maple Festival was cancelled 2. Reworking 10 year plan (syrup, apple butter production levels)	Not specified	**Features**: Business Planning/Entrepreneurial Support/ Community Space Commercial Kitchen; Cold Storage/Flash Freezer; Event Space; Food Hub; Packaging/Distribution/Marketing Operations; Retail Space for Products Sold at the Facility Value Added Processing **Other recommendations:** Filter press

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
	Sourcing/ Production/Distribution/Processing Details: Key distribution channels—farm tours, wholesale accounts, on-line sales Production—at home, shared kitchen, own facility (not certified kitchen), kitchen incubator, contract manufacturer				Community space—Rentable for \$20—\$25/hour **Location:** Staunton, Harrisonburg, farmers can still come get their input in and also get back to the farm or get other errands done If the location was more rural, it would leave a lot of Shenandoah folks out—people come into town, they might not want to drive to a rural location just for a meeting
Food Business H **Business Model/Info:** Herbal shop **Located i**n Staunton	**Produce Type:** other **Production Details:** Herbs, herbal teas (grown at Polyface) Sometimes sells pasta sauces, egg salad, chicken salad (under the table) All local products **Product Pricing Details:** not specified **Production Supply/Demand Details:** not specified **Sourcing/ Production/Distribution/Processing Details:** 10 farmers a week drop off products—mushrooms, trigger brothers, a honey place, a syrup, vegetable people Produced good at home because a certified kitchen is not required.	**Primary Customer:** Retail, Wholesale **Customer Details:** Wegman's and some places in DC **Key Partnerships:** AMI—cooking classes, food education, bread classes (charge a fee and sell out every time)	Have lots of vegetable farmers (because we don't do a lot of vegetables ourselves), very limited on what we can sell—anything baked or things like jams we can sell—can't serve lunch Stuff has to come from a commercial kitchen, no one has that—tried on their property but can't due to septic system and well Lots of people want to sell their stuff at her store but can't bc health requirements Many people have had to rent space out by polyface at an inn, has limited availability	1. Food transparency—People are paying more attention to what they are eating, how it affects their body and keeping themselves healthier, and how it is prepared—new people at farmers markets etc. 2. More prepared foods (soups, frozen meals) **COVID IMPACT** Local food drive thru (not through polyface), bunch of farmers that got together because covid closed farmers markets—Allegheny Mountain Institute (AMI) let people use Newtown (closed restaurant) as hub, put together an online farmers market and people can come pick up bags, getting bigger and bigger—put orders together, picked up from different farmers, packed up orders; all volunteer, located in Stanton A lot of restaurants turned to grab and go	**Features:** : Business Planning/Entrepreneurial Support/ Community Space Commercial Kitchen Event Space Packaging/Distribution/Marketing Operations; Retail Space for Products Sold at the Facility; Training Space; Value Added Processing **Other recommendations:** Indoor space for a year round farmer's market "Summer series" with food films/dinner **Location:** Staunton, It's in the middle (Rockbridge, august, nelson)—all the farmers that come to my store and surrounding counties go there (about 20 minute drive for most farmers that come to her); porch always has different products from farmers dropping stuff off
Food Hub A	**Produce Type:** Produce **Production Details:** not specified	**Primary Customer:** Wholesale **Customer Details**: Small and large farmers who want to make value added products. (200 and	1. Uncertainty around sales volumes. **COVID IMPACT** Grant Funding complexities	N/A	**Features:** Commercial Kitchen Cold Storage/Flash Freezer **Other recommendations:** N/A

Interviewee/Role	Products	Markets			Food Center Vision
		Customers/Partnerships	Challenges	Opportunity	
Business Model/Info: Non-profit, governed by volunteer board, 100% grant funded Retail, classrooms, commercial kitchen, deli counter **Located** south of Richmond (5 hour drive SE of Shenandoah Valley)	**Product Pricing Details:** not specified **Production Supply/Demand Details:** not specified **Sourcing/ Production/Distribution/Processing Details:** not specified	2000 customers/day respectively). **Key Partnerships:** Education community (two area high schools)			**Location:** no recommendation
Food Hub B **Business Model/Info:** Food delivery serving DC metro Benefit corporation **Located** in Northern VA	**Produce Type:** Produce, meat, other **Production Details:** In the fall, bringing in a lot of product from VA--- some from Carolinas up into MD, PA; in the winter, source from grower cooperatives GA, FL, citrus from TX, avocados from Peru. **Product Pricing Details:** Direct to customer side: fixed price bag for customer (point system where product is assigned a point so they don't see the price) --- new website will have a la carte pricing and will see dollar sign, will need to see the story of the growers **Production Supply/Demand Details:** Consumer interest in home delivery Not clear on demand for value added or frozen product **Sourcing/ Production/Distribution/Processing Details:** Reach is broad—MD and DC Sourcing—Broad network of growers, tiers of priority (growers local to us, small growers, independent growers then food hub partners then larger growers farther away) Have own trucks for pick up and delivery	**Primary Customer:** Retail, Wholesale **Customer Details:** Customers in MD, DC, VA Biggest wholesale customers: JMU, Whole Foods, public k-12, UVA Sell in DC, surrounding counties, Warrenton warehouse, down to Charlottesville and surrounding towns, Waynesboro, Staunton, Richmond (market we haven't grown much into) Wholesale radius is similar -- warehouses in Warrenton and Charlottesville **Key Partnerships:** Piloting w/ Hatch Kitchen in Richmond (processing tomatoes—sauce)	1. Bottleneck of meat processing	1. We worked with some organizations down in Danville area and will be bringing on a new facility on the campus of XXXX (Piedmont progressive farmers group will be a tenant in the space and will have some land for incubator farm, 4P foods will be a tenant) --- we envision a network of hubs and spokes to work together up and down the eastern seaboard --- primarily storage	**Features:** Food Hub Meat Processing **Other recommendations:** N/A **Location:** Warrenton—good distance to DC Charlottesville—food mecca

Appendix 4: Survey Template

Note: The following survey is identical to the survey that was launched in survey monkey on Sept. 15 2020. Question number, format, text and options is identical to the online version.

The Central Shenandoah Planning District Commission is conducting a feasibility study for an Agricultural Enterprise Center in the Central Shenandoah Valley. The purpose of this survey is to gather information about the food system, and how this Center could assist farmers and food businesses expand production and access new markets. Potential services include a commercial kitchen, food lab/testing kitchen, flash freeze facility, training space for smart-ag classes and seminars, a food hub that buys and sells local products, packaging and distribution operations, and business planning resources.

This survey is for farmers, food businesses and food buyers from the seven counties of:

- Augusta
- Bath
- Highland
- Page
- Rockbridge
- Rockingham
- Shenandoah

and the five cities of:

- Buena Vista
- Harrisonburg
- Lexington
- Staunton
- Waynesboro

If you are from an adjacent locality and are interested in these types of products and services in the Shenandoah Valley, you are also welcomed to take this survey.

The survey will take approximately 15-20 minutes to complete.

All responses will be used in aggregate to identify the needs, challenges and opportunities in the region surrounding local food production, sales, processing, and marketing and to inform the design of a potential Ag Enterprise Center.

The survey will be available until October 15. Please note, this is only a survey, not a reporting document or test and your responses are not binding in any way. The responses to the survey will be kept confidential and you have the option of also remaining anonymous.

Thank you in advance for your time and participation. Please forward the survey link to others who may be interested. If you have any questions, please contact Rachel Salatin, Marketing Coordinator and Project Manager for the study, Central Shenandoah Planning District Commission at rachel@cspdc.org. You can learn more about the study on the project website found here: https://www.cspdc.org/aecfs/

ALL (2 Qs)

1. Which category below describes your primary business? [select one]
   a. Farmer/producer – grows vegetables and/or raises livestock for meat, dairy, eggs, and may also sell value-added products
   b. Food business operator – makes packaged goods or value-added products, restaurant, caterer, food truck, meal delivery, brewery, distillery
   c. Food buyer – restaurant, produce auction, wholesale distributor, institutional foodservice, grocery or specialty store, large scale processor
   d. None of the above → THANK AND TERMINATE

2. Where is your farm or business located? Please enter your zip code:

IF Q1 = A, SKIP TO FARMER SECTION, IF B SKIP TO BUSINESS, IF C SKIP TO BUYER, IF D THANK AND TERMINATE.

FOOD BUYERS (16 Qs)

3. As a food buyer, which option below best describes your operation?
   a. Grocery – independent or specialty
   b. Grocery – chain
   c. Distributor – broad line
   d. Distributor – produce or specialty
   e. Institution – college or university
   f. Institution – K-12 school

g. Institution – hospital, retirement community, nursing home
h. Restaurant / café
i. Brewery or Distillery
j. Processor – proteins, value added produce, specialty goods
k. Other (Please specify)

4. What is your approximate annual spend (in dollars) in each of the following categories? Ballpark estimates are fine.
    a. Whole, fresh produce (includes vegetables, fruit, berries, etc)
    b. Processed produce (fresh cut, washed, frozen)
    c. Meat, poultry
    d. Dairy, eggs
    e. Grains
    f. Specialty Products (honey, syrup, beverages, jams etc)

5. What do you require of suppliers in terms of food safety? Choose all that apply.
    a. No requirements
    b. Must offer traceability
    c. Must pass our on-farm audit
    d. Must have on-farm food safety plan
    e. Must be GAP and/or GHP certified (for whole produce)
    f. Must be HACCP certified (for processed produce)
    g. Must be slaughtered in a USDA facility (for land-based proteins)
    h. Must be processed in an FDA inspected facility (for seafood)
    i. We depend on our distributors' requirements
    j. Other (please specify)

6. How does your organization define "local" when referring to locally grown or produced food products?
    a. Grown within a radius of 50 miles
    b. Grown within a radius of 150 miles
    c. Grown within a radius of 200 miles
    d. Grown in the Shenandoah Valley
    e. Grown in Virginia
    f. Grown in Virginia and/or adjacent states
    g. We do not specifically define local
    h. Other (please specify)

7. When purchasing agricultural products for your business, for which of the below are you willing to pay a premium?
ROTATE RANDOMLY
    a. Locally grown
    b. GAP (Good Agricultural Practices)
    c. HACCP (Hazard Analysis and Critical Control Points)
    d. Organic
    e. Naturally Grown
    f. Certified Humane
    g. American Grass Fed Association
    h. Animal Welfare Approved
    i. Food Justice Certified
    j. Non-GMO
    k. None of the above

8. Who are your primary suppliers of local farm products?
    a. Farmers
    b. Broadline distributor (i.e. Sysco, US Foods, etc.)
    c. Specialty distributor (i.e. Cavalier, etc)
    d. Food hub
    e. Agricultural cooperative
    f. Produce auctions
    g. Retailers (i.e. other grocery stores)
    h. Not applicable
    i. Other (please specify)

9. Approximately what percentage of your annual spending (in dollars) in each category below is for locally produced items? (as per your definition in Question X)?

<u><5%</u> <u>5-10%</u> <u>10-20%</u> <u>20-30%</u> <u>30-40%</u> <u>>40%</u>
<u>Prefer not to answer</u>

    a. Whole, fresh produce (includes vegetables, fruit, berries, etc)
    b. Processed produce (fresh cut, washed, frozen
    c. Meat, poultry
    d. Dairy, eggs
    e. Grains
    f. Specialty Products (sauces, honey, syrup, beverages, jams etc)

10. Approximately what percentage of your annual spending (in dollars) on food in total is for items produced in the Shenandoah Valley, specifically?

11. Below are some challenges associated with purchasing local farm products. For each one, please indicate whether you find it to be a major obstacle, a minor obstacle, or not a problem at all. [set up matrix]
    a. Pricing- product is too expensive
    b. Volume- unable to fill the quantity needed
    c. Quality- product does not meet grading standards or is inconsistent
    d. Availability- not able to consistently provide product
    e. Timing- seasonality of produce does not align with consumer demand
    f. Diversity of product- not enough selection
    g. Professional skills of suppliers- unprofessional or poor communication
    h. Effort- too much effort required on my part to find and source local
    i. Traceability – suppliers can't meet traceability requirements
    j. Packaging/Specifications – suppliers can't meet spec requirements for packaging, labeling etc.
    k. Other (please specify)

12. If it met your requirements (e.g. with respect to price, services, product set, certifications, etc.), how likely is your organization to buy from a food hub in our region?
[Extremely likely; Very likely; Somewhat likely; Not very likely; Not at all likely]
Please comment below.

Note that a regional food hub is an entity that helps wholesale buyers (restaurants, grocery stores, institutions, distributors, etc.) connect with and purchase from local producers. Food hubs can take many forms—packing houses, processing facilities, online marketplaces, etc.

13. Please expand on your response. Why are you interested? What are your main hesitations?

14. How important is it that the food hub offer each of the following products and services? [Not at all important; Not very important; Somewhat important; Very important; Extremely important]
    a. Strong brand representing agriculture in this region
    b. Offers farm-identified products
    c. Delivers orders directly to my facility
    d. Has an online ordering system
    e. Ordering can easily be done through my existing ordering process / system
    f. Offers certified organic products
    g. Offers fresh cut local produce
    h. Offers frozen local produce
    i. Offers local proteins
    j. Offers local dairy products
    k. Offers local grains
    l. Offers consistent, year round supply of the items we use most
    m. Other—Please describe below

15. Which of the following describes your preferred pricing strategy with respect to local farm products? (select all that apply)
    a. Local product pricing should match the market pricing for standard / nonlocal products
    b. We are willing to pay a premium above standard pricing for most or all local product
    c. We are willing to pay a premium above standard pricing for well branded, farm identified local product
    d. Other (please specify)

16. If your pricing and other requirements were met, what volume of the following local products would you buy from a food hub annually? <u>Please enter a dollar amount.</u>
    a. Vegetables
    b. Fruit
    c. Eggs
    d. Dairy
    e. Protein/Meat
    f. Grains
    g. Legumes
    h. Value added products
    i. Prepared foods
    j. Processed fruits and vegetables (frozen, chopped, etc.)
    k. Not applicable
    l. Other (please specify)

17. What are the top farm products you are interested in getting from local sources through a food hub? Please be specific, e.g. heirloom tomatoes, rainbow carrots, fresh cut salad greens, bulk honey, 1% milk in pints, etc.
    a. Product 1
    b. Product 2
    c. Product 3
    d. Product 4

e. Product 5

18. What additional concerns or suggestions do you want to share that can help us develop a food hub that best meets your needs?

Page Logic: End of this page, skip to Final Questions

FOOD BUSINESSES INCUBATION (15 Qs)

19. Which phrase below best describes you? Select one
    a. Operate a licensed food business
    b. Operate a food business, not licensed
    c. Ready to launch a food business
    d. Plan to start a food business in the future

IF d ASK Q23, otherwise SKIP TO Q24

20. When do you anticipate launching your food business?
    a. Within the next 6-12 months
    b. Within the next 1-2 years
    c. Within 3-5 years
    d. Not sure

21. Select the option below that best describes your food business.
    a. Specialty packaged product (i.e., jams, pickles, pasta, sausage, granola, etc.)
    b. Beverage (including beer/wine/spirits)
    c. Baked goods
    d. Prepared meals/meal kits
    e. Food truck
    f. Caterer
    g. Restaurant
    h. Other (please specify)

22. Please describe your operation. What products do you produce? If you are a farmer, please indicate the crops you are/want to begin processing.

23. Where do you currently produce your goods?
    a. At home
    b. A contract food manufacturing facility
    c. A shared kitchen / incubator kitchen
    d. A commercial kitchen
    e. I am not current producing
    f. Other (please specify)

IF Q26 = B, C OR d, ASK Q27, OTHERWISE SKIP TO Q28.

24. You indicated you use a shared kitchen/incubator kitchen or a commercial kitchen. Which specific facility(s) do you use? Please write name and location here:

25. How long have you been generating revenue?
    a. Have not yet launched
    b. <1 year
    c. 1-3 years
    d. 3-5 years
    e. 5-10 years
    f. 10+ years

26. Where do you / will you sell your products? (Select all that apply)
    a. Farmers market
    b. My own store, restaurant, or food truck
    c. My farm stand or CSA
    d. My E-commerce shop
    e. Retailers, grocery stores, cooperatives
    f. Online grocers
    g. Restaurants and cafes
    h. Institutions (schools, hospitals, etc.)
    i. Distributors
    j. Food hubs
    k. Other (please specify)

27. When purchasing agricultural products for your business, for which of the below are you willing to pay a premium?

ROTATE RANDOMLY

    a. Locally grown
    b. GAP (Good Agricultural Practices)
    c. HACCP (Hazard Analysis and Critical Control Points)
    d. Organic
    e. Naturally Grown
    f. Certified Humane
    g. American Grass Fed Association
    h. Animal Welfare Approved
    i. Food Justice Certified
    j. Non-GMO
    k. None of the above
    l. Other (please specify)

28. How does your organization define "local" when referring to locally grown or produced food products?
    i. Grown within a radius of 50 miles
    j. Grown within a radius of 150 miles
    k. Grown within a radius of 200 miles
    l. Grown in the Shenandoah Valley
    m. Grown in Virginia
    n. Grown in Virginia and/or adjacent states

o. We do not specifically define local
p. Other (please specify)

29. Who are your primary suppliers of local farm products?
    a. Farmers
    b. Traditional Wholesalers (i.e. Sysco, US Foods, etc.)
    c. Food Hub
    d. Agricultural Cooperative
    e. Produce auctions
    f. Retailers (i.e. other grocery stores)
    g. Not applicable
    h. Other (please specify)

30. Approximately what percentage of your annual spending (in dollars) on food ingredients is from items produced in the Shenandoah Valley, specifically?

31. Below are some challenges associated with purchasing local farm products. For each one, please indicate whether you find it to be a major obstacle, a minor obstacle, or not a problem at all. [set up matrix]
    a. Pricing- product is too expensive
    b. Volume- unable to fill the quantity needed
    c. Quality- product does not meet grading standards or is inconsistent
    d. Availability—not able to consistently provide product
    e. Timing- seasonality of produce does not align with consumer demand
    f. Diversity of product- not enough selection
    g. Professional skills of suppliers- unprofessional or poor communication
    h. Effort- too much effort required on my part to find and source local
    i. Traceability – suppliers can't meet traceability requirements
    j. Packaging/Specifications – suppliers can't meet spec requirements for packaging, labeling etc.
    k. Other (please specify)

32. If your pricing and other requirements were met, what volume of the following products <u>would you</u> buy from local producers annually? <u>Please enter a dollar amount</u>
    a. Vegetables
    b. Fruit
    c. Eggs
    d. Dairy
    e. Meat/Poultry
    f. Grains
    g. Legumes
    h. Value added products
    i. Prepared foods
    j. Processed fruits and vegetables (frozen, chopped, etc.)
    k. Not applicable
    l. Other (please specify)

33. Would you be interested in access to skills training, services, or education related to general and specialty meat processing applications? Please indicate which, if any, appeal to you. (Select all that apply)
    a. General meat fabrication, cutting, and processing classes or skills training
    b. Access to services that offer general meat fabrication, cutting or processing for your animal products
    c. Access to services that offer specialty meat preparations (smoking, curing, sausage, charcuterie, aging) for your animal products
    d. Specialty meat preparation classes or skills training (smoking, curing, sausage, charcuterie, aging)
    e. Other (please specify)

Page Logic: End of this page, skip to Commercial Kitchen Questions

FARMER/PRODUCER (23 Qs)

34. How many years have you been farming?
    a. <5
    b. 6-10
    c. 11-20
    d. 21+
    e. Prefer not to say

35. Is farming your primary occupation?
    a. Yes
    b. No, I have a full time job off the farm
    c. No, my spouse has a full time job off the farm
    d. I'm retired
    e. I'd prefer not to say
    f. Other

36. What volume of each of the following do you currently grow or produce on your farm, annually? Please use pounds where appropriate. If you do not wish to share specific volumes, please simply

put an “x” next to those products produced on your farm.

a. Vegetables (lbs)
b. Fruits (lbs)
c. Eggs (doz)
d. Dairy (milk, cheese, other) (gals, lbs)
e. Meat (beef, pork, lamb, poultry) (lbs)
f. Grains (bushels or lbs)
g. Legumes (lbs)
h. Value added products (cases, pallets, jars, lbs, etc)
i. Processed fruits and vegetables (frozen, chopped etc.))
j. Other (please specify)

37. Approximately how many acres of fresh fruits and vegetables do you farm?
a. <4
b. 5-9
c. 10-24
d. 25-49
e. 50-99
f. 100+
g. Not applicable

38. What are your preferred crops to grow?

39. What crops and other farm products are you currently not producing, but are interested in adding to your operation within the next five years?

40. How would you describe your production practices? (Select all that apply)
a. Conventional
b. Chemical free/naturally grown
c. Organic methods, not certified
d. Pasture based
e. Biodynamic
f. Permaculture
g. Regenerative Agriculture
h. Hydroponic
i. I would prefer not to answer
j. Other (please specify)

41. Do you have a written food safety plan for your farm?
a. Yes
b. No

42. Which of the following certifications do you have? (Select all that apply)
a. GAP (Good Agricultural Practices)
b. HACCP (Hazard Analysis and Critical Control Points) Organic
c. Organic
d. Naturally Grown
e. Virginia Grown
f. Certified Humane
g. American Grass Fed Association
h. Animal Welfare Approved
i. Food Justice Certified
j. Non-GMO
k. I do not have any certifications.
l. Other (please specify)

IF Q48 = a, SKIP TO Q51, IF Q48=C, SKIP TO Q50

43. Approximately what percentage of your farm output (in pounds) is certified organic?
a. None
b. <25%
c. 25-50%
d. 50-75%
e. >75%
f. All

44. GAP stands for USDA's Good Agricultural Practices and is required by some buyers. To become certified, you submit to voluntary audits that verify that fruits and vegetables are produced, packed, handled, and stored as safely as possible to minimize risks of microbial food safety hazards.

If there were reliable demand, would you consider getting GAP certified so that you could sell into a local food hub?
a. Yes
b. No
c. Maybe

45. What would you need to become GAP certified?

46. Below are some barriers that might prevent you from reaching your farm production and business goals. Please indicate which, if any, apply to you. (Select all that apply)
ROTATE RANDOMLY
a. Availability/cost of suitable land
b. Availability of labor
c. Access to capital
d. Customer knowledge/awareness of local food production

e. Fair pricing
f. Financial management and/or recordkeeping
g. Production equipment (tilling, planting, weeding, harvesting)
h. Difficulties finding and/or negotiating with buyers
i. Knowledge of government grants and programs
j. Knowledge of and/or equipment for post-harvest handling (grading, cooling, washing, packing)
k. Concerns about and labor required for food safety requirements including FSMA and GAP
l. Delivery cost/logistics
m. Shipping cost/packaging
n. Lack of processing capacity
o. Lack of adequate slaughter and meat processing facilities
p. Management skill to run a larger operation
q. Weather, i.e. extreme events such as flood, drought, tornados, or seasonal changes

47. Approximately what percentage of your gross income from farming operations in 2019 was through each of the following channels? Please enter percentages as whole numbers (e.g. enter 20 to denote 20%)
a. Farm stand / on farm retail (includes direct to individual customers)
b. CSA
c. Farmers Market
d. Broker
e. Direct sales to other farm stands/farm stores
f. Shipping off farm direct sales
g. grocery stores
h. Restaurants
i. Institutions (schools, hospitals, etc.)
j. Wholesalers, distributors, or food hubs

48. Are you interested in starting to sell into or /expanding current sales with buyers such as small or large grocery stores, restaurants, schools, hospitals, and/or distributors (any buyer that is not an end-consumer)?
a. Yes
b. Maybe, if certain barriers are removed or conditions are met
c. No

49. Below are some potential challenges that might prevent you from entering or increasing participation in these non-direct-to-consumer channels. For each one, please indicate whether you find it to be a major obstacle, a minor obstacle, or not a problem at all. [set up matrix]
ROTATE RANDOMLY
a. Volume – having enough product to fill orders
b. Land access – availability and/or cost
c. Pricing – receiving too low a price
d. Labor – availability/skill
e. Distribution/transportation – cost and/or complex logistics
f. Capital – ability to cover upfront expense of land, labor, or raw materials
g. Accessibility—unsure how to meet or negotiate with buyers
h. Requirements—unable or unsure about meeting standards for quality, handling, packaging, service, or certifications
i. Meat Processing—lack of access or inadequate slaughterhouse capacity
j. Produce Processing – lack of access or inadequate or vegetable/fruit processing
k. Other

50. Would you be interested in facilities that would allow for any of the following specialty meat processing applications? Please indicate which, if any, appeal to you. (Select all that apply)
a. Meat fabrication – large animal breakdown (farm: cow, chicken, goat, lamb)
b. Meat fabrication – seasonal wild game breakdown (game: deer, game bird, rabbit)
c. Specialty meat cutting – retail/wholesale cuts
d. /Curing
e. Sausage Making and/or Charcuterie
f. Aging (Dry/Wet)
g. Other

51. Would you be interested in access to skills training, services, or education related to general and specialty meat processing applications? Please indicate which, if any, appeal to you. (Select all that apply)
a. General meat fabrication, cutting, and processing classes or skills training
b. Access to services that offer general meat fabrication, cutting or processing for your animal products
c. Access to services that offer specialty meat preparations (smoking, curing, sausage, charcuterie, aging) for your animal products
d. Specialty meat preparation classes or skills training (smoking, curing, sausage, charcuterie, aging)
e. Other

52. Which of the following distribution strategies do you employ on your farm? Select all that apply.
   a. Personal vehicles (car, van, pick-up truck)
   b. We sell only at the farm
   c. Refrigerated vehicle
   d. Buyer picks up
   e. We ship our product
   f. Not applicable
   g. Other (please specify)

53. What ideas do you have that would reduce the barriers to selling locally grown and raised products from the Shenandoah Valley into new or existing markets?

FOOD HUB QUESTIONS (10 Qs)

A regional food hub is an entity that helps connect agricultural producers with new markets and sales channels within the region, and helps wholesale buyers (restaurants, grocery stores, institutions, distributors) purchase from local producers. It helps strengthen farms' financial viability and increase consumption of locally produced products.

Food hubs can take many forms. In Michigan, Cherry Capital sells and distributes Michigan-grown products which are aggregated at their warehouses and distributed by their fleet of vehicles to grocery stores and distributors across the state. Lancaster Farm Fresh is a farmer-owned cooperative of 100+ growers that operates both a CSA service and a wholesale business serving restaurants and institutional buyers from New York to Washington D.C. Farm Fresh Rhode Island connects growers and restaurants through an online marketplace.

54. If a food hub were established in this region that offered the specific services you need and met your requirements regarding price, product set, certifications, etc. how interested would you be in working with it?
   a. Very interested
   b. Somewhat interested
   c. Not very interested
   d. Not at all interested

IF Q58 = a OR b, ASK Q59 AND THEN SKIP TO Q61.
IF Q58 = c OR d, SKIP TO Q60 AND THEN SKIP TO COMMERCIAL KITCHEN QUESTIONS

55. What appeals to you most about working with a regional food hub?

56. What would make a regional food hub more appealing to you?

57. Below is a list of services that a regional food hub might offer. For each one, please indicate how important it would be to you. [not at all important, not very important, somewhat important, very important]
   ROTATE RANDOMLY
   a. Pick-up service
   b. Quick cooling service to remove field heat
   c. Washing, grading and/or packing services
   d. Bulk purchasing of packaging, boxes, containers
   e. cold or frozen storage service
   f. Contract manufacturing services for my products
   g. Access to a kitchen where I can process my farm products
   h. Wholesale readiness training
   i. Ensures farm- identification
   j. Low-cost short- term financing for production expenses
   k. An online marketplace where I can post my products for buyers to view/purchase
   l. Coordinates preseason crop planning between buyers and producers
   m. Business/Entrepreneur training
   n. Other (please specify)

58. What percentage of your current and potential production (in pounds) would you be interested in selling through a food hub? Write percentage here.

59. If your pricing and other requirements were met, what type and volume of products would you sell to a food hub? For example:

   Apples, 10,000 lbs per year
   Cattle, 5 head per year

   Please consider produce, proteins, dairy, grain and other goods. Please also consider existing and new crop types or volumes which you might add in the next two years.
   a. Product 1
   b. Product 2
   c. Product 3

d. Product 4
e. Product 5

60. Please indicate the extent to which you agree with the following statements related to pricing.
    a. I must receive prices that are equal to or greater than prices I am currently receiving for my goods
    b. I am willing to accept lower prices as long as the volume is high enough (please provide more detail in comments)
    c. I am willing to accept lower prices if the food hub takes on sales, marketing and distribution
    d. I will set my own prices based on my cost of production
    e. It is important to me that there is complete price transparency across the supply chain
    f. I am open to negotiating price on an ongoing basis based on the market
    g. I am willing to accept lower prices for some product to support healthy food access (including selling to customers that are price constrained, such as public schools and food banks)
    Comments

61. Do you currently have access to the following infrastructure and if so, would you be willing to share with other growers/producers for a fee? [I have access but not to share; I have and would share for a fee; I don't have but need; I don't have, don't need; N/A]
    a. Refrigerated truck(s) for deliveries
    b. Access to quick cooling to remove field heat
    c. Cold storage space
    d. Packing shed
    e. Washing station
    f. Dry storage
    g. Chopping equipment
    h. Certified kitchen
    i. Slaughter facilities
    j. Meat processing equipment

62. How far would you be willing to travel each way to a food hub? Please provide your answer in miles.

63. Please provide any additional comments, concerns or questions that should be considered when assessing the potential success of a food hub in this region.

COMMERCIAL KITCHEN QUESTIONS (13 Qs)

A shared-use kitchen is a certified commercial kitchen in which individuals or businesses prepare value-added food products and meals, often paying an hourly or daily rate to lease a space shared by others. These spaces are most often used by culinary or packaged food entrepreneurs and can have positive social, economic, and health impacts on a community.

The term shared-use kitchen is sometimes used synonymously with commercial kitchen, certified kitchen, kitchen incubator / incubator kitchen, food business accelerator, commissary kitchen, community kitchen, etc. although each one offers a different array of services.

The following questions will be used to inform what services and features a potential commercial kitchen should provide at an Agricultural Enterprise Center in the Shenandoah Valley.

64. Assuming it met your requirements with respect to availability / timeline, pricing and facility features, how interested would you be in producing your goods out of a new commercial kitchen?
    a. Very interested
    b. Somewhat interested
    c. Not very interested
    d. Not at all interested

    Please comment on your above response. What makes you most excited about the potential to operate in a new commercial kitchen? Or, why is it not of interest to you at this time?

NOT INTERESTED GO TO END OF SURVEY

65. What are your requirements with respect to the following? Select all that apply.
    a. Special access hours (i.e. 24-hour access, night access, daytime only, weekend access)
    b. Specialized equipment – kitchen production
    c. Specialized equipment – food manufacturing
    d. Cold storage square footage or pallet space
    e. Freezer storage square footage or pallet space
    f. Dry storage square footage or pallet space
    g. Access to a loading dock
    h. Proximity to public transportation
    i. Proximity to highways
    j. Allergen free area
    k. Access to a food lab/testing kitchen

l. An area to meet with customers for tastings or demos
m. Private production space that only I can access
n. Access to co-packing service that processes my products according to my specifications
o. Other

66. Which of the following processing techniques do you employ?
  a. Assembly of dry ingredients
  b. Bottling
  c. Braising
  d. Canning or preserving in jars
  e. Cutting, slicing, shredding of fresh produce
  f. Drying, dehydration
  g. Fermenting
  h. Freezing – blast chiller
  i. Juicing
  j. Milling
  k. Grinding
  l. Specialty Cooking (e.g. largescale braising, roasting, steaming)
  m. Baking
  n. Smoking
  o. Other

67. Do you need access to automated packaging equipment? Select all that apply
  a. VFFS (volumetric fillers)
  b. Bottling (automated line/machinery)
  c. Augur line (package fill and close machinery)
  d. Form, Fill, and/or Seal machinery (FFS)
  e. Seamer/Shrinker machinery
  f. Pack, Bale, and/or Palletize machinery
  g. Checkweigher machinery
  h. N/A
  i. Other

68. Is your business or product seasonal? If so, please check the months of the year during which you are in production.
  a. January
  b. February
  c. March
  d. April
  e. May
  f. June
  g. July
  h. August
  i. September
  j. October
  k. November
  l. December

69. On average, during the months you are active, how many hours per week are you in production?

70. On average, when you are in production, how many people do you have in the kitchen (including yourself)?

71. What pricing structure(s) would you be open to? Select all that apply. [matrix: would not consider, would consider, would prefer]
  a. Hourly fee for kitchen use and monthly fee for storage unit
  b. Monthly fee for a set number of hours and storage capacity
  c. Annual fee for unlimited hours and set storage capacity
  d. Other (please specify)

72. If the commercial kitchen charged for each hour you utilized the kitchen, at what hourly rate (in dollars) would you consider it a bargain, a good value, too expensive or too inexpensive (put hourly rate below): (>$10 thru $45 in a matrix)
  a. >$10
  b. 10
  c. 15
  d. 20
  e. 25
  f. 30
  g. 35
  h. 40
  i. 45

73. What is your current annual production volume? Answer in whatever units you typically use to assess your production (i.e. cases, pounds, units, pallets etc.))

74. How far would you be willing to travel each way to a commercial kitchen? Please provide your answer in miles.

75. We are considering providing commercial kitchen clients or members of the Agricultural Enterprise Center with technical assistance and training services to help them successfully grow their business. How valuable would training and support in each of the following areas be for your

business (either in the form of 1-1 mentorship and/or classes)?

[Not at all valuable, Not very valuable, Somewhat valuable, Very valuable]

ROTATE RANDOMLY

a. General business strategy support / business plan development
b. Accounting and bookkeeping
c. Branding and marketing
d. Sales support, access to buyers
e. Inventory management
f. Navigating food safety requirements
g. Hiring, human resources and/or access to shared labor
h. Fundraising and valuation
i. Distribution
j. Local sourcing
k. Collective purchasing
l. Being part of a food business community
m. Other (please specify)

76. Please share any additional thoughts or any questions you have about the development of a commercial kitchen in your region.

FINAL QUESTIONS (6 Qs)

77. How would you describe the market in the Shenandoah Valley for locally grown and raised products? Please rate the following statements from agree to disagree. [Disagree, Neutral, Agree]

ROTATE RANDOMLY

a. Shoppers and diners seek out locally produced products
b. Shoppers and diners are willing to pay more for locally produced products.
c. Shoppers and diners who reside in the Shenandoah Valley need education on the value of buying locally produced food.
d. Institutional buyers seek out locally produced products.
e. Institutional buyers are willing to pay more for locally produced products.
f. Farmers can sell large quantities of locally produced products.
g. Farmers can grow and sell a diverse set of products.
h. Farmers have access to a diverse customer base.
i. The demand for local product exceeds supply.

78. Where is the ideal location of this proposed facility and why? (Describe location/city, specific site, or an existing facility/building etc.))

79. Below are potential shared-use spaces that could exist within the Center. For each one, please indicate your level of interest in their presence or utilization. [Not interested, Somewhat interested, Very interested, N/A]

a. Large gathering/event space used for public events, fairs, lectures, conferences
b. Shared office space
c. Private office space
d. Classroom for food and ag related activities, seminars, trainings
e. Event space for private functions (reunions, parties, etc.)
f. Other (please share your additional ideas)

80. The CSPDC will be hosting a virtual meeting to discuss the results of this survey, potential plans for an Agricultural Enterprise Center and gain additional feedback. Please select the following as it relates to your participation in this meeting [approximately 1.5-2 hours].

a. I am interested in participating regardless of timing
b. I am interested in participating if the meeting is during the work day
c. I am interested in participating if the meeting is in the evening
d. I am not interested in participating in the meeting

81. If you selected yes to the above or if you would like to be added to a contact list for this project, please provide your contact information below.

a. Name
b. Company
c. Email
d. Phone

82. By checking this box, you are acknowledging that your responses to this survey, including any proprietary, privileged, or confidential information, WILL NOT be publicly disclosed. Summary findings of the surveyed population may be shared publicly, but will not reveal information identifiable to individual farm or business operations.

- Yes

Appendix 5: Primary Research Analysis – Full Survey Results

Q1: Primary Business	Count	%
Farmer/producer	59	74%
Food Business Operator	12	15%
Food Buyer	9	11%
Total Respondents	**80**	

Q2: Zip Code	Count	%
20105	1	1%
20175	1	1%
20187	1	1%
22123	1	1%
22602	1	1%
22603	1	1%
22645	1	1%
22654	1	1%
22660	1	1%
22664	4	5%
22801	2	3%
22802	4	5%
22821	1	1%
22824	3	4%
22832	2	3%
22834	2	3%
22835	3	4%
22841	2	3%
22844	2	3%
22853	1	1%
22902	1	1%
22932	1	1%
22967	2	3%
22971	1	1%
22980	2	3%
24090	1	1%
24122	1	1%
24401	5	6%
24416	2	3%
24421	2	3%

24431	1	1%
24432	1	1%
24433	1	1%
24435	1	1%
24437	1	1%
24450	6	8%
24460	1	1%
24465	4	5%
24467	1	1%
24472	3	4%
24477	2	3%
24479	1	1%
24482	2	3%
24484	1	1%
24578	1	1%
Total Respondents	**80**	

Q3: Food Buyer Operation	Count	%
Distributor – produce or specialty	2	22%
Grocery – independent or specialty	4	44%
Restaurant / café	3	33%
Total Respondents	**9**	

Q4: Annual Spending ($)	Total	Average
Whole, fresh produce	$ 1,054,000.00	$ 117,111.11
Processed produce (fresh cut, washed, frozen, etc)	$ 14,500.00	$ 1,611.11
Meat, poultry	$ 626,300.00	$ 78,287.50
Dairy, eggs	$ 1,296,400.00	$ 144,044.44
Grains	$ 43,300.00	$ 5,412.50
Specialty products (sauces, honey, syrup, beverages, jams etc)	$ 347,000.00	$ 38,555.56
Total Respondents	**9**	

Q5: Supplier Requirements—Buyers	Count	%
No requirements	0	0%
Must offer traceability	4	44%
Must pass our on-farm audit	0	0%
Must have on-farm food safety plan	3	33%
Must be GAP and/or GHP certified (for whole produce)	1	11%
Must be HACCP certified (for processed produce)	2	22%

Must be slaughtered in a USDA facility (for land-based proteins)	4	44%
Must be processed in an FDA inspected facility (for seafood)	1	11%
We depend on our distributors' requirements	5	56%
Other (please specify)	0	0%
Total Respondents	**9**	

Q6: "Local" Definition—Buyers	Count	%
Grown in Virginia	5	56%
Grown within a radius of 50 miles	1	11%
Grown within a radius of 150 miles	1	11%
Grown in Virginia and/or adjacent states	2	22%
Total Respondents	**9**	

Q7: Willing to Pay Premium—Buyers	Count	%
Locally grown	5	56%
GAP (Good Agricultural Practices)	0	0%
HACCP (Hazard Analysis and Critical Control Points)	0	0%
Organic	5	56%
Naturally Grown	2	22%
Certified Humane	2	22%
American Grass Fed Association	1	11%
Animal Welfare Approved	2	22%
Food Justice Certified	1	11%
Non-GMO	3	33%
None of the above	0	0%
Other (please specify)	0	0%
Total Respondents	**9**	

Q8: Primary Suppliers—Buyers	Count	%
Farmers	7	78%
Broadline distributor (i.e Sysco, US Foods etc.)	3	33%
Specialty distributor (i.e. Cavalier etc)	3	33%
Food hub	3	33%
Agricultural cooperative	3	33%
Produce auctions	4	44%
Retailers (i.e. other grocery stores)	2	22%
Not applicable	0	0%
Other (please specify)	0	0%
Total Respondents	**9**	

Q9: Percentage of Annual Spending ($)		Count
Whole, fresh produce	0-5%	1
	5-10%	0
	10-20%	1
	20-30%	0
	30-40%	0
	40+%	6
	N/A	1
Processed produce (cut, frozen)	0-5%	3
	5-10%	1
	10-20%	1
	20-30%	0
	30-40%	0
	40+%	1
	N/A	3
Meat, poultry	0-5%	0
	5-10%	3
	10-20%	0
	20-30%	2
	30-40%	1
	40+%	2
	N/A	1
Dairy, eggs	0-5%	1
	5-10%	1
	10-20%	2
	20-30%	0
	30-40%	1
	40+%	3
	N/A	1
Grains	0-5%	2
	5-10%	1
	10-20%	1
	20-30%	0
	30-40%	1
	40+%	0
	N/A	4
Specialty products (sauces, honey, syrup, beverages, jams, packaged goods, etc)	0-5%	1
	5-10%	1
	10-20%	2
	20-30%	0
	30-40%	1

	40+%	4
	N/A	0
Total Respondents		**9**

Q10: Percentage of Annual Spending ($) on items produced in Shenandoah Valley—Buyers	**%**
Average	33%
Other responses:	60,000 lbs
	$50,000
	not sure
Total Respondents	**9**

Q11: Challenges Buying Local—Buyer	**Major obstacle**	**Minor obstacle**	**Not an obstacle**
Pricing—product is too expensive	4	3	2
Volume—unable to fill the quantity needed	1	7	1
Quality—product does not meet standards or is inconsistent	2	1	6
Availability—not able to consistently provide product	2	3	4
Timing—seasonality of produce does not align with consumer demand	1	4	4
Diversity of product—not enough selection	1	3	5
Professional skills of suppliers—unprofessional or poor communication	1	3	5
Effort—too much effort required on my part to find and source local	0	6	3
Traceability—suppliers can't meet traceability requirements	1	2	6
Packaging/Specifications—suppliers can't meet spec requirements for packaging, labeling, etc	1	2	6
Other (please specify)	0	0	0
Total Respondents	**9**		

Q12: Likeliness to Buy From a Food Hub	**Count**	**%**
Extremely likely	1	11%
Very likely	3	33%
Somewhat likely	1	11%
Not very likely	4	44%
Total Respondents	**9**	

Q13: Comments on Buying From a Food Hub
Corporate restrictions
I would like to support local farmers that meet my needs and requirements for healthy practices and products.
Too expensive.

We already connect with 25 plus farmers/producers here in the Valley to market their milk, cheese, eggs, produce. A Food Hub could have the potential of destroying the marketing/relationship that we worked hard to build for our farmers to connect them with market buyers. I do feel a processing facility could have very positive results—a way to preserve food for year-round sales. The Shenandoah Valley is known for good quality produce, but this also attaches a higher price point to the produce. Will this type of price point be feasible to be processed and still marketable? Will the local farmers be willing to produce volume for a lower price point?
Price, volume, and quality
We already have good local producers, but a hub may open up other possibilities and perhaps offer more competitive prices
State procurement guidelines may restrict
It's convenient
We currently already partner with food hubs that share our values to offset seasonality issues across state lines.

Q14: Importance of Food Hub's Products/Services—Buyer	Very important	Somewhat important	Not very important	Not at all important	N/A
Strong brand representing agriculture in this region	4	0	1	0	0
Offers farm-identified products	4	0	1	0	0
Delivers orders directly to my facility	3	2	0	0	0
Has an online ordering system	3	2	0	0	0
Ordering can easily be done through my existing ordering process / system	2	1	0	0	2
Offers certified organic products	2	2	1	0	0
Offers fresh cut local produce (fresh cut, frozen, etc)	2	1	1	1	0
Offers frozen local produce	1	0	2	1	1
Offers local proteins	4	0	1	0	0
Offers local dairy products	5	0	0	0	0
Offers local grains	3	0	1	0	1
Offers consistent, year-round supply of the items we use most	4	1	0	0	0
Other (please describe below)	0	0	0	0	0
Total Respondents	**5**				

Q15: Preferred Pricing Strategy	Count	%
Local product pricing should match the market pricing for standard/non local products	1	20%
We are willing to pay a premium above standard pricing for most or all local product	3	60%
We are willing to pay a premium above standard pricing for well-branded, farm identified local product	2	40%
Other (please specify)	0	0%
Total Respondents	**5**	

Q16: Volume ($) Potentially Bought from a Food Hub—Buyers	Total	Average
Vegetables	$ 131,000.00	$ 26,200.00
Fruit	$ 95,500.00	$ 19,100.00
Eggs	$ 15,500.00	$ 3,100.00
Dairy	$ 21,600.00	$ 4,320.00
Protein/Meat	$ 16,300.00	$ 3,260.00
Grains	$ 6,600.00	$ 1,320.00
Legumes	$ 4,600.00	$ 920.00
Value added products	$ 26,200.00	$ 5,240.00
Prepared foods	$ 5,300.00	$ 1,060.00
Processed fruits and vegetables (frozen, chopped, etc.)	$ 2,300.00	$ 460.00
Not applicable	$—	$—
Other (please specify)	$—	$—
Total Respondents	**5**	

Q17: Top (5) Local Products Interested In	Count
Vegetable/Fruit	12
Dairy	2
Protein/Meat	3
Eggs	2
Grains/Legumes	1
Value added/Processed	2
Total Respondents	**5**

Q18: Concerns/Suggestions for Food Hub
Make use of existing store fronts or venues for deliveries (like Friendly City and farmer's markets
Transparency—Not mixing local with non-local

Q19: Which Best Describes Your Operation	Count	%
Operate a licensed food business	11	92%
Operate a food business, not licensed	1	8%
Total Respondents	**12**	

Q20: Food Business Launch Date
No responses

Q21: Food Business Operation	Count	%
Baked goods	1	8%
Caterer	1	8%
Restaurant	3	25%
Retail/Store	2	17%
Specialty packaged product (i.e., jams, pickles, pasta, sausage, granola, etc.)	5	42%
Total Respondents	**12**	

Q22: Describe Your Business
We own/operate Virginia's oldest operating commercial grist mill, stone-grinding local and regional wheat, buckwheat, rye and four varieties of corn into flours, grits, cornmeal and using our grains in a range of 15 specialty mixes.
Country diner and bakery that offers homemade honey, wild mushrooms and other manufactured foods.
full service farm to cater; weekly packaged meal delivery; baker; community activist; bartender
full service grocery store with produce, meat, packaged grocery, dairy, frozen foods, beer/wine/mead/cider, wellness, beauty care, general merchandise, deli, bakery, prepared foods
BBQ. USDA inspected wholesale bottling (BBQ Sauce and Rub).
We make homemade ice cream and sorbet using locally grown ingredients.
Apple cider mustard, apple cider syrup, gf & vegan cake mixes, birdseed wreaths. Also offer co-packing of gf flour mixes
Grower of 12 varieties of habanero peppers. Makers of 12 varieties of hot sauce.
I bake a variety of breads and pastries including bagels, donuts, artisan breads such as baguettes, focaccia, sourdough (soon), variety of cookies and cakes. My goal is to open a bakery in my area.
adding value to Grade A cow milk
We make/sell smoked sausages and frozen meals using local meat and other ingredients
process livestock (make sausage, ground beef, steaks, chops, etc)

Q23: Production Location	Count	%
A commercial kitchen	6	50%
A contract food manufacturing facility	2	17%
At home	4	33%
Total Respondents	**12**	

Q24: What shared kitchen/incubator kitchen/commercial kitchen do you use	Count
White's Wayside—Churchville	1
commercial kitchen for business located in Lexington	1
Friendly City Food Co-op, Harrisonburg, VA	1
Shaffer's BBQ Middletown	1
Smiley's Ice Cream, Mount Crawford, VA	1
Henry's Hot Sauce, Basye, VA	1
My own commercial kitchen. Swover Creek Farms, Edinburg VA	1
Gore's Meat Processing, Inc.	1
Total Respondents	**8**

Q25: Years Generating Revenue	Count	%
<1 year	1	8%
3-5 years	2	17%
5-10 years	4	33%
10+ years	5	42%
Total Respondents	**12**	

Q26: Selling Location	Count	%
Farmers market	5	42%
My own store, restaurant, or food truck	9	75%
My farm stand or CSA	2	17%
My E-commerce shop	7	58%
Retailers, grocery stores, cooperatives	7	58%
Online grocers	1	8%
Restaurants and cafes	5	42%
Institutions (schools, hospitals, etc.)	1	8%
Distributors	5	42%
Food hubs	2	17%
Other (please specify)	1	8%
Total Respondents	**12**	
Other: direct service off site		

Q27: Willing to Pay Premium—Business	Count	%
Locally grown	11	92%
GAP (Good Agricultural Practices)	4	33%
HACCP (Hazard Analysis and Critical Control Points)	4	33%
Organic	4	33%
Naturally Grown	4	33%
Certified Humane	2	17%
American Grass Fed Association	2	17%
Animal Welfare Approved	3	25%
Food Justice Certified	2	17%
Non-GMO	6	50%
None of the above	1	8%
Other (please specify)	4	33%
Total Respondents	**12**	
Other:		
heritage/heirloom grains		
I'd rather not pay a premium. I would like to see these become the norm.		
Know the farms		

Q28: "Local" Definition—Business	Count	%
Grown within a radius of 50 miles	2	17%
Grown within a radius of 150 miles	1	8%
Grown within a radius of 200 miles	1	8%
Grown in Virginia	4	33%
Grown in Virginia and/or adjacent states	1	8%
We do not specifically define local	3	25%
Total Respondents	**12**	

Q29: Primary Suppliers—Business	Count	%
Farmers	11	92%
Broadline distributor (i.e Sysco, US Foods etc.)	1	8%
Specialty distributor (i.e. Cavalier etc)	5	42%
Food hub	2	17%
Agricultural cooperative	1	8%
Produce auctions	2	17%
Retailers (i.e. other grocery stores)	5	42%
Not applicable	0	0%
Other (please specify)	2	17%
Total Respondents	**12**	
Other:		
Costco, Walmart for non farm products		
direct from supplier/producer (like cheese and pasta)		

Q30: Percentage of Annual Spending ($) on items produced in the Shenandoah Valley—Business	Count	%
0%	1	8%
20%	5	42%
35%	2	17%
50%	1	8%
60%	1	8%
75%	1	8%
80%	1	8%
Average	36.25%	
Total Respondents	**12**	

Q31: Challenges Buying Local—Business	Major obstacle	Minor obstacle	Not an obstacle
Pricing—product is too expensive	2	7	3
Volume—unable to fill the quantity needed	3	8	1
Quality—product does not meet standards or is inconsistent	1	7	4
Availability—not able to consistently provide product	4	8	0
Timing—seasonality of produce does not align with consumer demand	4	4	4
Diversity of product—not enough selection	2	5	5
Professional skills of suppliers—unprofessional or poor communication	0	6	6
Effort—too much effort required on my part to find and source local	2	7	3
Traceability—suppliers can't meet traceability requirements	1	2	9
Packaging/Specifications—suppliers can't meet spec requirements for packaging, labeling, etc	0	5	7
Other (please specify)	2		
Total Respondents	**12**		
Other:			
There's a lack of education about how to find and source local products			
transportation			

Q32: Volume ($) Potentially Bought from a Food Hub—Business	Total	Average
Vegetables	$ 138,150.00	$ 17,268.75
Fruit	$ 142,800.00	$ 15,866.67
Eggs	$ 66,300.00	$ 7,366.67
Dairy	$ 160,300.00	$ 22,900.00
Protein/Meat	$ 151,150.00	$ 18,893.75
Grains	$ 25,300.00	$ 3,614.29
Legumes	$ 10,300.00	$ 1,287.50
Value added products	$ 33,100.00	$ 4,137.50
Prepared foods	$ 20,000.00	$ 2,500.00
Processed fruits and vegetables (frozen, chopped, etc.)	$ 30,200.00	$ 4,314.29
Not applicable	1	
Other (please specify)	2	
Total Respondents	**9**	

Q33: Interested in Specialty Meat Processing Applications—Business	Count	%
General meat fabrication, cutting, and processing classes or skills training	4	36%
Access to services that offer general meat fabrication, cutting or processing for your animal products	2	18%
Access to services that offer specialty meat preparations (smoking, curing, sausage, charcuterie, aging) for your animal products	4	36%
Specialty meat preparation classes or skills training (smoking, curing, sausage, charcuterie, aging)	5	45%
Not applicable	2	18%
Other (please specify)	3	27%
Total Respondents	**11**	
Other: Access to steam kettle & operator		

Q34: Years Farming	Count	%
0-5	9	15%
6-10	16	27%
11-20	11	19%
21+	23	39%
Total Respondents	**59**	

Q35: Is Farming your Primary Occupation	Count	%
Yes	27	46%
No, I have a part-time job off the farm	9	15%
No, I have a full-time job off the farm	16	27%
I'd prefer not to say	2	3%
I'm retired	5	8%
Total Respondents	**59**	

Q36: Type of Crops Grown on your Farm	Count
Vegetables	36
Fruit	22
Eggs	23
Dairy—milk, cheese, other	3
Protein/Meat—beef, pork, lamb, poultry	35
Grains	13
Legumes	8
Value added products	22
Processed fruits and vegetables (frozen, chopped, etc)	6
Herbs/Flowers	7
Other (please specify)	17
Total Respondents	**59**

Q37: Acres used for Farming	Count	%
0-4	31	53%
5-9	4	7%
10-24	4	7%
25-49	1	2%
50-99	2	3%
100+	1	2%
Not applicable	16	27%
Total Respondents	**59**	

Q38: Preferred Crops to Grow	Count	%
Vegetables	30	51%
Fruits	14	24%
Eggs	1	2%
Grains	6	10%
Herbs	3	5%
Legumes	4	7%
Processed fruit & vegetables	1	2%
Protein/Meat	5	8%
Value added	3	5%
N/A	8	14%
Total Respondents	**59**	

Q39: Crops, not currently, but Interested in Producing	Count	%
Vegetables	13	22%
Fruits	11	19%
Dairy	1	2%
Eggs	2	3%
Grains	3	5%
Herbs	8	14%
Legumes	1	2%
Processed fruit & vegetables	1	2%
Protein/Meat	9	15%
Value added	6	10%
N/A	21	36%
Total Respondents	**59**	

Q40: Production Practices	Count	%
Conventional	20	34%
Chemical free/naturally grown	26	44%
Organic methods, not certified	33	56%
Pasture based	22	37%
Biodynamic	3	5%
Permaculture	12	20%
Regenerative agriculture	16	27%
Hydroponic	4	7%
I would prefer not to answer	2	3%
Other (please specify)	7	12%
Total Respondents	**59**	

Q41: Own a written Food Safety Plan	Count	%
Yes	16	27%
No	43	73%
Total Respondents	**59**	

Q42: Certifications Owned	Count	%
GAP (Good Agricultural Practices)	8	14%
HACCP (Hazard Analysis and Critical Control Points)	1	2%
Organic	2	3%
Virginia Grown	3	5%
Naturally Grown	2	3%
Certified Humane	1	2%
American Grass Fed Association	0	0%
Animal Welfare Approved	0	0%
Food Justice Certified	0	0%
Non-GMO	0	0%
I do not have any certifications.	43	73%
Other (please specify)	11	19%
Total Respondents	**59**	
Other:		
Beef Quality Assurance		
Beginning farmer		
Harmonized Good Agricultural Practices		
Previously GAP certified		
I sell primarily via CSA, and my customers KNOW how I grow.		
H-GAP		
Foodsafe for Restaurants, FSMA		

Hgap
Va dept for aging and WIC approved
Real organic project
working on Master Beekeeper

Q43: Percentage of Output that is Certified Organic	%	Total Respondents
	100	1

Q44: Interested in GAP Certification to Sell to Food Hub	Count	%
Yes	18	36%
No	11	22%
Maybe	21	42%
Total Respondents	**50**	

Q45: Needs to become GAP Certified	Count	%
Certified Kitchen	1	3%
Classes/Training	5	14%
Financial Incentives/Time	6	16%
Information on Requirements/GAP Certifications	8	22%
Not sure	12	32%
Other	5	14%
Total Respondents	**37**	

Q46: Barriers to Reaching Production/Business Goals	Count	%
Availability/Cost of suitable land	12	20%
Availability of labor	23	39%
Access to capital	15	25%
Customer knowledge/awareness of local food production	14	24%
Fair pricing	13	22%
Financial management and/or recordkeeping	10	17%
Production equipment (tilling, planting, weeding, harvesting)	8	14%
Difficulties finding and/or negotiating with buyers	20	34%
Knowledge of government grants and programs	21	36%
Knowledge of and/or equipment for post-harvest handling (grading, cooling, washing, packing)	13	22%
Concerns about and labor required for food safety regulations including FSMA and GAP	13	22%
Delivery cost/logistics	10	17%
Shipping cost/packaging	13	22%
Lack of processing capacity	16	27%

Lack of adequate slaughter and meat processing facilities	25	42%
Lack of flash-freeze capabilities (IQF)	9	15%
Management skill to run a larger operation	9	15%
Weather, i.e. extreme events such as flood, drought, tornados, or seasonal changes	18	31%
Other (please specify)	6	10%
Total Respondents	**59**	
Other:		
Time		
COVID 19		
I am a one man operation 95% of the time. I am just starting to grow larger scale, but still small		
excessive regulation at both state and federal level		
personal time		
Need to semi-retire		

Q47: Percentage of gross income, in 2019, from each channel	Total	Average
Farm stand store / on farm retail (incl. direct to individual customers)	1741%	30%
Farmers Markets	1166%	20%
CSA	415%	7%
Broker	150%	3%
Direct sales to other farm stands/farm stores	281%	5%
Shipping off farm direct sales	1233%	21%
Grocery stores	139%	2%
Restaurants	259%	4%
Institutions (schools, hospitals, etc)	31%	1%
Wholesalers, distributors, or food hubs	485%	8%
Total Respondents	**59**	

Q48: Interested in starting/expanding sales with non end-consumer buyers (grocery stores, restaurants, etc)	Count	%
Yes	21	36%
No	8	14%
Maybe, if certain barriers are removed or conditions are met	30	51%
Total Respondents	**59**	

Q49: Challenges entering/increasing participation in Non-Direct-to-Consumer channels	Major obstacle	Minor obstacle	Not an obstacle
Volume—having enough product to fill orders	20	21	18
Land access—availability and/or cost	10	10	39
Pricing—receiving too low a price	26	24	9
Labor—availability / skill	17	24	18
Distribution/transportation—cost and/or complex logistics	10	32	17
Capital—ability to cover the upfront expense of land, labor or raw materials	13	27	19
Accessibility—unsure how to meet or negotiate with buyers	12	31	16
Requirements—unable or unsure about meeting standards for quality, handling, packaging, service, or certifications	9	32	18
Meat Processing—lack of access or inadequate slaughterhouse capacity	23	10	26
Produce Processing—lack of access or inadequate vegetable/fruit processing	10	17	32
Other (please specify)	2		
Total Respondents	**59**		
Other:			
competition with local beef producers			
delivery is something we manage but would like to outsource more.			

Q50: Interest in facilities for Specialty Meat Processing Applications	Count	%
Meat fabrication – large animal breakdown (farm: cow, chicken, goat, lamb)	31	53%
Meat fabrication – seasonal wild game breakdown (game: deer, game bird, rabbit)	6	10%
Specialty meat cutting – retail/wholesale cuts	26	44%
Smoking/Curing	24	41%
Sausage Making and/or Charcuterie	19	32%
Aging (Dry/Wet)	16	27%
Not applicable	20	34%
Other (please specify)	2	3%
Total Respondents	**59**	
Other:		
Small farmer poultry processing that is USDA inspected and affordable		
we have no processor for ostrich now so ANYTHING will help.		

Q51: Interest in Specialty Meat Processing Applications—Growers	Count	%
General meat fabrication, cutting, and processing classes or skills training	14	24%
Access to services that offer general meat fabrication, cutting or processing for your animal products	25	42%
Access to services that offer specialty meat preparations (smoking, curing, sausage, charcuterie, aging) for your animal products	21	36%
Specialty meat preparation classes or skills training (smoking, curing, sausage, charcuterie, aging)	18	31%
Not applicable	27	46%
Total Respondents	**59**	

Q52: Distribution Strategies Used	Count	%
Personal vehicles (car, van, pick-up truck)	53	90%
Refrigerated vehicle	5	8%
Buyer picks up	39	66%
We sell only at the farm	2	3%
We ship our product	6	10%
Not applicable	0	0%
Other (please specify)	4	7%
Total Respondents	**59**	
Other:		
Tractor Trailers, Load Lots		
We do deliver to someone who delivers for us to 2 hrs. away. We do the rest of our deliveries ourselves.		
During early COVID, I accepted preorders for pick up at drive through farmer's market. I LOVE preorders. Will never go back to stand there with the produce and hope someone shows up to purchase model... Too bad customers aren't ON BOARD with this!		
coolers with or without ice, as necessary; nonrefrigerated truck		

Q53: Ideas to Reduce Barriers When Selling Local	Count	%
Consumer Education	2	5%
Demand/Quotas	8	21%
Expansion	2	5%
Farmer's Markets	1	3%
Food Hub/Location	2	5%
Food Sovereignty	1	3%
More Labor	3	8%
Less Regulations	2	5%
Meat Processor	5	13%
Not sure	1	3%
Online Food Hub/Delivery	1	3%
Pricing/Taxing	5	13%
Processing Facilities	3	8%
Storage	1	3%
More Ways to be Competitive	1	3%
Total Respondents	**38**	

Q54: Interest in Working with Food Hub	Count	%
Very Interested	21	36%
Somewhat Interested	35	59%
Not Very Interested	2	3%
Not at All Interested	1	2%
Total Respondents	**59**	

Q55: Best thing about working with Food Hub	Count	%
Already work with one	1	2%
Bulk	1	2%
Collective Power	1	2%
Commercial Kitchen	1	2%
Consumer Education	1	2%
Distance (convenience)	1	2%
Distribution	9	16%
Efficiency (of scale)	3	5%
Help with Regulations	1	2%
Marketing	6	11%
Networking	2	4%
Not sure	2	4%
Pricing	2	4%
Processing Facility	1	2%

Sell More (local/reliable/profits)	26	47%
Shared Equipment/Work Space	1	2%
Transportation	1	2%
Total Respondents	**55**	

Q56: What would make the Food Hub more appealing	Count	%
Market Products Already Grown Here	1	33%
Manager Agricultural Education	1	33%
N/A	1	33%
Total Respondents	**3**	

Q57: Importance of Food Hub's Products/Services—Growers	Very important	Somewhat important	Not very important	Not at all important	Total
Pick-up service	11	26	10	5	52
Quick cooling service to remove field heat	3	17	10	24	54
Washing, grading and/or packing services	5	15	16	18	54
Bulk purchasing of packaging, boxes, containers	15	21	8	11	55
Cold or frozen storage service	14	17	10	14	55
Frozen processing service	8	10	15	22	55
Contract manufacturing services for my products	6	14	14	20	54
Access to a kitchen where I can process my farm products	17	8	14	16	55
Wholesale readiness training	10	17	13	15	55
Ensures farm- identification	19	21	7	8	55
Low-cost, short- term financing for production expenses	3	19	9	23	54
An online marketplace where I can post my products for buyers to view/purchase	24	21	6	4	55
Coordinates preseason crop planning between buyers and producers	9	24	7	15	55
Business/Entrepreneur training	6	18	14	15	53
Other (please specify)	3				
Total Respondents	**55**				
Other:					
This season I participated/managed multiple farm CSA on small scale. This really is the way to go: good for the farmers and customers get variety and great value.					
System of reuseable boxes and containers					
we need more processors for exotics/ostrich					

Q58: Percentage of Production Interested in Selling through Food Hub	Count	%
<25%	14	27%
25-50%	25	48%
51-75%	8	15%
76-100%	5	10%
Average	43%	
Total Respondents	**52**	

Q59: Products you'd Sell to a Food Hub	Total
Vegetables/Fruit	70
Dairy/Eggs	3
Protein/Meat	50
Value added/Herbs	22
Grains/Legumes	4
Total Respondents	**50**

Q60: Grower Pricing Opinions	Completely Agree	Somewhat Agree	Somewhat Disagree	Completely Disagree
I must receive prices that are equal to or greater than prices I am currently receiving for my goods.	16	29	7	1
I am willing to accept lower prices as long as the volume is high enough. (Please provide more detail in comments.)	6	24	11	12
I am willing to accept lower prices if the food hub provides sales, marketing and distribution support.	11	26	11	4
I will set my own prices based on my cost of production.	21	25	5	2
It is important to me that there is complete price transparency across the supply chain.	33	14	3	2
I am open to negotiating price on an ongoing basis based on the market.	11	29	9	4
I am willing to accept lower prices for some product to support healthy food access (including selling to customers that are price constrained, such as public schools and food banks).	8	19	15	11
Comments	12			
Total Respondents	**53**			
Comments:				
Continuing to ask farmers to take the hit for people with poor food access seems like a double hit when food prices are so low to begin with and seems to take advantage of farmer's generosity to the detriment of their business				

Lower prices than farm-direct-retail would be expected however, I would hope the food hub also establishes itself for consistency and quality so that price would not be the major hinderance to more sales.
the last question, I already donate vegetables to food bank and will always do this myself. I am very small, a friend sent me this link thinking I might be interested. I have land to grow an acre of vegetables if not more. I live alone and do most everything myself, so hard to commit to large orders, not sure if you want to help a small operation?
It is NOT the job of the producer to shoulder the weight of people with incomplete access to healthy foods!!!! Aren't there grants and other forms of philanthropy/government underwriting for such situations?
prices should not be less than my wholesale distributor; products will be marketed as 'local' and local calls for a premium; if buyers want it, the price is right.
High volume should of course mean lower prices than I get at farmers' markets, and I also would support healthy food access. The problem is that we farm on 1.5 acres and usually don't have trouble selling 90% of it at markets.
I need a minimum profit margin of 40% to remain in business.
Since I am not a high volume producer, accepting lower prices is difficult in order to maintain profit levels.
I have to be paid a fair value for my labor
the only way to ensure profit is through margin and turnover
Non
Lowering prices should not put me at risk for making a profit

Q61: Infrastructure Access and Willingness to Share	I have and would share for a fee	I have access but not to share	I don't have but need	I don't have, don't need
Refrigerated truck(s) for deliveries	0	2	20	31
Access to quick cooling to remove field heat	0	10	16	26
Cold storage space	4	21	18	10
Packing shed	1	18	10	24
Washing station	1	20	12	20
Dry storage	2	19	11	21
Chopping equipment	1	4	8	40
Certified kitchen	2	2	24	25
Slaughter facilities	0	4	22	27
Meat processing equipment	2	3	17	31
Other (please specify)	2			
Total Respondents	**53**			
Other:				
what is the deal with fermentation being legal, not sure what i need. I do a lot of fermentation now and would like to be legal				
Facilities for DRYING plant materials				

Q62: Distance Willing to Travel to Food Hub	Count	%
20 miles	12	23%
25 miles	4	8%
30 miles	11	21%
35 miles	1	2%
40 miles	4	8%
50 miles	15	28%
55 miles	1	2%
60 miles	3	6%
70 miles	1	2%
75 miles	1	2%
Total Respondents	**53**	

Q63: Comments to Consider for Food Hub Success
I do not think this will work unless there is a premium paid for farm products and for this to happen you will need to have buyers in place and under a contract of some kind
It is clear a bottled alcoholic product is very different than many of the other farm fruit and animal products being considered for this. We have sold our wine at a wine-hub like place in Farmville but we found it was not financially productive.
Demographics
Yes more information about this matter would be helpful
I really don't know if I am large enough to benefit, but would be interested.
be consistent in buying the product
We have worked with a food hub in the past. It was a lot of effort for our small farm. One concern was that our food was harvested and delivered fresh, but by the time it got to the buyers after being in storage at the hub, it was old. Chefs told us how disappointed they were. I like the idea of a commercial kitchen for canning jams/salsa. If there was a market for frozen vegetables/fruit, we would be willing to sell produce to a collective effort. Much of what we produce depends on the weather day-to-day. We often have to hustle our produce within 2-3 days for freshness. We have found retail and the produce auction is the easiest way to move our produce with a *sometimes* unpredictable offering.
not producing anything now but may in the future
Who will profit? What are the underlying goals and values of the hub? How can it be made super inclusive?
I'm happy with the market where I am but would be willing to help new/small growers with networking. I would be interested in meat processing networking.
drops of produce to a food hub is possible as long as its enough per trip and on my way on my other larger buyer routes.
We have worked some with the Local Food Hub in Albemarle. Before this year, all we did was buy wax boxes from them because their prices are too low for us and our volume. But this year, due to Covid, LFH started a drive-through market in Charlottesville that saved us as our markets in Richmond and Charlottesville were cancelled or delayed opening. The management at LFH was better at organizing and communicating with us than any other market we attend. The market that they are operating has continued to be a success and we sell there every week. The experience has taught us to value good

leadership in a non-profit that really CARES about local food producers. We wish you success, we would love to see another advocate for small farms / local food in the region.
A new regional food hub would be a great asset!
We want to expand production but are limited by lack of processors, lack of land, Lack of certified kitchen. This is an awesome idea and we definitely want to participate
Have the food hub designed support small farm, low volume producers. Have food hub designed to market specialty, ethnic, and gourmet produce varieties to meet smaller cultural and ethnic group demands.
We live in a beautiful and fertile county. A lot of us have been growing gardens and raising animals for ourselves for a long time. I would love to see people be able to make a living off of these activities and to provide some of the best produce and meats on the east coast! I think this food hub would be a great way to promote our local farmers and provide a great resource for our area.
It looks like you're thinking about two business: one is value adding for branded products; the other is to create a brand yourself and procure product from nearby farms. I think both have potential.
I would still need to have a certain level of autonomy.

Q65: Requirements—Growers	Count	%
Special access hours (i.e. 24 hr access, night access, daytime only, weekend access)	16	55%
Specialized equipment—kitchen production	20	69%
Specialized equipment—food manufacturing	16	55%
Cold storage square footage or pallet space	13	45%
Freezer storage square footage or pallet space	15	52%
Dry storage square footage or pallet space	10	34%
Access to a loading dock	6	21%
Proximity to public transportation	3	10%
Proximity to highways	10	34%
Allergen free area	3	10%
Access to a food lab/testing kitchen	11	38%
An area to meet with customers for tastings or demos	10	34%
Private production space that only I can access	5	17%
Access to co-packing service that processes my products according to my specifications	16	55%
N/A	1	3%
Other (please describe)	2	7%
Total Respondents	**29**	
Other: Equipment to streamline packaging and labelling!!!		

Q66: Techniques Used	Count	%
Assembly of dry ingredients	4	16%
Bottling	7	28%
Canning or preserving in jars	12	48%
Cutting, slicing, shredding of fresh produce	11	44%
Drying, dehydration	7	28%
Fermenting	5	20%
Freezing—blast chiller	3	12%
Juicing	6	24%
Milling	0	0%
Grinding	5	20%
Specialty cooking (e.g. large scale braising, roasting, steaming)	7	28%
Baking	5	20%
Smoking	3	12%
N/A	1	4%
Other (please specify)	6	24%
Total Respondents	**25**	
Other:		
Frying, grilling, poaching, decorating		
Freezing but don't chill blast		
value added herbal products (herbal butter/pesto, infused oil, salad dressings, herbal honey/syrups, herbal infusions		

Q67: Access to Automated Packaging Equipment needed	Count	%
VFFS (volumetric fillers)	3	11%
Bottling (automated line/machinery)	5	18%
Augur line (package fill and close machinery)	1	4%
Form, Fill and/or Seal machinery (FFS)	4	14%
Seamer/Shrinker machinery	7	25%
Pack, Bale and/or Palletize machinery	3	11%
Check weigher machinery	6	21%
N/A	14	50%
Other (please specify)	4	14%
Total Respondents	**28**	
Other:		
Need to do more research but would be open to learning how to operate these.		
Probably, but I lack familiarity with these machines. DO need help streamlining my process, even though small scale.		
We've thought of doing pre-packaged salads of our ingredients. We've never done this before.		
No, small production		

Q68: Months in Production	Count	%
January	10	34%
February	11	38%
March	16	55%
April	19	66%
May	23	79%
June	27	93%
July	28	97%
August	28	97%
September	29	100%
October	29	100%
November	23	79%
December	12	41%
Total Respondents	**29**	

Q69: Hours per Week in Production (during active months)	Count	%
1-5	3	10%
5-10	3	10%
10-15	6	21%
15-30	9	31%
30-40	3	10%
Over 40	5	17%
Total Respondents	**29**	

Q70: How many People in the Kitchen (including yourself, during active months)	Count	%
Just me	18	62%
2	8	28%
3	2	7%
7	1	3%
Total Respondents	**29**	

Q71: Preferred Pricing Structure for Kitchen/Storage	would prefer	would consider	would not consider
Hourly fee for kitchen use and monthly fee for storage unit	6	18	3
Monthly fee for a set number of hours and storage capacity	5	21	0
Annual fee for unlimited hours and set storage capacity	5	20	0
Other (please specify)	4		
Total Respondents	**27**		
Other:			
I'd prefer the kitchen offer staff and regulatory compliance and I pay for the kitchen service lock, stock, and barrel. I don't want to be in the kitchen, but I want my production to be in the kitchen and			

I want to own it all the way to the customer. I'm also open to the Hub offering a brand and buying wholesale from me.
Interested in sharing use with other micro-scale users
all depends on pricing, if right I would do a year
For us as small producers at this point, an hourly, monthly fee would be most attractive. As the business grows, an annual feed for unlimited hours would be the best option

Q72: Commercial Kitchen Hourly Rates	so inexpensive you doubt the quality	a bargain	a good value	too expensive to consider
<$10	5	19	3	1
$10	2	15	9	1
$15	1	7	13	5
$20	1	3	11	11
$25	1	1	9	16
$30	1	1	5	17
$35	2	1	4	17
$40	3	0	3	18
$45	3	0	2	19
Total Respondents	**28**			

Q73: Current Annual Production Volume	Total
Pounds	539,745
Cases	110
Flats	300
Bushels	40,000
Tons	40
Units	11,500
N/A	9
Total Respondents	**29**

Q74: Distance Willing to Travel to Commercial Kitchen	Count	%
0 miles	1	4%
10 miles	2	7%
20 miles	5	18%
25 miles	2	7%
30 miles	6	21%
40 miles	3	11%
45 miles	3	11%
50 miles	6	21%
Total Respondents	**28**	

Q75: Value of Training/Support to Grow your Business	Very valuable	Somewhat valuable	Not very valuable	Not at all valuable	N/A
General business strategy support / business plan development	7	9	7	2	2
Accounting and bookkeeping	8	8	5	3	3
Branding and marketing	11	10	2	2	2
Sales support, access to buyers	17	8	0	1	1
Navigating food safety requirements	18	6	0	2	1
Hiring, human resources and/or access to shared labor	10	8	3	4	2
Fundraising and valuation	6	9	4	4	4
Distribution	16	7	1	1	2
Local sourcing	13	8	2	2	1
Collective purchasing	13	8	0	2	4
Recipe testing and support	13	7	4	1	2
Being part of a food business community	13	8	2	2	2
Total Respondents	**27**				

Q76: Comments on Commercial Kitchen
would like to have a commercial kitchen soon and close. I have many recipes that we enjoy and would like to be able to make canned goods for profit in a safe way.
I think it's a great idea and asset to the proposal.
I have used the Cannery in Prince Edward County and Virginia Food Works one season. It was a great experience. Great staff, developed recipe, and affordable price per jar that included everything. We have not had a good strawberry season since, so haven't been able to make jam with our extras again. It is also a long way to travel. Would be interested in making tomato-based products too.
not in production at this time
Shenandoah Valley isn't exactly my "region" but there is nothing happening that is open to me in my area at this time. I have initiated and manage a multi-farmer CSA, but broader markets are monopolized by older distributors at this point (IMHO); they are not hospitable to new suppliers who do not adhere to their price points or regulatory regime.
some of these questions don't really apply, like the ones about production--we don't have a kitchen at all, but I couldn't advance to the next question without putting something in the box; my answers are not accurate, but at least I was able to keep going. The Charlottesville Food Hub was founded with these same kinds of ideas, but found them too difficult and simply became a wholesaler. I hope that does not happen to this initiative.
make it big enough
A very needed item in the Shenandoah Valley
This is something that I wish I had when I first started. I'd love to see this happen within the next year

Q77: Describe Shenandoah Valley Market	Completely Agree	Somewhat Agree	Somewhat Disagree	Completely Disagree
Shoppers and diners seek out locally produced products	13	39	14	2
Shoppers and diners are willing to pay more for locally produced products	9	41	14	4
Shoppers and diners need education on the value of buying locally produced food	44	20	2	2
Institutional buyers seek out locally produced products	4	17	36	11
Institutional buyers are willing to pay more for locally produced products	5	17	31	14
Farmers have the opportunity to sell large quantities of locally produced products	7	32	24	5
Farmers have the opportunity to grow and sell a diverse set of products	27	22	15	3
Farmers have a diverse choice in customers to sell to	9	24	27	8
The demand for local product exceeds supply	9	22	27	10
Total Respondents	**68**			

Q78: Ideal Location for Proposed Facility	Count	%
Augusta	4	6%
Charlottesville	1	1%
Fairfield	1	1%
Franklin, WV	1	1%
Harrisonburg	14	21%
Highland	1	1%
Lexington	2	3%
Not sure	16	24%
Raphine	1	1%
Rockingham	4	6%
Staunton	9	13%
Strasburg	1	1%
Verona	2	3%
Waynesboro	2	3%
Woodstock	2	3%
Total Respondents	**68**	

Q79: Interest in Shared Spaces	Very interested	Somewhat interested	Not interested	N/A
Large gathering/event space used for public events, fairs, lectures, conferences	16	25	25	2
Shared office space	4	7	51	6
Private office space	4	6	52	6
Classroom for food and ag related activities, seminars, trainings	22	28	17	1
Event space for private functions (reunions, parties, etc.)	11	24	30	3
Other (please share your additional space ideas)	2			
Total Respondents	**68**			
Other:				
Meeting space available for events with trade show are a must				
We do not need another event center.				

Appendix 6: Proposed Operating Models (3)

The following options were proposed to the CSPDC and their study team during the business analysis phase of the study. Concept notes, uses, services, and revenue model for each are proposed below.

Option A: The Wagon Wheel (Small—Base Case)

The Concept

The Wagon Wheel is a small food hub and shared kitchen facility that focuses on the creation, distribution and sale of local products throughout Virginia and neighboring cities. The concept for Option A is to create a food hub using a network model, which consists of connected producers and strategically placed infrastructure, to support wholesale, retail and direct to consumer distribution of local products at scale. This option utilizes a "Hub and Spoke" model, which is comprised of a centralized hub and smaller aggregating locations called spokes. This concept will rely heavily on building a collaborative network of trusted relationships among producers and growers in the region. In this model, the hub is the larger aggregation location for all goods and services and the spokes are smaller locations that support remote aggregation, storage and cross-docking. The Hub facility is also equipped with a shared-use commercial kitchen to process raw products into goods for sale and a commercial production room for meat fabrication. To meet the growing direct to consumer demand and farmer supply, a virtual hub component exists to allow consumers to order from a larger pool of farmers/businesses and for suppliers to sell to a larger pool of consumers, resulting in better price transparency, personalization, guaranteed delivery and supply demand management. This online marketplace will serve wholesale and retail customers and expand those market opportunities for growers.

Concept Example: Red Tomato, a food hub based in Massachusetts, currently operates under a hub and spoke model. Red Tomato has set up a network of farms within the northeast who work together to consolidate shipments at larger farms, with Red Tomato as a broker of sales. The farms have different storage, cooling and packing infrastructure and are spread from Vermont to Pennsylvania. They currently have an established network of 40 plus producers, which continues to grow. Red Tomato's hub and spoke model focus is primarily production and distribution vs. full service (there is no brick and mortar facility), however, it validates the model's potential for scale through network effects. The Red Tomato model also validates an opportunity to leverage local or regional distribution companies to augment transportation capacity. Red Tomato outsources the logistics of pickup and transport, which allows it to return up to 90% of revenue to their growers. (*See full case study in Appendix 9)*

The hub and spoke model can support additional partnership opportunities. For example, the hub can support in-region distribution relationships (Farm to Family, Ecofriendly Foods, Friendly City Co-op), in-region meat processing relationships (T&E Meats, Wholesome Foods) and either the hub or spokes can support "off-site" training, which can be coordinated and promoted through potential training partners (i.e. Allegheny Mountain Institute, Virginia Small Business Development Center, Virginia Extension and other farm partners).

Uses and Services

The hub will consist of a number of shared and dedicated spaces and services which will support the facility's viability and meet the needs of the broader community, including aggregation (meat, produce), storage (dry, cold, frozen), commercial production (meat), a shared kitchen (meat, other), warehousing, flexible, multi-purpose spaces (training/classrooms, events, entrepreneurial and community support), and vending (local products, grab and go). Parking will also be available for food trucks. The hub will welcome visitors and users of the space at a reception area and have administrative office space for on-site management personnel. The hub will also provide services including branding and marketing to support farmer growth and scale both within and outside of the Central Shenandoah Valley. The spokes will broaden the reach of high demand hub services including aggregation (meat, produce) and storage (dry, cold, frozen).

Users and Revenue

This model will generate revenue from the hub and each spoke. Specifically, the hub will generate revenue through buying and selling raw product that moves through the warehouse, shared kitchen rentals, storage space rentals, classroom space rentals, food truck parking fees, retail vending sales, processing operations, virtual marketplace sales, and branding and marketing support services. The spokes will generate revenue from storage space rentals.

Approximate Square Footage

The hub, which will provide more services, will have warehousing, equipment and other infrastructure and can range from 5,000 – 10,000 sq ft in size. The spokes, which will provide less services and have more limited infrastructure, can range from 1,000- 4,000 sq ft in size. There should be at least three spokes dispersed across the surrounding counties within the Central Shenandoah Valley region, all within reasonable proximity to the hub (under 30 miles).

Option B: Shenandoah Small Farm Enterprise Center (Large)

The Concept

The Shenandoah Small Farm Enterprise Center will be an agricultural flagship facility dedicated to building resilience and sustaining small, local farms and food businesses in the Shenandoah Valley. The concept for Option B is to build a centralized agricultural center that supports farmers, entrepreneurs and agricultural enterprises in the region. The Center will support the branding and marketing of high quality agricultural products that have long been produced in the area by bringing a robust set of marketing, sales, and support services under one roof. This concept has a full-service food hub, business incubation and support, an expansive range of kitchen production and processing services and multiple programming opportunities. This concept will rely heavily on the support and engagement of a base of entrepreneurially-minded community members who view the Center as a destination for learning and growth opportunities. Key aggregation, production, distribution and warehousing services will be available to support all business stages.

Concept Example: The Vermont Food Venture Center, owned by the Center for an Agricultural Economy, is a shared food hub and business incubator designed for food entrepreneurs and farmers seeking to grow their business. It features state-of-the art shared kitchens and ample space for members within the community to attend trainings to meet education needs and wants and incubate new business ideas. The Vermont Food Venture Center offers farm and food programming, community programming and scales through a heavy reliance on community engagement and partnerships to maximize use. The Vermont Food Venture Center validates the model's ability to provide value to early-stage businesses who want to scale and aspiring entrepreneurs who want to learn. (*See full case study in Appendix 9).*

This model can support similar partnerships as Option A as well as community-based local partnerships from organizations (Project GROWS, Allegheny Mountain Institute).

Uses and Services

The main differences between Option B and Option A are the size and scale of services: The size of the footprint (large size hub vs. small size hub) the availability of warehousing services (expansive vs. limited) the commercial production focus (meat and all other products + contract manufacturing vs. meat fabrication only), the expansiveness of retail operations (indoor/outdoor year-round market vs. vending services only) and food truck amenities (parking and services vs. parking only). The Small Farm Center will provide dedicated dry, cold and frozen storage for select products. In Option B, the expansion of production, distribution and warehousing services and retail operations is likely to draw new traffic from both producers and consumers within and potentially outside of the Central Shenandoah Valley region.

Users and Revenue

This model will generate similar revenue streams as Option A, with the addition of revenue from food truck services and farmer's market vendor space rentals, long term storage opportunities and contract manufacturing services.

Approximate Square Footage

Option B's Enterprise Center, which will provide expansive services, will be at least 20,000 sq ft.

Option C: Shenandoah Specialty Meats Hub (Medium)

The Concept

The Shenandoah Specialty Meat Hub will celebrate the diverse set of high quality and premium meats raised and processed in the Shenandoah Valley. The concept for Option C is to create a specialty Meat Hub, which will primarily cater to the growing meat processing needs across the region. This Option is "meat-centric" and has the opportunity to bring brand recognition to the region through the sale of "Shenandoah Specialty Meats" branded products and value-added meat items sourced from farmers within the region raising beef, pork, chicken, turkey, lamb, goose and other unique meats. This model supports the scale up of the needed butchery workforce and meat education across the region with in-house skills training programs on meat fabrication, slaughter and specialty processing for farmers and producers and robust meat processing programs for farmers, producers and individuals. To further enhance the brand, an on-site and mobile BBQ food truck will source meat from the hub, with a rotating showcase of farm products produced at the hub. On the direct to consumer side, "Shenandoah Specialty Meats" will provide a subscription meat delivery service that specializes in locally produced premium sustainable meats at an affordable price with the potential to gain national brand recognition. This concept will rely heavily on the sustainable expansion and focus on the scale of meat production and distribution within the Central Shenandoah Valley region.

Concept Examples: First Hand Foods, a North Carolina based food hub, feeds the need for the region's growing demand for locally sourced beef and support famers who lack the time, infrastructure, scale and resources to move and process all of the cuts of the animal. They work with small scale processors to portion the meat and sell every single part of the animal to customers. The First Hand Foods model validates the opportunity to create a meat hub to leverage an existing network of diverse meat producers with shared values and standards to meet growing product demand. (*See Appendix 9).*

Butcher Box, a Boston based meat subscription service, offers custom boxes which can include 100% grass-fed beef, free-range organic chicken, heritage-breed pork, and wild-caught seafood options. They offer a variety of more than 25 high-quality cuts. They consider themselves "the neighborhood butcher for modern America" and advertise a strong sustainability ethos around the idea of caring for animals, improving livelihoods for farmers and sharing better meals together. This meat subscription business validates the opportunity to broaden the customer reach of the "Shenandoah Specialty Meats" brand and products. (*See Appendix 9).*

This model will support similar partnerships as Option A, with scaled-back meat processing relationships as they will be provided in house. However, it will rely heavily on existing slaughter partnerships with the opportunity to add this service on in the future.

Uses and Services

In addition to the meat focus, the main differences between Option C and Option A is the size of the footprint (medium hub vs. small size hub and multiple spokes), the type of aggregation services (meat handling and produce as brokerage only vs. meat and produce handling), the expansiveness of retail operations (limited vs. vending services only) and the type of direct to consumer model (subscription service vs. no subscription service). In Option C, there is a key dependency on brokers and other distributors and partnerships for the aggregation and sale of non-meat products.

Users and Revenue

This model will generate similar revenue streams as Option A, with the addition of retail sales from products sold on-site, direct to consumer sales from subscription services and brokerage fees from produce aggregation.

Approximate Square Footage

Option C's meat hub, which will focus on meat production, distribution and education, can range from 5,000 – 10,000 sq ft in size.

Naming and Branding

The name of the meat hub should be differentiated and aligned to the brand of the local products. A list of additional name options for the meat hub that could also champion the Shenandoah brand are as follows:

- *Shenandoah Specialty Meats & Butchery*
- *Shenandoah Meats Academy*
- *Shenandoah Specialty Cuts*
- *Shenandoah Meat Lab*
- *The Butchers Bench*
- *Shenandoah Meat Crafters Academy*
- *Shenandoah Meat Craft Academy & Market*

Proposed Operating Models: Side by Side Comparison

	Option A: The Wagon Wheel	Option B: Shenandoah Small Farm Enterprise Center	Option C: Shenandoah Specialty Meats Hub
Facility Type	• Distributed: Hub + Spoke	• Centralized	• Specialty
Scale	• Smaller	• Larger—at least ~20,000 sq ft and 4x Option A	• Medium
Overview	• Hub and spoke food hub relying heavily on network of farm suppliers and strategically placed infrastructure for on farm cooling, cross docking, and temporary storage • Hub provides enough storage for 'just in time' deliveries (low inventory) • Commercial production room for *meat* fabrication and co-packing/contract manufacturing services only • Commercial shared kitchen for small value-added producers/businesses • Spaces are multi-purpose to accommodate demos/training • Additional "spokes" of the facility include partnering with existing technical assistance providers to provide education and training offsite • A virtual marketplace to expand the reach and pool of farmers and consumers for the sell and purchase of products.	• Food hub is centrally located and provides warehousing, storage, distribution and sales/marketing services for farmers • Hub provides dedicated dry, cold, frozen storage for long term use – for specific products • Facility has separate production rooms for both meat and non-protein food manufacturing/co-packing • Large shared commercial kitchen with space/storage for each type of user • Multi-purpose spaces for trainings, business incubation and community gatherings • A virtual marketplace to expand the reach and pool of farmers and consumers for the sell and purchase of products.	• Hybrid food hub and produce distribution company • Facility focuses on aggregating, processing and branding Shenandoah meat products • Commercial production room for *meat* fabrication and co-packing/contract manufacturing services only • Commercial shared kitchen for small value-added producers/businesses, focus on meat producers • Workforce development program dedicated to training labor in meat fabrication, slaughter, and specialty processing • Training/classes for businesses and individuals interested in meat fabrication and specialty processing • BBQ food truck owned or leased out to operator that showcases Shenandoah Meat Hub branded products and offerings • Meat subscription service offering • A virtual marketplace to expand the reach and pool of farmers and consumers for the sell and purchase of products.
Warehouse / Food Hub	• Hub with minimal central aggregation + spokes with remote aggregation/cross dock/on farm cooling • Provides pick up service to and from "spokes" and buyers	• Hub with central aggregation and distribution to/from buyers and suppliers • Online marketplace for wholesale and retail	• Hub with aggregation and warehousing of meat • No brick and mortar central aggregation of produce. Facility relies on farm 'spokes' *only* to aggregate product for *wholesale*

	Option A: The Wagon Wheel	Option B: Shenandoah Small Farm Enterprise Center	Option C: Shenandoah Specialty Meats Hub
	• Online marketplace for wholesale and retail • Branding/marketing/sales for users/members	• Branding/marketing/sales for users/members	• Provides distribution to and from "spokes" to wholesale buyers • Online marketplace and produce brokerage services • Branding/marketing/sales for users/members – focus on creating a Shenandoah Meat Hub brand and set of branded products
Storage: Dry, Cold and Frozen	• Hub has cold, frozen, dry storage to hold product *temporarily* before sale • Dedicated cold and frozen space for animal carcass / meat storage (does not have to be separate room) • Farm "spokes" have cold, frozen and dry storage in at least 3 strategic sites in the region	• Cold, frozen, dry storage for all users potentially segregated by type and multiple temp controlled options for long term storage of crops/inventory • Separate cold and frozen storage for animal carcass / meat	• Dedicated cold and frozen storage for animal carcass / meat storage • Dedicated hanging room
Commercial Production Floor—Meat	• Facility has meat fabrication and contract manufacturing to support this • Non-slaughter	• Same as Option A	• Same as Option A • Potential for slaughter facility to be built on premise or in partnership in future
Commercial Production Floor—All Other	• No separate commercial production room	• Room dedicated to high volume co-packing lines/equipment and contract manufacturing (non-protein)	• Same as Option A
Shared Kitchen	• Facility has single kitchen to provide space/access for farmers/businesses to create value added products (both meat and non-protein)	• Single kitchen segregated according to each user – dedicated space for: 1. Meat value add 2. Non-protein value add 3. Entrepreneurs/incubation • Specialty meat processing equip for shared use (smoking, sausage stuffer, curing etc) • Specialty cooking equipment for shared use: Canning/preserving, specialty cooking (braising, roasting, steaming), baking, processing fresh produce, bottling, dehydrating, juicing, seamer/shrinker packaging equip	• Same as Option A but limited equipment/space for non-meat value added processing
Flash Freezing Line	• None	• None	• None

	Option A: The Wagon Wheel	Option B: Shenandoah Small Farm Enterprise Center	Option C: Shenandoah Specialty Meats Hub
Training/ Classrooms	• Meat processing/value added training occurs in shared kitchen • Facility does not have dedicated classroom or food lab space • Additional training coordinated/promoted through partners and occurs off site ("spoke") • Multi-purpose space	• Dedicated classroom space for incubator business classes; Food safety classes; other technical assistance for farmers	• Dedicated classroom space for incubator business classes; Food safety classes; other technical assistance for farmers • Workforce development program dedicated to training and increasing availability of labor in meat fabrication, slaughter, and specialty processing • Robust meat processing programming for farmers, producers and individuals interested in learning how to create specialty meat products – potential to partner with existing educational outlet/expert or provide in house
Event / Community / Entrepreneurial Space	• None	• Multi-purpose community space for farmer-buyer meetings; ag-related events	• Same as Option A
Retail	• Sale of products made onsite – potential for kiosk or vending near public entry	• Indoor/outdoor, year-round market for local products	• Sale of meat products made onsite—focus on value added meat products, cured hams, sausages, bacon, jerkys etc
Off-premises ("spoke" network)	• Remote aggregation with farm partners • On farm cooling • Remote cold/dry storage	• Same as Option A – but no reliance on remote cold/dry storage	• Same as Option A
Other	• Facility Admin Office • Reception Area • Food truck parking – outdoor only	• Same as Option A • Parking/plugin for x food trucks • Gray water disposal • Cleaning service	• Facility Admin Office • Reception Area • On-site/mobile BBQ Food truck that sources meats from Hub with rotating showcase of different farm products produced at Meat Hub
Owner Roles	• Manages Hub and spoke aggregation network of suppliers • Manages Online marketplace/sales and brand • Manages commercial kitchen users and co-pack/manufacturing services • Identifies/Organizes technical assistance offerings; workforce development for meat processing	• Manages Food Hub or hires operator • Manages shared kitchen and provides incubation services—or could partner with separate operator • Identifies/Organizes technical assistance offerings; workforce development for meat processing • Leases classroom and event space	• Manages Hub and spoke aggregation network of suppliers or hires operator • Manages online marketplace/sales, brokerage services and brand or hires marketing and sales manager • Manages commercial kitchen users and co-pack/manufacturing services or hires operator • Identifies/Organizes technical assistance offerings; workforce development for meat processing

Appendix 7: Operating Model Components and Supporting Research—Detail

The following table illustrates the supporting primary and secondary research for each facility operating model component.

Spaces	Uses / Services	Users / Revenue Model	Existing Food System Infrastructure
Hybrid Warehouse Food Hub	Aggregation Distribution support Online marketplace Branding/marketing/sales for users Link producers to new markets Hybrid Food Hub = Wholesale and retail (direct to consumer) sales, with emphasis on wholesale Virtual Food Hub (direct to consumer sales)	Single operator—long-term lease	The Local Food Hub 4P Foods Friendly City Co-op (aggregation) Southern VA Food Hub Farm to Family (distro) Ecofriendly Foods (distro) Rockbridge Food Hub (dormant) Shenandoah Foods (distro, defunct) For large suppliers: Interchange; US Cold Storage; WCS Logistics (3PL and storage)
Rationale	Aggregation: 56/59 (94%) farmers said they were interested in working with a new food hub 20 (33%) farmers reported volume and not being able to fill wholesale orders as a *major barrier* to selling into wholesale markets 17 buyers reported that availability and the inconsistency of supply of local product was an obstacle in purchasing local 36 farmers said bulk purchasing of packaging, boxes, containers was an important feature of a food hub Marketing/Sales: 19 farmers reported difficulties finding/negotiating with buyers as a major barrier 45 (81%) farmers said online marketplace was very important food hub feature 33 (60%) farmers said preseason crop planning was very important service 25/27 (92%) farm and food businesses said sales support and access to buyers was a valuable service Research shows high demand outside of the region (DC, Richmond) for local product coming from Shenandoah Valley Distribution: 37/55 (67%) farmers said pick up service was important 42/59 (71%) farmers said that the cost/complex logistics of distribution was a challenge 13 (25%) farmers reported the cost of shipping/packaging and 10 (19%) farmers reported delivery cost/logistics as major barriers to growing their business Interviewees mentioned distribution, delivery assistance, back hauling as necessary to support growers in the region; research shows few specialty produce distributors that serve/work with small farms Branding: 40/55 (72%) farmers said it was important for a food hub to ensure farm-identification 21/27 (77%) farm and food businesses said branding/marketing support was a valuable service 4 buyers said it was very important to have farm identified products; strong brand representing the region; delivers orders directly; has an online ordering system 16/ 37 (43%) interviewees were interested in a food hub. Interviewees expressed enthusiasm and excitement for food hub in the region that supports small farmers and helps their businesses grow and increase their ability to scale to new markets. Contingencies:		

Spaces	Uses / Services	Users / Revenue Model	Existing Food System Infrastructure
	12 (23%) farmers reported lack of knowledge of or equipment for post-harvest handling as a major barrier 6/53 farmers reported being GAP certified, 2 reported HGAP, 10 farmers said they'd get certified if there was enough demand, 21 farmers said they weren't sure they'd get GAP certified 38/53 farmers reported no written farm food safety plan 25% of farmers reported selling through wholesale channels		
Storage: Dry, Cold and Frozen	Storage for all users (farmers, tenants, kitchen members)	Food Hub operator—part of annual lease Shared kitchen members—part of membership	Friendship Industries For large suppliers: Interchange; US Cold Storage; WCS Logistics (Apples)
Rationale	Lack of cold, frozen storage for small-midsize producers in the region, no shared storage for small producers identified 31/55 farmers said cold or frozen storage was an important feature for food hub 18/53 farmers said that they don't have access to cold storage but they need it 15/29 farmers said that freezer storage was a required feature of a food hub; 13 farmers said cold storage was required 13 buyers reported that seasonality of produce does not align with consumer demand 4 buyers said it was very important to have consistent, year-round supply 12/37 (32%) interviewees expressed interest in having cold and freezer storage be a component of the Center and a majority of interviewees saw the necessity and value of cold and freezer storage in their current business operations or those of their peers. **Must have cold/frozen storage for meat fabrication**		
Commercial Production Floor—Meat	Meat fabrication and contract manufacturing to support this	Single operator—long-term lease	T+E Meats Wholesome Foods (processing only) Allegheny Meats (potentially reopening in 2021) Donald's Meat Processing/Cattleman's/Buffalo Creek D&M Meats (not USDA inspect.) Gore's Meats (Frederick Co) Farmer Focus (organic chicken processor – partner farms only)
Rationale	23 (43%) of ALL farmers (both vegetable and meat) reported lack of adequate meat processing and slaughterhouse capacity as a major barrier 31/59 (53%) of ALL farmers (both vegetable and meat) said they'd be interested in utilizing a facility for meat fabrication; 26 said they were interested in specialty meat cutting, 24 said smoking/curing, 19 said sausage making 27/70 (39%) farmers and food businesses reported they'd be interested in services that *provide* meat fabrication, cutting, or processing animal products 25/70 (36%) farmers and food businesses reported they'd be interested in services that *provide* specialty meat preparations (smoking, curing, sausage making) Research shows only two USDA inspected slaughter/process facilities for public use in the region, dearth of skilled labor for meat fabrication and butcher skills 12/37 (32%) interviewees desired a meat processing component of Center and a majority of interviewees reported a need for meat processing		

Spaces	Uses / Services	Users / Revenue Model	Existing Food System Infrastructure
	in the region. All meat farmers indicated that the few meat processing facilities in the area each had a processing backlog as much as one year out.		
Commercial Production Floor—All Other	Co-packing and contract manufacturing services	Single operator—long-term lease	Highland Center Keezletown Cannery (defunct) Country Canner (copack only) Out of region: Shawnee Canning Company (copack) VA Foodworks (Prince Edward Co) Carroll County Cannery
Rationale	21 (40%) farmers reported availability of labor as a major barrier 13 (25%) farmers reported lack of processing capacity as a major barrier 16/33 (48%) farmers and food businesses said they'd like access to co-packing service that processes their products Research shows lack of co-pack services/contract manufacturing services for small producers in the region Interviewees were not specifically asked about co-packing and contract manufacturing services, however, a high, common interest in scaling business operations was a common theme that could support such services.		
Shared Kitchen – meat; non-protein; entrepreneur	Value added processing – specialty meat + cooking, canning Class demos	Farmer and food businesses—rent by hour or membership model	Highland Center Out of region: VA Foodworks Glade Hill Community Cannery Hatch Kitchen (Richmond)
Rationale	Shared Commercial Kitchen: 33/67 (49%) farmers and food businesses said they would be interested in utilizing a shared commercial kitchen 12/33 (36%) farmers and food businesses use canning techniques; 11 process fresh produce; 7 bottle products; 7 need a seamer/shrinker machine; 5 need bottling equipment 22/37 (59%) interviewees expressed great interest in value added processing services, specifically canning. 18/37 (48%) interviewees desired and saw great utility in a shared commercial kitchen space. Meat: 23 (43%) of ALL farmers (both vegetables and meat) reported lack of adequate meat processing and slaughterhouse capacity as a major barrier 31/59 (53%) of ALL farmers (both vegetables and meat) said they'd be interested in utilizing a facility for meat fabrication; 26 said they were interested in specialty meat cutting, 24 said smoking/curing, 19 said sausage making Lack of accessible commercial/shared kitchens in the region; interest from users outside the region to travel to facility		
Flash Freezing Line	Freeze line for protein and produce; potential for lockers or moveable freezing units		US Cold Storage (blast freeze)
Rationale	8 (15%) farmers reported that lack of flash freezing was a major barrier 32 (59%) farmers reported that access to produce processing was not a barrier in reaching new markets 3 businesses reported needing flash freezing techniques		

Spaces	Uses / Services	Users / Revenue Model	Existing Food System Infrastructure
	1 buyer reported that selling local frozen produce was an important food hub offering		
Training / Classrooms	Incubator business classes Food safety classes Workforce development Technical assistance for farm businesses (wholesale readiness)	All users—rent by hour (If doing training, may not be able to use kitchen—class time vs member time)	Highland Center (Highland Co) Allegheny Mtn Institute VA Extension VA Small Business Dev Center VA Career Works New Country Organics Project GROWS (nutrition ed in schools)
Rationale	Incubator: 20/27 (74%) respondents said they'd like recipe testing and support 21/27(77%) respondents said they'd like to be a part of a food business community 8/29 (27%) respondents said they'd like access to a food lab/test kitchen Skills/Business Training: 23/70 (32%) respondents said they would like specialty meat preparation classes or skills training; 18 (25%) said they'd like general meat fabrication classes or skills training 26/55 (44%) farmers said they'd like the food hub to offer business/entrepreneur training 16/23 (69%) of all respondents said they'd like access to general business strategy support and business plan development 8/29 (27%) respondents said they'd like access to a food lab/test kitchen; 8 said they'd like an area to meet with customers for tasting or demos Technical Assistance: 27/55 (49%) farmers said that wholesale readiness training was an important feature of the food hub 24/27 (88%) respondents said they'd like assistance/support in navigating food safety requirements 21/27 (77%) said they'd like branding/marketing support 21/59 (35%) farmers reported a lack of knowledge of government grants and programs as a major barrier Interviewees reported that majority of small farmers in region are not 'set-up' for wholesaling. Potential un-tapped market for area growers. Research shows that existing ag-education primarily exists outside the region; not focused on small production agriculture All interviewees viewed the need to educate farmers and consumers as a must to continue to build and scale the community. Vehicles to do so, including providing a space for technical training for farmers and providing a food lab and test kitchen for consumer to engage with consumer were ideas of interest. If kitchen incubates nascent businesses, classroom space is needed for additional entrepreneurial training outside the kitchen		
Event / Community / Entrepreneurial Space	Multi-purpose space for an array of ag and food related events	Rentable space by non-members and members	Rockingham County Fair Exhibit Hall/Event Space; Cesterie Yarn; Valley Pike Farm Market; government centers/extension offices, Innovation Hub; BRITE Transit facility; the Highland Center
Rationale	35/68 respondents said they'd be interested in utilizing an event space for private functions (reunions, parties) at the facility 50/68 respondents said they'd be interested in utilizing a classroom for food and ag related activities, seminars, trainings		
Retail	Sale of products made onsite	Tenants, members and visitors – vending or kiosk	Farmstands along Rt 11; Farmers markets; Wholesome Foods; Cattleman's Market; Country Canner; Friendly

Spaces	Uses / Services	Users / Revenue Model	Existing Food System Infrastructure
			City Co-op; 4P Foods; Jon Henry General Store; Valley Pike Farm Mkt – many more
Rationale	9/37 (25%) interviewees communicated the benefit of having retail space to sell local products at the facility. This interest is further supported by growing trends in consumer demand for locally sourced grab and go and prepared food options.		
Off-premises	Remote aggregation/cross docking On farm cooling		
Rationale	Contingencies: Low interest in *sharing* equipment and infrastructure; 30% of farmers would like access to quick cooling to remove field heat and don't currently have; between 10-20 farmers reported needing basic on farm infrastructure to pack, store and wash products		
Other	Facility Admin Office, Reception Area		
Owner Roles	Leases classroom and event space Manages shared kitchen and provides incubation services—or could partner with separate operator Identifies/Organizes technical assistance offerings; workforce development for meat processing Hires/manages facility staff		

Appendix 8: Equipment List

The following table details recommended equipment for the facility, cost estimates of each item, and number of items needed. This list was used to inform the financial model.

FACILITY COMPONENT	EQUIPMENT	EST COST (EA)	(#)	EST TOTAL COST	COMMENTS
SHARED KITCHEN	**REQUIRED EQUIPMENT**				
PREP (4 stations)	Stainless Work tables (ea)	$200.00	4	$800.00	with rollers, standard 6'
HOTLINE (3 stations)	6-burner gas range (ea)	$4,500.00	1	$4,500.00	(6 gas burners, under-oven/non-convection + 1 overhead shelf)
	double stack convection oven (ea)	$35,000.00	1	$35,000.00	full sheetpan sizing/gas
	Steam Jacket Kettle (ea)	$30,000.00	1	$30,000.00	40 gal (base)
	Knee/Stock Pot Burner (ea)	$1,000.00	1	$1,000.00	
	Buffalo Chopper (ea)	$7,500.00	1	$7,500.00	
	Hobart Mixer (ea)	$15,000.00	1	$15,000.00	60 quart (floor model)
	Commercial Food Processors (ea)	$1,500.00	2	$3,000.00	table top
	Commercial Blenders	$1,200.00	2	$2,400.00	
	Speed Racks	$150.00	6	$900.00	standard bun rack
	Hood & Equip to Run (including Ansel)	$80,000.00	1	$80,000.00	10-12 ft min run depending on layout
	Assorted Small Wares (Support)	$20,000.00	1	$20,000.00	
	Support frames, racks, and bases	$7,500.00	1	$7,500.00	
	OPTIONAL EQUIPMENT				
	Tilt Skillet (ea)	$25,000.00	1	$25,000.00	20 gallon/3-phase; for caterers or large-scale CPG production
	Blast Chiller—Rollin Closet (ea)	$60,000.00	1	$60,000.00	full size, 10 tray roll-in; upgrade all users
	Combi Oven (with steam)	$50,000.00	1	$50,000.00	full size, 8 sheet min, gas; for bread or large-scale catering production
	Under-Counter/Work-Top Refrigeration	$3,500.00	4	$14,000.00	prep production (for in-production holding) upgrade
	Broiler/Grill (on stand/rack)	$2,500.00	1	$2,500.00	24-36" on stand; catering production upgrade
	Flatop or Griddle (on stand/rack)	$2,500.00	1	$2,500.00	24-36" on stand; catering production upgrade
	Fryer (2 basket, 40# capacity, gas)	$7,500.00	1	$7,500.00	catering production upgrade
	Commercial Bagging Belt/ Manual Line	$4,500.00	1	$4,500.00	Upgrade for CPG packaging
	Commercial Dehydrator	$3,500.00	1	$3,500.00	10 tray, tabletop cabinet; meat and/or vegetable value-add users
	Commercial Canner (Manual)	$15,000.00	1	$15,000.00	meat and/or vegetable value-add users
	Industrial Spinners (manual)	$450.00	1	$450.00	vegetable value-add users
	Industrial Spinners (Automatic)	$4,500.00	1	$4,500.00	vegetable value-add users
	Industrial Produce Washtubs (Manual)	$500.00	1	$500.00	vegetable value-add users
	Industrial Sorter (automatic)	$10,000.00	1	$10,000.00	vegetable value-add users

FACILITY COMPONENT	EQUIPMENT	EST COST (EA)	(#)	EST TOTAL COST	COMMENTS
	GENERAL SPACE/SANITATION				
	1-bay sink (deep, production use)	$250.00	1	$250.00	
	2-bay sink (production use)	$450.00	2	$900.00	
	3-bay sink (dish use)	$650.00	1	$650.00	
	1-bay hand sink (required)	$150.00	2	$300.00	
	commercial spray hoses & faucets (all)	$150.00	6	$900.00	
	Sanitizing Dishwasher (side input set-up)	$30,000.00	1	$30,000.00	*recommend lease—column in budget lines is an estimate of 1 year lease/chemical commitment
	basic steam vent hoods	$20,000.00	1	$20,000.00	*required for DW
MEAT PROCESSING	**REQUIRED EQUIPMENT**				
Refrigerated Hanging Space	Stainless Work tables (ea)	$200.00	4	$800.00	
Refrigerated Production Room (Processing)	Industrial Band Saw (Small)	$4,500.00	1	$4,500.00	
Butchery & Specialty Needs	Shelves/Racking	$10,000.00	1	$10,000.00	High-Cap storage units (4-6 shelves tall) for space needs
	Hanging Hook System	$15,000.00	1	$15,000.00	High-Cap hanging carcass racking/hook system for space and capacity needs
	Trolley Racking System	$4,500.00	1	$4,500.00	
	Humidity/Temperature Monitoring System	$5,000.00	1	$5,000.00	
	Speed Racks	$150.00	6	$900.00	
	Refrigeration Equipment (Cold Production/Hanging Room)	$50,000.00	1	$50,000.00	
	Automated closing curtain or doors (receiving doors)	$2,500.00	1	$2,500.00	
	Commercial Meat Slicer	$3,500.00	1	$3,500.00	
	Industrial Sausage Stuffer/Grinder (manual)	$3,500.00	1	$3,500.00	
	Smoker/Closet (ea)	$25,000.00	1	$25,000.00	
	Blast Chiller Line (full set)	$60,000.00	1	$60,000.00	(most likely required if advanced set-up)
	Buffalo Chopper (large)	$10,000.00	1	$10,000.00	
	Commercial Dehydrator	$3,500.00	1	$3,500.00	
	Assorted Tools/Knives/Small Wares/Safety items	$20,000.00	1	$20,000.00	*aprons, gloves, assorted tools
	Steam oven/Convection Oven (Single)	$20,000.00	1	$20,000.00	
	Speed Racks	$150.00	6	$900.00	standard bun rack
	Basic steam vent hoods	$20,000.00	1	$20,000.00	For steam oven/convection oven
	Pallet Jack (Hand/Manual)	$2,000.00	1	$2,000.00	For moving boxes/animal carcass
	Aging (Humidity Equip/Racks/Etc..)	$30,000.00	1	$30,000.00	*most basic set-up for an 6x6 aging room
	Cryovac/Packaging Machine	$5,000.00	1	$5,000.00	
	OPTIONAL EQUIPMENT				
	Industrial Band Saw (Large)	$8,500.00	1	$8,500.00	upgrade

FACILITY COMPONENT	EQUIPMENT	EST COST (EA)	(#)	EST TOTAL COST	COMMENTS
	Office & Equipment for USDA Office Hub	$5,500.00	1	$5,500.00	*if required by local regulations
	Steam Jacket Kettle (ea)—40 gal	$30,000.00	1	$30,000.00	for stock/bone broths
	Knee/Stock Pot Burner (ea)	$1,000.00	1	$1,000.00	for stock/bone broths
	Hood & Equip to Run (including Ansel)	$50,000.00	1	$50,000.00	4-6 ft run (for additional cooking elements above)
	Pallet Jack (automatic)	$7,500.00	1	$7,500.00	
	Commercial Shrink Wrapper/Carcass Wrapper	$20,000.00	1	$20,000.00	
	Pallet Jack (automatic)	$7,500.00	1	$7,500.00	
	Blast Chiller—Rollin Closet (ea)	$60,000.00	1	$60,000.00	full size, 10 tray roll-in; upgrade all users
	Under-Counter/Work-Top Refrigeration	$3,500.00	4	$14,000.00	prep production (for in-production holding) upgrade
	Commercial Bagging Belt/ Manual Line	$4,500.00	1	$4,500.00	Upgrade for packaging
	GENERAL SPACE/SANITATION				
	3-bay sink (dish use)	$650.00	1	$650.00	
	2-bay sink (production use)	$450.00	1	$450.00	
	1-bay sink (deep, production use)	$250.00	1	$250.00	
	1-bay hand sink (required)	$150.00	1	$150.00	
	commercial spray hoses & faucets (all)	$150.00	3	$450.00	
FOOD HUB (AGGREGATION)	**REQUIRED EQUIPMENT**				
	Shelves/Racking (Basic Shelf Storage	$10,000.00	1	$10,000.00	High-Cap storage units (4-6 shelves tall) for space needs
	Shelves/Racking (Pallet Storage)	$15,000.00	1	$15,000.00	High-Cap storage set-ups with 2-3 stack height for space needs
	Humidity Gauge/Monitor	$250.00	1	$250.00	
	Temperature Gauge/Monitor	$250.00	1	$250.00	
	Automated closing curtain or doors (receiving doors) (2 in/out doorways)	$2,500.00	2	$5,000.00	
	Stainless Work tables (ea)	$200.00	4	$800.00	
	Pallet Jack (Hand/Manual)	$2,000.00	2	$4,000.00	
	Hydraulic Stacker/Lifter (Manual move)	$7,500.00	1	$7,500.00	
	Forklift (Basic)	$15,000.00	1	$15,000.00	
	Commercial Bagging Belt/Manual Line	$4,500.00	1	$4,500.00	
	Industrial Spinners (manual)	$450.00	2	$900.00	
	Industrial Produce Washtubs (Manual)	$500.00	2	$1,000.00	
	OPTIONAL EQUIPMENT				
	Pallet Jack (automatic)	$7,500.00	1	$7,500.00	
	Industrial Spinners (Automatic)	$4,500.00	1	$4,500.00	
	Industrial Sorter (automatic)	$10,000.00	1	$10,000.00	
	GENERAL SPACE/SANITATION				
	2-bay sink (production use)	$450.00	1	$450.00	

FACILITY COMPONENT	EQUIPMENT	EST COST (EA)	(#)	EST TOTAL COST	COMMENTS
	1-bay sink (deep, production use)	$250.00	1	$250.00	
	commercial spray hoses & faucets (all)	$150.00	2	$300.00	
	Misc. Small Items & Supplies	$7,500.00	1	$7,500.00	*ladders, garbage cans, etc..
STORAGE AREAS (SHARED)	**REQUIRED EQUIPMENT**				
Dry Storage Spaces (x2)—one space for in-process storage; one space for finished goods & supplies storage*	Basic Racking Shelves	$7,500.00	2	$15,000.00	*basic wire-rack shelving (open-shelf or pallet style) for shared storage space; based on square footage estimates (1 set-up per storage space)
**Shared by all inputs*	Locking Shelving/Cages	$1,500.00	4	$6,000.00	*72x36X54 with enclosed sides; x4 units for shared kitchen portion of storage space
	Lockout/Tagout Locks (dozen)	$50.00	4	$200.00	
	Humidity Gauge/Monitor	$250.00	2	$500.00	
	Temperature Gauge/Monitor	$250.00	2	$500.00	
Cold Storage Spaces (x2)—one space for in-process storage; one space for finished goods & supplies storage*	Basic Racking Shelves	$3,500.00	4	$14,000.00	*basic wire-rack shelving (open-shelf or pallet style) for shared storage space; based on square footage estimates (1 set-up per storage space)
**Shared by all inputs*	Locking Shelving/Cages	$1,500.00	4	$6,000.00	*72x36X54 with enclosed sides; x4 units for shared kitchen portion of storage space
	Lockout/Tagout Locks (dozen)	$50.00	4	$200.00	
	Humidity Gauge/Monitor	$250.00	2	$500.00	
	Temperature Gauge/Monitor	$250.00	2	$500.00	
	Room Walls, Box & Basic Refrigeration Equipment	$20,000.00	2	$40,000.00	*base minimum, based on @30'x30'
Frozen Storage Spaces (x2)—one space for in-process storage; one space for finished goods & supplies storage*	Basic Racking Shelves	$3,500.00	4	$14,000.00	*basic wire-rack shelving (open-shelf or pallet style) for shared storage space; based on square footage estimates (1 set-up per storage space)
**Shared by all inputs*	Lockout/Tagout Locks (dozen)	$50.00	4	$200.00	*72x36X54 with enclosed sides; x4 units for shared kitchen portion of storage space
	Humidity Gauge/Monitor	$250.00	2	$500.00	
	Temperature Gauge/Monitor	$250.00	2	$500.00	
	Room Walls, Box & Equipment	$25,000.00	2	$50,000.00	*base minimum, based on @30'x30'
	OPTIONAL EQUIPMENT				
	Automated closing curtain or doors (receiving doors) (optional)	$2,500.00	6	$15,000.00	*1 set per storage space/access upgrade
	Upgraded pallet doors (for walk-in boxes)	$5,000.00	4	$20,000.00	

FACILITY COMPONENT	EQUIPMENT	EST COST (EA)	(#)	EST TOTAL COST	COMMENTS
	Pallet Shelving Systems	$10,000.00	6	$60,000.00	*optional upgrade, 1 set per storage space/access upgrade depending on user needs
OFFICE SPACES	**REQUIRED EQUIPMENT**				
*Facility/Operations Offices	Shelving (Basic)	$2,500.00	1	$2,500.00	
	Desks	$500.00	2	$1,000.00	
	Chairs	$250.00	2	$500.00	
	File Cabinets	$300.00	2	$600.00	
	Computers	$2,500.00	2	$5,000.00	
	Central Printer	$7,500.00	1	$7,500.00	
	Conference Table	$3,500.00	1	$3,500.00	
	OPTIONAL EQUIPMENT				
	Central Hub/Server	$10,000.00	1	$10,000.00	
PUBLIC SPACES	**REQUIRED EQUIPMENT**				
Reception/Entrance Area	Desk/Chair/Set-Up	$5,500.00	1	$5,500.00	
Event/Multi-Use Space	Tables/Chairs For Events, Classes, Other Uses	$25,000.00	1	$25,000.00	
Retail (Vending)	Kiosk/Interface	$10,000.00	1	$10,000.00	
Staff Room	Shelves + Lockers	$10,000.00	1	$10,000.00	
	OPTIONAL EQUIPMENT				
Outdoor Food Truck Access	Grey Water Cleaning Hook-Ups	$10,000.00	2	$10,000.00	per bay
	Electric Hook-Ups/Charging Set-up	$7,500.00	2	$7,500.00	per bay
	Lockers/Locking Shelving	$2,500.00	1	$2,500.00	(exterior/locking)

Appendix 9: Case Studies

The following case studies depict existing enterprises, services, programming and operational structures that show case potential business models for the Agricultural Enterprise Center.

Case #1—Hub and Spoke Model: Red Tomato (Aggregation/Distribution)

Founded/Operational:	2000, Restructured in 2014
Business Structure:	Non-Profit
Operational Structure:	- Distribution Logistics - Market Development - Marketing (Branding)
Revenue Streams:	- Sale of Product (wholesale) - Grants
Financials	- Revenue (2018)- $746,676 - Expenses (2018)- $992,780

Red Tomato is a multi-structured, non-profit hub that was formed in 1996 in Plainville, Massachusetts. The hub addressed a number of issues as it grew, with the most significant being how to deliver its products to a growing base of customers. Due to the high cost of delivery operations, this hub had to reformulate an efficient and cost-effective way to deliver product to their expanding range of customers.

After taking a calculated risk, closing their warehouse, and cancelling truck leases, Red Tomato now operates by coordinating clusters of two to five producers in close proximity to one another. Because the farms have different infrastructures, with larger ones having access to coolers, trucks, and other equipment, Red Tomato sets up the networking of the farms within a region in order to work together to consolidate shipments at a larger farm's location, and assure that the cold chain is maintained throughout the process. Red Tomato works with over 40 fruit and vegetable farms and orchards across the Northeast.

Their distribution plan now relies on farmers with storage capacity to aggregate product, farmers, and distributors third-party logistics companies to move the product to its final destination. This shift has enabled Red Tomato to use the assets of local farmer and distributor partners – allowing Red Tomato to focus on sales, distribution, marketing, and product development.

Take-Aways & Insights for Operational Structure:

- **Direct-store-delivery program** (logistics)- After taking orders from individual stores, Red Tomato sources, aggregates, and coordinates trucking for product heading to locations throughout the Northeast.

- **Market Development**- Red Tomato partners with growers throughout the region in order to meet the needs of the grocery stores and build a continuous supply across the region. This model allows multiple farmers to partake, where, by themselves, they may not have had the supply to meet customer demand. They also provide consumer/buyer education around crops and local varieties of produce.

- **Packaging and Marketing** (branding)- Red Tomato created packaging and marketing programs that considers a diverse network of farmers. This includes signage, packaging, and digital marketing to expand impact and reduce cost for their grower network. This reinforces a strong, consistent message that ties Red Tomato's network together and helps eaters understand and appreciate the value of these farmers and regional agriculture.

Photos of Primary Case Study Site:

Case #2—Food Hub and Business Incubator: Vermont Food Venture Center (Owned by CAE)

Founded/Operational:	2011
Business Structure:	Non Profit
Operational Structure:	Multiple programs operating in a shared facility - 3 Commercial/Incubation Kitchen (500-600 square feet each) - Farm-to-Institution Supply Facilitation (Just Cut) - Farm produce and delivery service (Farm Connex) - 5,000 Square Feet Dry/Cold/Frozen Storage - Bottle Labeling
Revenue Streams:	- Commercial kitchen tenant revenues (low/high use fees) - Fee-for-Service - Services such as Storage, Bottling, Consulting - Equipment Rentals for Off-site use - Just Cut Produce Sales - Grants/Donations
Total square footage:	15,000 square feet
Financials	Revenue (2019)- $1,416,527 Expenses (2018)- $1,251,865

The Vermont Food Venture Center (VFVC) is a shared food hub and business incubator designed for food entrepreneurs and farmers seeking to grow their business. The VFVC offers three state-of-the-art, shared-use commercial kitchens for rent to food entrepreneurs, farmers, and community groups.

Farm and Food Programming:

- *Farm & Food Business Advising:* provides specialized support and business planning assistance to help farm businesses reach their goals
- *Shared-Use Commercial Kitchen:* offers three state-of-the-art, shared-use commercial kitchens for rent to food entrepreneurs, farmers, and community groups
    - Includes Cold and Frozen Storage Options, Bottle Labeling Machine
- *Just Cut:* An innovative social enterprise of the Center for an Agricultural Economy that provides institutions and individuals direct access to high-quality, ready-to-use produce. CAE aggregates root and storage crops from Vermont farms, processes/freezes/labels it for food buyers of any scale. This provides opportunities for food growers to reach new markets and maximize their farm's potential.
- *Farm Product Delivery Service:* CAE Farm Connex, purchased in 2019, operates only as a delivery service for small and medium farms and food businesses that might otherwise not have a way to get their products to market. CAE Farm Connex serves over 60 farmers—picking up products and delivering them to their markets. CAE Farm Connex operates 15 to 20 truck routes a week in 12 of 14 counties in Vermont.
- *Loans & Financing:* assists small business with business building and provides low-interest emergency loans and equipment financing to community members

Community Programming:

- *Place-Based Education:* partnership with regional school system to expand place-based and food systems education
- *Food Access & Equity:* collaboration with local partners to increase food independence, health, and well-being
- *Community Commons at Atkins Field:* 15-acre community park that hosts a farmer's market, community gardens and orchards, as well as land for recreational activities
- *Northeast Kingdom Organizing (NEKO):* cross-sectoral organization of community and involvement

Take-Aways & Insights for Operational Structure:

- Community partnerships are essential to maximize use of the facilities as well as provide sales outlets for food entrepreneurs
- Business advising and consulting services are essential to support beginning food entrepreneurs and encourage them to start their businesses
- Food safety training is also essential to ensure that young food entrepreneurs can legally sell their products
- Additional support services such as dry, cold, and frozen storage options and labeling are necessary to attract and support early-stage entrepreneurs who otherwise may not have access to these essential facilities
- Affordable, tiered pricing system allows clients to pay in accordance with how they are using the kitchen

In the News

Annual Report

Additional Case Study Examples

The Hatchery

Photos of Primary Case Study Site:

Case #3—Specialty Meat Distribution: Firsthand Foods

Founded/Operational:	2010
Business Structure:	For Profit
Operational Structure:	- Connects small beef, pork, and lamb producers to buyers - Work with several of the small-scale, family-run meat processors that are all USDA inspected - Focus on quality and traceability for buyers - Meat for retail is branded and includes initials of producers
Revenue Streams:	- Sales to individuals including subscription services (including in DC area) - Wholesale sales to restaurants, retail markets, etc. - Grants to offset start-up costs

Local small-scale farmers want to supply consumers in urban areas, but lack the time, infrastructure, scale and resources to move all the cuts of an animal. Firsthand Foods in North Carolina is a food hub that feeds the growing demand for locally sourced beef, pork and lamb. They work with small-scale processors to portion the meat and sell every single part of the animal to people who want it.

The bedrock of their business model is a network of small-scale pasture-based livestock producers who share Firsthand Food's values and standards. They sell Firsthand Food's their animals who then aggregates and schedules deliveries across their networks to ensure a consistent supply of fresh meats. In turn, Firsthand Foods provides farmers with meat quality and pasture management information, enabling them to adjust as needed to meet customers' exacting standards.

Take-Aways & Insights for Operational Structure

- Create product standards for producers to ensure consistent quality that is identifiable with the brand
- Low overhead costs- lease freezer space and rely on local processors
- Work with local restauranters/value-added producers to create specialized meat products

In the News

Progressive Farmer Magazine

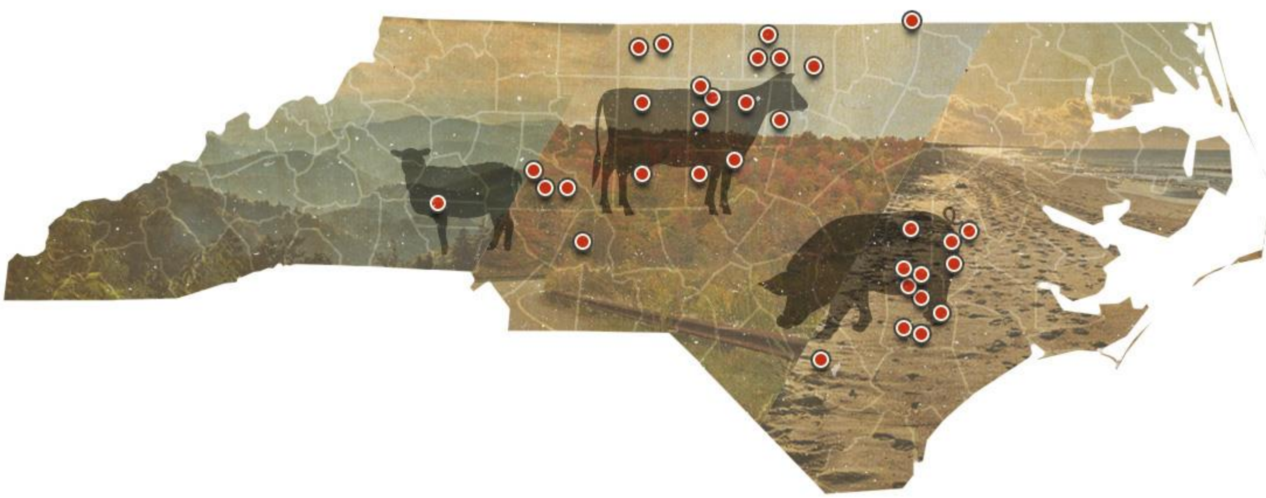
Firsthand Foods Is Disrupting the Way Meat Is Raised and Eaten in the Triangle

Additional Case Study Examples

- Happy Valley Meats, PA
- Butcher Box


HONEST
GOODNESS
FARMHAND
FOODS
(m)eat local
(m)eat local


FOODS
FIRSTHAND
FOODS
WE'RE ON A MISSION



Appendix 10: Site Selection Criteria

The following site selection criteria was provided to the CSPDC in order to assist in the identification of a potential site for the Agricultural Enterprise Center.

NEW VENTURE ADVISORS

BUILDING PROGRAM MATRIX: Proposed Shenandoah Ag Facility

Cursory Building Program Prepared for Site Selection

3/3/2021: Prepared by JGB

	SUMMARY	SF AREA LOW**	SF AREA HIGH**	
COLOR KEY:	HIGH BAY*	7,000	9,000	HIGH BAY
	LOW BAY*	3,000	5,000	LOW BAY
		10,000	14,000	SF BUILDING TOTAL

SEARCH FOR A 10,000SF to 14,000 SF BUILDING***

	AREAS	SF AREA RANGE	HIGH BAY or LOW BAY	MUST BE AT 1ST FLOOR?	MUST HAVE?
FOOD HUB	Cooling & Dry Storage, Aggreagation, & Loading/Receiving	3,000 to 4,000	High Bay	Y	Y
KITCHEN	Kitchen - Prep, Hotline, Scullery	1,500 to 2,500	Low Bay	Y	Y
	Kitchen - Toilets	100 to 200	Low Bay	N	Y
	Dry & Cooling Storage	*Hub Storage*	Low Bay	Y	Y
PROCESSING +	Meat Processing and Storage	3,500 to 4,000	High Bay	Y	Y
OFFICE	stations)	200 to 250	Low Bay	N	Y
PUBLIC	Reception	100 to 150	Low Bay	Y	Y
	Classroom/Multi-Purpose Room	700 to 1400	Low Bay	N	N
	TBD - Event	TBD	Low Bay	N	N
	TBD - Retail (kiosk)	TBD	Low Bay	Y	N
SUPPORT	Loading Dock (2 bays)	500 to 1000	High Bay	Y	Can be 1 bay****
	Mechanical Room	200 to 250	Low Bay	N	Y
	Staff Room	200 to 250	Low Bay	N	N
	Elevator	100.00	N/A	N/A	N/A
	Stairs	900.00	N/A	N/A	N/A
OUTDOOR	TBD - Outdoor Seating	TBD	N/A	Y	N
	Parking	local regulations	N/A	Y	Y
	TBD - Foodtruck (Parking &/or retail)	TBD	N/A	Y	N

* HIGH BAY is a high ceiling area, typically at least 13' from floor to underside of roof structure. LOW BAY is a low ceiling area, typically 9 or 10'.

** SF AREA LOW is the lower range of area required for the current building operations program; SF AREA HIGH is the higher range.

***The total SF area of the proposed building might be 10,000 SF at the low end of the range to 14,000 SF at the high end of the range.

**** The facility requires at least one dock that can ideally accomodate a semi-truck.

Appendix 11: Funding Guide

The following guide is a compilation of potential funding opportunities, updated for 2021, categorized by government grants, private grants, loans and equity.

Name (click for website)	Primary Focus	Description	Deadline/ Notes
		Government Grants—National	
Community Facility Grants	Economic Dev	Provides grants to assist in the development of essential community facilities in rural areas and towns of up to 20,000 in population.	Rolling application
Community Food Projects (CFPCGP)	Food Access / Insecurity	Funds projects that are designed to increase food security in communities by bringing the whole food system together to assess strengths, establish linkages, and create systems that improve the self-reliance of community members over their food needs	Due May. \$100,000-\$400,000; Requires 100% match
Conservation Innovation Grants (CIG)	Agriculture, local food	A competitive program that supports the development of new tools, approaches, practices, and technologies to further natural resource conservation on private lands. Some states have expanded this to include assistance for communities and groups to build and strengthen local food projects that provide healthy food and economic opportunities.	Due April
Economic Development Administration	Economic Development	The Economic Development Administration (EDA) has programs to support construction or upgrade of public facilities, planning, technical assistance for economic development, and more. **EDA CARES Act** Recovery Assistance, which is being administered under the authority of the bureau's flexible Economic Adjustment Assistance (EAA) (PDF) program, provides a wide-range of financial assistance to communities and regions as they respond to and recover from the impacts of the pandemic. EDA intends to deploy its CARES Act funding as quickly, effectively, and efficiently as possible, and in a manner that meets community needs.	Rolling Application.
Federal-State Marketing Improvement Program (FSMIP)	Agriculture	Funds project with one-to-one dollar match to assist in exploring new market opportunities for U.S. food and agricultural products, and to encourage research and innovation aimed at improving the efficiency and performance of the marketing system	≥\$250,000
Food and Agriculture Service Learning	Local Food, Education	To increase the knowledge of agricultural science and improve the nutritional health of children. The program's goal is to increase the capacity for food, garden, and nutrition education within host organizations or entities, such as school cafeterias and classrooms, while fostering higher levels of community engagement between farms and school systems by bringing together stakeholders from distinct parts of the food system.	Due May \$225,000

Name (click for website)	Primary Focus	Description	Deadline/ Notes
Local Food Promotion Program (Implementation Grants)	Local Food	Implementation Grants are used to establish a new local and regional food business enterprise, or to improve or expand an existing local or regional food business enterprise	$100,000-$500,000; Requires 25% match
Local Food Promotion Program (Planning Grants)	Local Food	Funds programs with a 25% match to support the development and expansion of local and regional food business enterprises to increase domestic consumption of, and access to, locally and regionally produced agricultural products, and to develop new market opportunities for farm and ranch operations serving local markets. Planning grants used in the planning stages of establishing or expanding a local and regional food business enterprise. Activities can include but are not limited to market research, feasibility studies, and business planning.	$25,000-$100,000; Requires 25% match
Rural Business Enterprise Grant (RBEG)	Economic Development	Funds programs that are designed to support targeted technical assistance, training and other activities leading to the development or expansion of small and emerging private businesses in rural areas	$10,000-$500,000
Small Business Innovation Research (SBIR)	Agriculture	Funds qualified small businesses to support high quality research related to important scientific problems and opportunities in agriculture that could lead to significant public benefits.	Due April/May ≥$100,000 ($8,000,000)
Specialty Crop Block Grant Program (SCBGP)	Agriculture	Funds projects that solely enhance the competitiveness of specialty crops. Specialty crops are fruits, vegetables, tree nuts, dried fruits, and horticulture and nursery crops (including floriculture).	Due November. $50,000-$450,000
Sustainable Agriculture Research and Education (SARE)	Agriculture	Funds programs that advance sustainable innovations in American agriculture. SARE is uniquely grassroots, administered by four regional offices guided by administrative councils of local experts. Funding covers the following the types of projects 1) Research & Education ($10K–$20K), 2) Professional Development ($20K –$120K), and 3) Produce Grants ($1K–$15K).	$1,000-$200,000
Value-Added Producer Grant (VAPG)	Economic Development	The VAPG program helps agricultural producers enter into value-added activities related to the processing and/or marketing of bio-based value-added products. Generating new products, creating and expanding marketing opportunities, and increasing producer income are the end goals of this program. Priority is given to beginning farmers or ranchers, socially-disadvantaged farmers or ranchers, small or medium-sized farm or ranch structured as a family farm, farmer or rancher cooperatives, or organizations proposing a mid-tier value chain.	Due April. ≥$250,000; Requires 50% match

Name (click for website)	Primary Focus	Description	Deadline/ Notes
		Private Grants (Nonprofit & Foundation)—National	
Ben & Jerry's Foundation	Varies	Supports small, grass-roots organizations with an annual budget under $500,000 focusing on community and root cause issues.	Due Oct or Feb $30,000
Cedar Tree Foundation	Varies	Funds projects focusing on children's health, regenerative grazing, fracking & energy extraction issues, and amplifying youth voices in relation to the environment.	NA
Chef Ann	School	Chef Ann Foundation is dedicated to promoting whole-ingredient, scratch-cooking in schools. Programs provide school districts with grant funds, salad bars, assessments, professional development, and free tools and resources.	Reopens Jan 2022
Clarence E Heller Foundation	Health	The mission of the Clarence E. Heller Charitable Foundation is to promote the long-term good health and viability of communities and regions. Focus areas include protecting the environment, regional planning, and sustainability in agriculture and food systems.	Due August
Food and Farm Communications	Communica-tions	The **Core Grants Program** awards targeted communications support to community-based nonprofit organizations and grassroots networks working to advance systemic and cultural change across our food and farm systems. Focus is on building power and shifting narratives, and to support organizations vested in the long view, with equity and resilience as central pillars of their vision.	Reopens Fall 2021; $35,000
Healthy Food Financing Initiative	Food Access / Insecurity	HFFI offers financial assistance to help healthy food retailers overcome higher costs and initial barriers to entry in underserved areas across the country. Focuses on projects that increase access to healthy fresh food for low-income and under-served populations.	Due July; $25,000-$200,000
Kresge Foundation	Health	Kresge supports equity-focused systems of health that create opportunities for all people to achieve well-being.	NA
Michael & Susan Dell Foundation	Food Access / Insecurity	The Michael & Susan Dell Foundation is dedicated to transforming the lives of children living in urban poverty through improving their education, health and family economic stability.	Rolling Deadline
Organic Valley	Organic Farming	Grants are awarded to research, education and advocacy projects that advance Farmers Advocating for Organic's mission: to protect and promote the organic industry and the livelihood of organic farmers.	Varying Deadlines; $50,000

Name (click for website)	Primary Focus	Description	Deadline/ Notes
Robert Wood Johnson Foundation	Health	Pioneering Ideas: Exploring the Future to Build a Culture of Health seeks proposals that are primed to influence health equity in the future of food.	Due June
Wells Fargo	Economic Development	Wells Fargo supports organizations that work to strengthen communities through projects that keep communities strong, diverse, and vibrant. Priority is given to programs and organizations whose chief purpose is to benefit low- and moderate-income individuals and families.	Rolling Deadlines
Wholesome Wave Foundation	Food Access / Insecurity	Wholesome Wave empowers underserved consumers to make better food choices by increasing affordable access to healthy produce.	Rolling Deadline
Claneil Foundation (New England, Mid-Atlantic)	Health, Local Food	Located in the Philadelphia region, Claneil seeks to improve the health of families and communities through efforts that address the intersection of food, health, and the environment. The Foundation provides general operating and program support grants locally, innovative food waste solutions, and awards seed funding to early-stage social entrepreneurs that have the potential for significant impact in the New England and Mid-Atlantic regions.	Due Dec. $15,000-$100,000
Merck Family Foundation (Northeast/ Southeast regions)	Urban Farming, Environment	Restore and protect the natural environment and ensure a healthy planet for generations to come; Strengthen the social fabric and the physical landscape of the urban community.	Due Jan or July
		Loans—National	
7(a) Loan Program, SBA	Varies	The program provides new and growing businesses with loans of up to $5 million with an SBA guaranty of 75% to 85%. Loans may be used to purchase equipment, inventory, fixtures, leasehold improvements, working capital, debt refinancing for compelling reasons, change of ownership.	≥$5,000,000
Certified Development Company (504) Loan Program, SBA	Varies	The program provides growing businesses with long-term, fixed-rate financing for major fixed assets, such as land and buildings. 504 Loans are typically structured with SBA providing 40% of the total project costs, a participating lender covering up to 50% of the total project costs, and the borrower contribution 10% of the project costs. Under certain circumstances, a borrower may be required to contribute up to 20% of the total project costs.	
Community Facilities Direct and Guaranteed Loans	Economic Development	Provides loans and loan guarantees to assist in the development of essential community facilities in rural areas and towns of up to 20,000 in population.	

Name (click for website)	Primary Focus	Description	Deadline/ Notes
Farm Storage Facility Loan Program	Agriculture	The Farm Storage Facility Loan Program (FSFL) provides low-interest financing so producers can build or upgrade facilities to store commodities.	≥$500,000
ACCION	Varies	ACCION is dedicated to providing financing and business education to small businesses across the country. They offer loans of up to $15,000 for start-up businesses and $25,000 for established businesses. They also offer Credit Builder loans between $200 and $2,500	≥$25,000
RSF Social Investment Fund	Economic Development	RSF provides loans to social enterprises that have impact across the food and agriculture supply chain and enable local economies to flourish.	$50,000-$400,000
Whole Foods Local Producer Loan Program	Local Food	Providing up to $10 million in low-interest loans to independent local farmers and food artisans.	$10,000-$100,000 ($25,000,000)
Equity Trust Fund	Local Food	The Equity Trust Fund is a revolving loan fund capitalized through gifts and loans from socially motivated donors and lenders, primarily individuals and families, but also including religious orders, land trusts, nonprofits and other organizations.	$5,000-$150,000
Community Development Finance Institute	Economic Development	1) Healthy Food Financing Initiative—Financial Assistance awards are also offered for CDFIs that are interested in expanding their healthy food financing activities 2) Native Initiatives program creates jobs, builds businesses, and fosters economic self-determination in Native Communities nationwide	NA
Local Initiatives Support Corporation (LISC)	Economic Development	Healthy Food Projects Loans: Nonprofit and for-profit operators of healthy food businesses including retail food stores, farmers markets, food coops and other healthy food production or distribution activities. Nonprofit and for-profit development organizations providing space for healthy food operations.	NA
Blue Hub Capital	Economic Development	BlueHub Capital's New Markets Tax Credit (NMTC) program invests in community and economic development projects that create jobs and opportunities in economically distressed communities nationwide.	NA
Capital Partners	Local Food	Capital Impact Partners is demonstrating the impact that increased access to fresh, healthy foods can have by financing new stores, expansion of existing stores and innovations such as mobile markets and food hubs that scale distribution efforts	NA

Name (click for website)	Primary Focus	Description	Deadline/ Notes
Slow Money	Local Food	The Slow Money Institute catalyzes the formation of self-organizing local groups, which use a diversity of approaches: public meetings, on-farm events, pitch fests, peer-to-peer loans, investment clubs and, most recently, nonprofit clubs making 0% loans.	NA
		Equity—National	
Small Business Investment Company (SBIC)	Economic Development	The Small Business Investment Company (SBIC) Program works with private investment funds licensed as SBICs to provide growth capital to U.S. small businesses. Although SBICs regulated by SBA, they are private, profit-seeking investment companies that make independent investment decisions. This directory will provide you with the contact information needed to learn more about the SBIC Licensees in your state. See link for participating institutions.	$100,000
Cultivian Sandbox Food & Agriculture Fund	Agriculture	Cultivian Sandbox is a venture capital firm focused on building next-generation food and agriculture technology companies capable of generating superior returns.	$5,000,000
SJF Ventures	Varies	Provides venture financing for companies in the cleantech, consumer brand, business services, and Web-enhanced services markets. Funds provide equity financings from $1MM to $10MM, solo or in syndicates, to companies seeking expansion capital. Representative investment areas include renewable energy and efficiency, recycling, grid and infrastructure technologies, organic and healthy consumer products, digital media and marketing services, and outsourced business services.	$1,000,000

Appendix 12: List of Sites Mapped

AUCTION
Shenandoah Produce Auction

CANNERY
Prince Edward County Cannery
Country Canner

COMMERCIAL KITCHEN/INCUBATOR
The Highlands Center
Commercial Prep Kitchen

CO-PACKING
Friendship Industries
Prince Edward Cannery (Virginia Food Works)

FOOD HUB
Local Food Hub

MEAT PROCESSING
Alleghany Meats Market
D&M Meats
Donald's Meat Processing
Farmer Focus
Gores Processing
True and Essential Meats
Virginia Poultry Growers

MILL
Wade's Mill

FRUIT PRODUCERS
A Better Way Farm
Adam's Apples
Blue Ridge Berry Farm
Champion Strawberries
DL Shipp Farm
Hobbit Hill Farm
Jerrys Gourmet Berries
Long Acre Farm
Mowery Orchard
Purple Rooster Organics
Rachel Jane's Jams and Berries
Ratliff Blueberry Farm
Rendezvous Farm
Ryan's Fruit Market
Showalter's Orchard
Sunrise Orchard
Sweet Rose Farm
Swover Creek Farms
Turkey Knob Growers
Valley Farming
Virginia Gold Orchard
Wenger Grape Farm
Happy Days Farm
Tonoloway Farm

FRUIT & VEGETABLE PRODUCERS
Cross Keys Farm
Double O Farm
Dancing Star Farm
Digger Jay's Wild Edibles
Glen Eco Farm
Sinclair Farms
Survivor Farm
Troyers Fruit & Produce
Valley Creekside Farm
Virginia's Own

VEGETABLE PRODUCERS
Avalon Acres
Calixto Farm
Church Hill Produce
Crooked Run Farm
Deauville Farm
Dig This Produce
Elk Run Farm
Flower Fields
Geezer Farm
Harvest Thyme Herbs
Hickory Hill Farm
Lincoln Homestead Farms
Little g Farms
Lonesome Farms
Malcolms Market Garden
North Mountain Produce
Paradox Farm
Poplar Ridge Farm
Port Farm
Portwood Acres
Public House Produce
Radical Roots
Saint Isidore Homestead
Season's Bounty Farm
Second Mountain Farm
Shenandoah Growers and Fresh Cut Herbs
Snow Spring Farm
Stovershop Greenhouses
The Farm at Willow Run

Ulmer's Mountain View Farm
Verdant Acres Farm
Wayside Produce Farm
Wildwood Gardens
Wind Runner Farm
Witmer Farm
Wood's Edge Farm

MEAT/POULTRY PRODUCERS
1Tribe Farms
Addison Patch Farm
AJ Farms, LLC
Autumn Olive Farms
Autumn Olive Farms
Baker Farms
Basinger Beef
Beatrix Farm
Bells Valley Hens
Ben and Blake Myers
Bowman Livestock, Inc., and Blessed Acres Farm
Broadview Ranch
Buffalo Creek Beef
Burner’s Beef, LLC
Cannon Hill Farm
Casta Line Trout Farms
Cedar Spoke Farm
Cestari Sheep and Wool Company
Charis Eco-Farm
Country Rhodes Farm
Double H Pigs
Dutch Hollow Cattle Company
Fairview Oaks Farm
Fawn Crossing Farms
Glass View Farm
Good Plains Farm
Grazelen Farm
H and H Farms
Healing Farm
Hollands Three Rivers Farm
Holsinger Homeplace Farms
J&L Green Farm
Khimaira Farm
Lazy W Farm
Lineage Farm
Living Water Farm
Long Roots Farm LLC
McNett Angus Beef
Meadow Runs Farm
Meadow Springs Farm
Meadow’s Pride Farm
Moo Manor
New Hope-JMD
Orndor-’s Rainbow Trout Farm
Paradise Farm
Patterson’s Registered Berkshires
Plainview Farm
Polyface Farms
Quiet Acres Farm
Rexrode Cattle Company
Riven Rock Farm
R-W Farm
Shenandoah Valley Beef Cooperative
Shenandoah Valley Organic
Small Axe Farms
Spring Creek Trout Farm
Sunrise Farms
The White Barn Company
Virginia Trout Company
Weaver Dorper Sheep
A Better Way Farm & Goat Dairy
Creambrook Farm Services, LLC
Green Haven Farm Cheeses
Main Street Farmstead
Mountain Branch Creamery LLC.
Mountain View Farm Products
Mt. Crawford Creamery
Portwood Acres
Razzbourne Farms
Shenandoah Valley Family Farms
Smiley’s Ice Cream
Tomahawk Farm, LLC
Ville View Enterprises, Inc.
Sunnyfield Farm

VALUE-ADDED PRODUCERS
Andros Foods North America
Back Creek Farms
Blue Ridge Bucha
Bruce's Syrup
Cub Run Tea
Farmer Brown's
Firefly Hot Sauce
Golden Angels Apiary
Green Acres Popcorn
Henry's Hot Sauce
Hott Apiary
Joe's Sausages
Kitch'n Cook'd Potato Chip Co., Inc.
Laurel Fork Sapsuckers
Lincord Farm
Meadow Croft Farm
Millcroft Farm

Mother Earth Products
Peg's Salt
Pu-enbargers Sugar Orchard
Pure and Simple Farm
Red Root
Rendezvous Farm
Rockbridge Cider Vinegar
Route 11 Potato Chips
Shenandoah Spice Co
Simply Cheddar
So Bee It!
Staff of Life Bread Co
Stony Creek Farms
Teeny Tiny Spice Co
Terry the Cookie Man
The Family Fruit Basket
The Shack
Thorny Bottom Bees
Toms Brook Busy Bee
Ula Tortilla
Whistle Creek Apiaries

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Appendix 14: New Venture Advisors Team Bios

KATHY NYQUIST

FOUNDER AND PRINCIPAL *NEW VENTURE ADVISORS*

In 2009, Kathy founded NVA to bring advanced business strategy, thought leadership and entrepreneurial momentum to the emerging sustainable food industry. Her work has led to numerous assessments, business launches, speaking engagements and publications focused on the rebuilding of local food systems.

Kathy has served as a board member and advisor to numerous organizations including the Good Food Accelerator which offers training and mentorship to emerging food entrepreneurs; Garfield Produce, a hydroponic farm producing microgreens and herbs for Chicago-area chefs and providing jobs for those affected by poverty in the East Garfield Park neighborhood; and the Food Hub Management Program, a certificate program offered by the University of Vermont.

Kathy has over 20 years of marketing and strategic leadership experience with Fortune 100 companies. She served on the leadership team for a $5 billion product portfolio at Kraft Foods. She previously managed accounts at Leo Burnett and Young & Rubicam, then the nation's largest advertising agencies, developing national campaigns for clients such as Coca-Cola, Keebler, Frito-Lay and Miller Brewing.

A graduate from the University of Chicago Booth School of Business, Kathy earned an MBA with honors and the Dean's Award for Strategy for achieving the highest academic record in Strategic Management. She also holds a BS in economics from Bradley University.

MELISSA HAMILTON

ENGAGEMENT LEADER *NEW VENTURE ADVISORS*

Melissa is a savvy strategy and finance professional with 12+ years of experience working with public, private and early and growth stage startup companies on diverse projects. She has extensive experience working directly with senior executives on value creation projects that have involved building financial models, building products, developing and analyzing metrics, creating business cases, streamlining operations and processes and assessing market and industry dynamics. Melissa started her consulting career at PricewaterhouseCoopers and has since worked in the technology, startup and venture investment spaces. She is a champion of high-tech innovation in the food and healthcare industries.

Melissa has a passion for community service and is an engaged philanthropist. She currently gives of her time and talents as a Board Director for two nonprofit organizations, MAPSCorps and Social Venture Partners Chicago. She has also volunteered with the Taproot Foundation and helped non-profits think about building and scaling sustainable food operations. Melissa holds a Bachelor of Science in Accountancy and a Master of Accountancy from the University of Missouri-Columbia, where she was a George C. Brooks Scholar, and an MBA from the University of Chicago Booth School of Business. Melissa is a licensed CPA in Illinois and Missouri.

CAROLINE MYRAN

PROJECT MANAGER *NEW VENTURE ADVISORS*

Caroline is a food-systems analyst, a farmer, and a specialist in values-based local food procurement. Before joining New Venture Advisors, she spent eight years in non-profit communications, media relations, and fundraising for mission driven organizations and international NGOs. She also worked in rural Montana to develop a farm to school program that addressed food insecurity and food access.

Prior to NVA, she was the Director of Farm to Fork initiatives at ag-tech start-up, ripe.io, a blockchain-based platform providing traceability of produce from farm to plate. Most recently, Caroline has led food system analyses and food center feasibility studies for NVA across the U.S. from Texas to Virginia to the Oneida Nation in Wisconsin. She has worked on farms in Vermont, Montana, New York, and Massachusetts. Her graduate thesis focused on connecting local producers to wholesale markets in traditionally underserved communities in Western Massachusetts.

Caroline has an M.S. in Sustainability Science with a concentration in Sustainable Agriculture and Food Systems from the University of Massachusetts, Amherst and a B.A. in Environmental Policy from Barnard College. She currently lives in Massachusetts with her husband and 3 daughters.

ANNIE KALAVAGUNTA

FINANCE SPECIALIST *NEW VENTURE ADVISORS*

Annie's diverse experience and expertise includes valuations, private equity and portfolio company operations. In addition to her role as Financial Specialist with New Venture Advisors, Annie runs her own financial consulting business, Peartree Management LLC, providing small- and medium-sized enterprises with services such as financial modeling, budgeting, operations, planning, and interim CFO work. She has been engaged by companies across industries in technology, healthcare tech, finance, real estate, manufacturing and distribution. Prior to starting her independent consulting journey, she spent 10 years at Quarry Capital Management a private equity firm focused on acquiring underperforming companies and working with management to improve their financial and organizational health.

Annie enjoys using data and analytics to make impactful and sustainable changes in the organizations she is a part of. Annie received her MBA from the University of Chicago Booth School of Business, M.S. in Finance from Southern New Hampshire University and a B.S. in Computer Science from Bangalore University. She is a Chartered Financial Analyst.

SHEREE GOERTZEN

RESEARCH ANALYST *NEW VENTURE ADVISORS*

In addition to conducting research and writing for New Venture Advisors, Sheree is a grant writing and development strategy specialist for nonprofits. She spent over 12 years providing public social services to youth and families and coordinating community development projects. She built partnerships between government, nonprofit and private sectors to bring investment to an under- resourced neighborhood.

Sheree grew up on a large farm in Nebraska where her family are fourth generation farmers. She has a M.S. in Urban Studies from the University of Nebraska-Omaha School of Public Administration.

DEB WILKINSON

OPERATIONS MANAGER *NEW VENTURE ADVISORS*

In addition to her role managing internal operations with New Venture Advisors, Deb serves as a recruiter for the nation's leading consulting firms. Currently at Accenture, she focuses on behavioral interviews for experienced candidates globally. She previously oversaw operations and processes for the U.S. recruiting team at Mercer and worked with all international locations to ensure global consistency in recruiting processes and systems. Prior to that, Deb was back at Accenture/Andersen Consulting in recruiting and consulting roles.

Deb graduated from Purdue University with a BS in Management. She later earned an Associate Degree from Le Cordon Bleu College of Culinary Arts in Chicago, IL. This experience drove her to start a personal chef delivery business in Chicago focusing on healthy foods for busy families.

JOEL BERMAN, LEED-AP, NCARB

KITCHEN DESIGN SPECIALIST *BERMAN ARCHITECTURE*

Joel is known for his practical restaurant design and layouts. He is the founder and president of Joel Berman Architecture & Design, Ltd., a Chicago architecture firm specializing in commercial kitchens, food service, restaurants, bars, hospitality, and adaptive reuse and heritage restoration.

Joel has led a wide variety of culinary projects throughout his career, from restaurants in underserved communities to an award-winning preservation and renovation of a 1920s White Castle Hamburger building. He has designed more than 100 commercial kitchens, including five co-working facilities, and takes a custom approach to each project to ensure that sanitation, equipment, storage, refrigeration and workflow space is optimized for each use case. Joel lends this practiced knowledge to NVA's development process to design facilities that meet the community's needs today and are scalable for the future.

ANDREA CARBINE

KITCHEN OPERATIONS SPECIALIST *NEW VENTURE ADVISORS*

Andrea is a restauranteur and decorated chef with a background in sustainable practices. She has launched, operated, scaled, and sold her own entrepreneurial ventures. She was recently General Manager and Operations Lead at Pilotworks, a former culinary co-working space that gave food makers commercial kitchen space, mentorship, and the tools needed to build, scale, and develop their businesses and products.

These experiences make Andrea an exceptional strategist and consultant to young food businesses and creative entrepreneurs as they scale and develop. Today she consults with New Venture Advisors in the development of food processing facilities and food business incubators, helping to design operating models and programs that are tailored to the unique needs of kitchen users and entrepreneurs in the region.

EMMY NYQUIST

RESEARCH ASSISTANT *NEW VENTURE ADVISORS*

Emmy is a sophomore at Grinnell College with a focus in psychology, economics, and mathematics. After graduating, she plans to pursue an MBA or attend law school. As an intern at NVA, Emmy is mastering new software and technology platforms, and enjoys learning about food systems and business consulting. In her free time Emmy likes to play sports, especially basketball and volleyball, in which she lettered four years and continues to play in college.