Feasibility Study

For

A Small Farm Cidery in Nelson County, VA

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EXECUTIVE SUMMARY

Nelson County is located in Northwest Virginia and is gathering information on the feasibility of a small farm-sized cidery producing alcoholic hard cider located within the county limits.

This study reviews the economic and technical possibilities of a small farm-based cidery business venture. The Virginia Foundation for Agriculture, Innovation, and Rural Sustainability (VAFAIRS) has been hired to undertake the study. Matson Consulting has completed the study on behalf of VAFAIRS.

This feasibility study has determined that the venture CAN BE both technically and economically viable. The venture experiences losses in the first year of the study, but these are overcome with the projected profits in the following two years. Though potentially feasible, the prototypical assumptions used to evaluate the project are subject to change depending on market circumstances and the ultimate business structure and product mix decided on by the potential cidery.

The cost or ability to produce or source quality hard cider apples from primarily local orchards, though equally critical for the ultimate success of the venture, is outside of the scope of this study. Its impact and risk is not evaluated or considered. The general technology for hard cider production is well established and has been in use for centuries. The process itself is both legally and technically feasible.

This operation may face a series of risk factors and uncertainties that will need to be surmounted in order to establish a successful enterprise. These risks include an increasingly competitive marketplace with existing players, and operating costs which are higher than commercial competitors' costs (processing operations). A list of several potential risks is included in this report.

The model shows that the cidery will require $95,000 of additional capital to counteract negative cash flows. Most of this equity will be used to fund the purchase of about $187,000 of equipment.

During the first year of the study, the cidery functions at a net income basis of $1,400 for the level of 4,400 gallons of hard cider. By year three, the cidery has a net profit of over $46,000 based on sales of 8,000 gallons of hard cider.

Sensitivity analyses are provided that show that feasibility is impacted by labor costs, total sales volumes sold, sales price, percentage of product mix, price of apple variety inputs, equipment purchases, and product sold through various sales venues. Considering the scale of the cidery's production, variations in some variables, particularly sales price and volume, negatively impact feasibility.

The hard cider industry continues to show signs of significant growth. However, as a whole, the hard cider industry is a very small part of the overall alcoholic industry. As such, while growth

within the hard cider segment may substantial, overall, the segment of alcoholic market share remains small.

This study attempts to analyze a prototypical cidery, rather than any operation currently in business. Through analysis of the wine and hard cider industries, and examination of existing hard cider businesses, the study was based on a prototypical cidery comprised of a broad range of industry factors and components.

The analysis in this report is based on market research and the best estimates of the client and the consultants. There will be differences between the projected and actual results, due to unforeseen events and circumstances, as well as the prototypical nature of the study. Numbers may not always exactly add or compare due to rounding errors, but the small differences do not affect financial results.

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TASK LIST

To complete this feasibility study, the following tasks were undertaken:

- Visits were made to the client. These visits included strategic information sessions, conference calls, as well as meeting with various producers in order to clarify information.

- A literature and database search was completed, the results reviewed, and conclusions drawn. The results of this literature search are provided in throughout the document.

- Similar activities in other cideries and sales prices for their products were researched.

- Research was gathered from people within the region that are knowledgeable of the industry. Details of the information collected, and the conclusions are included.

- Consultations were made with the key staff of Nelson County as to the accuracy of the assumptions utilized in earlier drafts.

- Based on the information gathered from all sources, assumptions of throughput and pricing were made and financial models were prepared. Details of assumptions and the financial models are included.

FEASIBILITY STUDY FOR NELSON COUNTY

Introduction

VAFAIRS was hired by Nelson County in March 2012 to conduct a feasibility study that would provide an in-depth analysis of the possibility of establishing a farm-based cidery in Nelson County. To make the feasibility study as realistic as possible, Matson Consulting is working with Nelson County to determine the key operational points:

a) Determine critical factors for success
b) Assess management and operation options
c) Estimate operating costs for the operation
d) Develop financial model for sensitivity studies
e) Create feasibility study report

A financial model for the business venture will also be developed within this task; this will allow Nelson County to conduct the sensitivity scenario assessments that will be needed in the business decision process for the cider venture.

Data was gathered from several sources, including market structures, government statistics, and the knowledge of the consultants. The data indicates that the region includes a significant apple industry that offers opportunities to create a distinctive line of ciders.

This report will assist Nelson County in its evaluation of the potential markets for the venture's products, and it will quantify these market opportunities so that the consumer demand for the venture will be known.

This report presents the results of this effort along with Matson Consulting staff recommendations. It is important to note that while every effort was made to reflect reality in the description of a typical cidery, the model ultimately decided upon is not intended to reflect any existing business, but is instead a reflection of the industry and is meant to be purely prototypical in nature.

As a prototype, the study represents a small-farm cidery with moderate financial resources. It is the goal of this consultancy to create a study that is as adaptable to as many similar ventures as possible. Year one of the study is not considered the startup of the project, the three years of the study are intended to represent a typical three year period during the early development of a prototypical cidery located in Nelson County, Virginia. The three years of this study represent a three year snapshot of operations.

GENERAL SETTING AND NEED FOR THE PROJECT

While it originated in Europe, alcoholic cider was brought to North America by European settlers and was often used as a substitute for clean water. The light alcoholic content killed off parasites and provided a ready source of potable liquid that alleviated the concern for illness from drinking a tainted water supply.

Hard cider was one of the most popularly available beverages up to the Civil War. After the war was over, German immigrants brought with them the tradition of beer. Because one could produce it quicker (grain could be raised in a single season, whereas apple trees took several years to become fruit bearing) and cheaper, beer soon began overtaking cider in popularity. After prohibition, cider production never recovered and largely disappeared.

The United States is experiencing a revival of interest in craft brewing. In addition to small scale production of artisan beers, the craft brewing resurgence has also come to involve another historic beverage: hard cider. This increased interest has led to a recent explosion in popularity and production of hard cider products. Not only are many new small-scale cideries opening, but larger companies, who were traditionally involved in beer production, are taking notice of this growing industry and producing commercial hard cider products or buying smaller established cideries in order to assimilate their brand and corresponding market share.

Project Definition and Objectives

The goal of this project is to assess the feasibility of establishing a small-scale, farm-based cidery within Nelson County, VA. Because the county has had a revived interest in the apple industry and national interest in locally produced hard cider products seems to be growing, Nelson County has commissioned this study.

The prototypical cidery will produce hard cider products for sale at a tasting room, for events to be held on the farm's property, and for other points of sale. The cidery is anticipated to produce up to 3,500 cases (8,400 gallons) of cider per year. This figure was chosen with input from the client, and so that sales numbers would be in a range such that the cidery could take advantage of distribution through the Virginia Winery Distribution Company ("VWDC") while remaining in accordance with the rules set forth in the Code of Virginia.

This study designates the business as a small farm cidery. The use of this term was determined by the client and is used in a relative manner to denote the fact that the cidery is not intended as a large-scale industrial operation. The term small farm can be associated with many definitions, but does not reference a standardized definition in this study. It is beyond the scope of this study to define specifically what a small farm is. The term is used to discuss the range that we have selected for this study. Labor, production and equipment are relative to the scale of the operation and may vary in regards to medium or large scale operations.

As is typical in this scale of operation, it is anticipated that the majority of the labor needed to operate the cidery will be provided by the owners and their family. Most small family operations rely on labor provided with minimal or no cost to the new business. If the cidery will be based on its own orchard, in order to support the expected production of 3,500 cases, it will be necessary to have a site consisting of an orchard of at least 5 acres, representing an estimated 3,500 bushels of apples. Operations of different scales may need to adapt to meet their production needs.

Initially, the cidery is anticipated to operate with adequate staff and equipment. As the business grows and expands, additional staff and equipment may be necessary. This study includes the potential for the cidery to support a marketing budget at the level that would permit it to grow to

serve the region. This study will assume a level of staff and equipment necessary to maintain an efficient operation in the future.

Project timing consists of three years of operation for a small farm cidery. It is assumed that the cidery has been in regular operation for a minimum of two years by the beginning of the study's first fiscal year. Thus, this study does not account for startup costs for the cidery. This is expanded further in the document.

Maximum production during the study will be reached in the third year, reflecting 3,500 cases of cider. This production timetable could be accelerated under favorable conditions, as well as slowed by adverse conditions.

To some extent, marketing the cider will be tied to marketing the product at events at the cidery. However, some questions must be asked:

1. Should the cidery focus on small artisan ciders or more commercially applicable recipes?
2. Is the apple supply available to produce the intended volume and quality of cider?
3. At what level does the cidery need to operate in order to be profitable?
4. What equipment would be needed as the cidery expands?
5. What additional monies might be needed?

This study will evaluate the conditions under which the business could become commercially viable and profitable.

Evaluation Criteria

The success of this project will be judged on two criteria: 1) evaluation of the potential market for hard apple cider, specifically growth potential and feasibility, and 2) an assessment of whether hard apple cider can be produced and delivered to market profitably.

PROJECT RATIONALE

Nelson County has recently received a grant for the purpose of supporting the production and expansion of hard cider (fermented apple juice) businesses in Virginia. Because of the county's concentration of apple producers and a revived interest in hard cider products nationally, this study will focus on the economic viability of producing hard cider using mostly Virginia-grown fruit and growing specialized hard cider apple varieties.

Nelson County is also attempting to determine the feasibility of establishing a farm-based cidery within the county, as well as the ability of the apple market to support such a venture.

Nelson County is determined to help local farmers meet the challenges of modern day farming. They recognize the need for producers to add value to their products by marketing them directly to the consumer whenever possible. They are committed to farming and the preservation of farmland.

Marketing is the challenge that faces all farmers and independent producers. Farmers have become very good at production; time, money and energy get poured into production. There is

little left for marketing, which is an entirely different business. As a result, the farmer is the last to reap the financial rewards of their efforts. Others, rather than farmers, are benefiting from the value added that is required to market effectively.

Nelson County is actively seeking ways to help farmers market their product directly to the end-users, thus increasing returns. Such marketing is critical for the farm to be viable in this increasingly competitive environment.

The importance of branding cannot be overstated. The cidery will need to create a brand "look and feel" that will be used for business cards, rack cards, its website and all materials, and will help provide a market presence for the venture.

The Mid-Atlantic Consumer Marketplace

A cidery located in Nelson County would be well situated to serve the Mid-Atlantic region. The region is experiencing strong population growth. The Commonwealth of Virginia possesses an extensive and efficient interstate highway system and numerous commercial airports, thereby providing marketing opportunities for high value products and niche market agricultural products. It is possible to access the consumer demographics that are upwardly mobile in terms of income, culturally and ethnically diverse, and well educated.
According to the U.S. Census Bureau, Virginia's population grew by 690,891 between April 1, 2000 and July 1, 2009, resulting in a total population of 7,882,590 people. This placed Virginia seventh in population growth among all fifty states.

Both the Mid-Atlantic and South Atlantic regions are comprised of some of the nation's most populated areas. These are areas that could easily be reached with marketing efforts by Nelson County. Parts of the central regions of the country can also be penetrated by Nelson County marketing efforts. Table 1 shows the large potential consumer base of a Virginia cidery.

Table 1: Metropolitan Areas Within Nelson County's Marketing Arena[1]

Metropolitan Statistical Area (MSA's)	2005 Est. Population	U.S. Rank	2009 Est. Population	U.S. Rank
Richmond – VA	1,176,000	45	1,238,000	43
Washington – DC/MD/VA/WV	5,215,000	8	5,476,000	8

Richmond. The city of Richmond has a population of 204,451[2] (2009), representing around 3% of Virginia's population. The population has increased by 3.4% since 2000. 47% of the population is male and 53% is female. The median resident age is 33.9 years old, compared to 35.7 for all of Virginia. In 2009, 20.2% of the population was under 18 years old. The median household income in 2008 was $36,968.

[1] U.S. Bureau of the Census, State and Metropolitan Area Data Book Version 6 2006, table B-1. http://www.census.gov/popest/counties/CO-EST2005-01.html. For 2009 Metropolitan and Micropolitan Statistical Area Estimates Population Change and Rankings http://www.census.gov/popest/metro/CBSA-est2009-pop-chg.html
[2] http://quickfacts.census.gov/qfd/states/51/51760.html

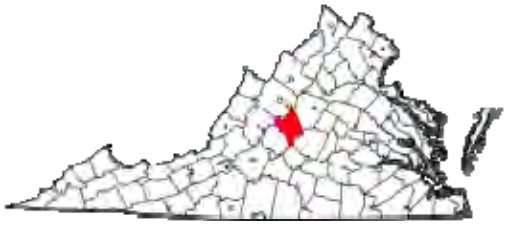
Roanoke. In 2009, the city had a population of 92,482 representing approximately 1% of Virginia's population[3]. The population decreased by 0.5% since 2000. Forty seven percent of the population is male and 53% is female. The median resident age is 37.6 years compared to 35.7 for Virginia. The median household income in 2008 was $36,234 (it was $30,719 in 2000).

Lynchburg. The city of Lynchburg has a population 65,269 or around 1% of Virginia's population. It has 27,640 housing units with a population density of 1,321.48 people per square mile according to the 2000 US Census. The median household income in 2008 was $40,396[4] .

Northern Virginia. Within Virginia state lines, Northern Virginia leads in population size (2,551,197 people in 2009) and growth. Geographically, Northern Virginia encompasses seven percent of the state's land area.[5] Fairfax County is the largest locality in the state with a population of 1,081,726, growing by more than 85,000 people between 2000 and 2010[6]. The median household income for the county was 102,500; the unemployment rate was 5.4% in 2009 and in 2005 87.6% of households had home computers with internet access.[7]

NELSON AND ALBEMARLE COUNTY VIRGINIA

Nelson County Virginia[8]



Formed in 1807 from neighboring Amherst County, Nelson County was named in honor of Thomas Nelson, Jr., the third governor of Virginia. Nelson County's original agricultural products included tobacco, apples, and chestnut trees; transportation was mainly achieved by canal and railroad.

Nelson County is centrally located between Charlottesville and Lynchburg, and is within driving distance of Richmond, Washington D.C. The county is comprised of 472.4 square miles, bordered by the James River and the Blue Ridge Mountains on the east and west respectively. It is home to the George Washington National Forest, and elevations within the county range from 500-4,000 feet above sea level.

The well-known TV series “The Waltons” was written by Nelson County resident Earl Hamner, Jr., who used his experiences growing up there during the depression as the basis for the series. In 1969, Nelson County was impacted by Hurricane Camille, which caused widespread flooding

[3] http://www.city-data.com/city/Roanoke-Virginia.html
[4] http://www.city-data.com
[5] http://www.washingtonian.com/articles/people/9947.html
[6] Weldon Cooper Center for Public Service, University of Virginia, 2/4/2011
[7] www.fairfaxcounty.gov/demogrph/gendemo.htm
[8] Adapted from www.5thcddems.org/5thcd/5thCD.asp?mod=nelson

within the county. Some events contributing to the County's recovery since Camille include the development of Wintergreen Resort in1972, the restoration of the Oak Ridge Estate, the development of the Walton's Mountain Museum, the resurgence of the apple, orchards, and winery industry, and growth in tourism.

Table 2: Nelson County Virginia Farm Statistics

Nelson County	2002	2007
Number of Farms	456	462
Land in Farms	84,691	73,149
Average size of farm (acres)	186	158
Market Value of Products Sold ($)	7,565,000	12,445,000
Average per Farm ($)	16,590	26,937

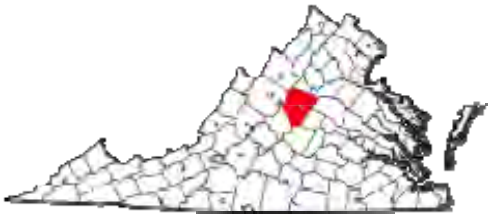
Nelson County is one of about 3,141 counties and county equivalents in the United States. It has 472.4 sq. miles in land area and a population density of 31.8 per square mile. In the last three decades of the 1900s, its population grew by 23.4%. On the most recent census form, 98.3% of the population reported only one race, with 13.1% of these reporting African-American. The population of this county is 3.1% Hispanic (of any race). The average household size is 2.30 persons compared to an average family size of 2.80 persons.
In 2010, accommodation and food services was the largest of 20 major sectors. It had an average wage per job of $22,190. Per capita income grew by 23.3% between 1999 and 2009 (adjusted for inflation).

Table 3: Nelson County Overview. Part of Charlottesville, VA Metropolitan Area

People & Income Overview (By Place of Residence)	Value	U.S. Rank	**Industry Overview** (2010) (By Place of Work)	Value	U.S. Rank
Population (2010 Census Count)	15,020	2078	Covered Employment	3,401	2260
Growth (%) since 1990	17.5%	1169	Avg wage per job	$28,312	2601
Households (2010)	6,396	2102	Manufacturing - % all jobs in County	6.5%	1934
Labor Force (persons) (2010)	8,115	1978	Avg wage per job	$25,275	2652
Unemployment Rate (2010)	6.2	2597	Transportation & Warehousing - % all jobs in County	1.4%	1940
Per Capita Personal Income (2009)	$37,093	742	Avg wage per job	$41,428	1270
Median Household Income (2009)	$44,615	1111	Health Care, Social Assist. - % all jobs in County	8.5%	1587
Poverty Rate (2009)	12.7	2150	Avg wage per job	$28,403	1547
H.S. Diploma or More - % of Adults 25+ (2010 ACS 5yr)	77.7	2,427	Finance and Insurance - % all jobs in County	1.5%	2483
Bachelor's Deg. or More - % of Adults 25+ (2010 ACS 5yr)	22.9	770	Avg wage per job	$43,206	881

Source: Stats Indiana www.stats.indiana.edu

Albemarle County Virginia



Albemarle County was formed from neighboring Goochland County in 1744, and was then subdivided into Buckingham and Amherst Counties. It is the original birthplace of Thomas Jefferson (before being separated from Goochland County) and is the present location of Monticello, Thomas Jefferson's primary plantation.

According to the Albemarle County, Virginia website the county's historical attractions include Ash-Lawn Highland, Michie Tavern, and Montpelier. The county has nine parks which cover over 2,000 acres of land, and boasts three separate agri-tourism trails: Monticello Wine Trail, Brew Ridge Trail, and Monticello Golf Trail.

Table 4: Albemarle County Virginia Farm Statistics

Albemarle County	2002	2007
Number of Farms		518
Land in Farms	104,879	104,606
Average size of farm (acres)	216	202
Market Value of Products Sold ($)	36,787,000	76,082,000
Average per Farm ($)	75,693	146,877

Albemarle County is one of about 3,141 counties and county equivalents in the United States. It has 722.6 sq. miles in land area and a population density of 137.0 per square mile. In the last three decades of the 1900s, its population grew by 109.7%. On the most recent census form, 97.6% of the population reported only one race, with 9.7% of these reporting African-American. The population of this county is 5.5% Hispanic (of any race). The average household size is 2.40 persons compared to an average family size of 3.00 persons. In 2010, retail trade was the largest of 20 major sectors. It had an average wage per job of $27,075. Per capita income grew by 14.2% between 1999 and 2009 (adjusted for inflation).

Table 5: Albemarle County Overview. Part of: Charlottesville VA, Metropolitan Area

People & Income Overview (By Place of Residence)	Value	U.S. Rank	Industry Overview (2010) (By Place of Work)	Value	U.S. Rank
Population (2010 Census Count)	98,970	606	Covered Employment	48,526	465
Growth (%) since 1990	45.2%	399	Avg wage per job	$46,596	188
Households (2010)	38,157	589	Manufacturing - % all jobs in County	4.9%	2140
Labor Force (persons) (2010)	52,677	554	Avg wage per job	$63,064	221
Unemployment Rate (2010)	5.4	2778	Transportation & Warehousing - % all jobs in County	0.1%	3129
Per Capita Personal Income (2009)	$46,163	163	Avg wage per job	$44,196	854
Median Household Income (2009)	$63,669	169	Health Care, Social Assist. - % all jobs in County	10.1%	1387
Poverty Rate (2009)	8.8	2880	Avg wage per job	$54,921	80
H.S. Diploma or More - % of Adults 25+ (2010 ACS 5yr)	90.9	386	Finance and Insurance - % all jobs in County	1.9%	2169
Bachelor's Deg. or More - % of Adults 25+ (2010 ACS 5yr)	51.6	18	Avg wage per job	$76,370	86

Source: Stats Indiana www.stats.indiana.edu

Context of the Alcoholic Beverage Market: U.S. and Virginia

There are some considerations to bear in mind when considering the alcoholic beverage industry.

- Small businesses are the backbone of the U.S. economy, creating two out of every three new jobs in America.[9]
- From 1919 to 1932 the U.S. did not allow the commercial production and sale of alcohol. The 21st Amendment repealed Prohibition in 1933, but allowed each state to make its own laws governing the sale and production of alcoholic beverages.
- In administrative terms, the Alcohol and Tobacco Tax and Trade Bureau (TTB) works at the Federal level and the Virginia Department of Alcoholic Beverage Control (ABC) works at the state level.
- TTB establishes the rules governing the regulation of alcoholic beverages. Details are available at www.ttb.gov
- The Bioterrorism Act of 2002 requires that anyone who manufactures, processes, packs, or holds food (including alcohol beverages) for consumption in the United States must register with the Food and Drug Administration.

[9] Austan Goolsbee, Chariman of the Council of Economic Advisers of the President

Virginia Department of Alcoholic Beverage Control
The VDABC was created under the provisions of the Alcoholic Beverage Control Act, Chapter 94 of Acts of Assembly, Session of 1934, and subject to amendments thereto.

The mission of the VDABC is to control the distribution of alcoholic beverages; operate efficient, conveniently located retail outlets; enforce the laws of the Commonwealth pertaining to alcoholic beverages and youth access to tobacco products; and provide excellent customer service, a reliable source of revenue, and effective public safety.

In 2010, there were record sales of $675 million and nearly 4 million cases of distilled spirits shipped from the VDABC warehouse in Richmond to 332 stores. Also, the bureau of law enforcement conducted more than 16,000 criminal investigations.

POSSIBLE BUSINESS ORGANIZATIONAL STRUCTURE OF THE CIDERY

In analyzing the possible farm-based winery, it is necessary to examine the possible business structures. In this study, the formation of a farm-based winery is considered in a prototypical fashion. From market research, the possible size and structure of a farm-based cidery is examined and presented. The following entities were examined, and the results presented below.

Legal Organization[10]

Sole proprietorship
The sole proprietorship is the simplest and least regulated business structure.
When establishing a sole proprietorship, there are likely to be fees to obtain business name registration, a fictitious name certificate, and other necessary licenses. Any potential attorney's fees for starting the business, however, will be less than the other business forms because less preparation of documents is required.

To finance the sole proprietorship, the sole owner must contribute or borrow all of the capital needed to start the business. Any outside funding sources must be in the form of loans.

Advantages and Disadvantages of Sole Proprietorships
- As a sole proprietorship, the business itself does not pay income tax.
- The profit or loss of the business is taxed as personal income and is included on the owner's individual tax return.
- The sole proprietor has total control of the business and receives all profits.
- An individual who is responsible for all aspects of the business, including any debts, even in excess of the amount invested, owns it.
- In addition to potential personal liability for the owner, there is the possibility of dissolution of the business upon the owner's death.

Partnership
A general partnership (sometimes simply referred to as “a partnership”) is an association of two or more persons to carry on as co-owners of a business for profit. Each partner contributes

[10] Adapted from Virginia Business Legal Structures. http://www.vafairs.com/publications/VA_LegalStructures.pdf

money, property, and/or services, and agrees to share in the profits or losses of the business. Ordinarily, each partner is liable for all obligations of the partnership.

To form a partnership, two or more persons sign and file the partnership agreements (Statement of Partnership Authority –with the appropriate state office; this agreement states the exact contributions and returns of the members). The two most common types of partnerships are: general and limited.

Advantages and Disadvantages of Partnerships

- A partnership allows for additional financial resources.
- A partnership allows members to escape double taxation.
- The requirements and procedures for formation are fairly simple
- All partners are personally liable for business debts and liabilities.

Most businesses face significant liability issues and are choosing to form as Limited Liability Companies (LLC's).

Limited Liability Company

An LLC's purpose is to combine the limited liability for its members usually found in the corporate structure (and to limited partners in limited partnerships) with the pass-through tax advantages of the general partnership. (Any profits/losses pass through to the individual investor and appear on the individual's tax return). So, an LLC has some, but not all, of the characteristics of each entity. An LLC may be formed by just one person, but it more commonly requires two or more persons.

LLC formation and liability characteristics are similar to that of a corporation. To form a corporation or LLC, the necessary documents must be filed with the designated state agency. Unlike a general partnership, shareholders are not personally liable. Other characteristics may be similar to or different from corporate characteristics, depending upon how the LLC members wish to structure the entity and comply with IRS regulations to receive favorable tax treatment.

Advantages and Disadvantages of LLCs

- Provides its members limited liability.
- Allows members to escape double taxation.
- Any "person," either natural (an individual) or legal (another legal entity, such as a partnership), can be a member.
- Members may actively manage the LLC without incurring personal liability.
- Uncertain tax status.
- Drafting the agreement can be fairly complex

Cooperatives

There is no universally accepted definition of a cooperative. In general, a cooperative is a business owned and democratically controlled by the people who use its services and whose benefits are derived and distributed equitably on the basis of use. The user-owners are called members.

There are also state and federal statutes and regulations that must be complied with for a business to qualify as a cooperative.

Advantages and Disadvantages of Cooperatives

- Earnings from business with members are taxed once, either as income of the corporation when earned or as income of the members when allocated to them.
- A cooperative usually has a perpetual existence.
- Members can routinely join or resign without disrupting ongoing operations.
- Rules governing its establishment can be complex.

C-Corporation

C-Corporations are the most common form of organization for large businesses in the United States. The structure offers the investor (stockholder) limited liability protection – any liability is limited to the value of the stock held in the corporation. Businesses formed under this structure require oversight by state regulatory boards at a minimum and in some cases by the Federal Security and Exchange Commission. A Corporation has a perpetual existence. Owners can routinely sell or reassign stock (or ownership) without disrupting ongoing operations.

Advantages and Disadvantages of C-Corporations

- The corporation is the most complex of business structures because it acts as a legal entity that exists separately from its owners.
- Control depends on stock ownership.
- Stockholders are at risk only for money they have invested in the stock of the corporation.
- Allows capital to be raised more easily through the sale of stocks or bonds.
- Can continue to function even without key individuals.
- Double taxation occurs because the business exists as a separate entity

S-corporation

The S-corporation is not really a different type of corporation; it is a special tax designation applied for and granted by the IRS to corporations that have already been formed. To become an S-corporation, the business first must form a general or professional corporation, and the company must complete Form 2553, Election by a Small Business Corporation, and file it with the IRS.

Many entrepreneurs and small business owners take advantage of the S-corporation structure because it combines a lot of the advantages of the sole proprietorship, partnership, and corporate forms of business.

Advantages and Disadvantages of S-Corporations

- Restrictions on the number and type of ownership.
- S-corporations have the same basic advantages of the general corporation. (see above)

Non-Member Participation

It is not anticipated that non-member participation will be utilized for this venture at this time.

As demand grows for the Nelson County brand, other producers may become involved to supply the extra apples necessary to meet demand. These producers will have to meet the stringent production criteria set out by Nelson County to maintain the quality product that the cidery sells.

In addition, overall supply of apples must conform to the following criteria to maintain farm based winery status:

- Produce at least 50 percent of the total product used to make the Cider.
- May purchase an additional 25 percent of the total product from within the state of Virginia.
- May purchase 25 percent from out of state sources.

If Nelson County decides to offer an equity position to its producers in the future, the company will need to recognize that a long-term agreement is needed to facilitate equity distributions, long-term ownership arrangements, and penalties for non-compliance, amongst other necessary transactions between the cidery and its minority owners.

Supply Arrangements

A statewide grower survey of apple growers administered by Nelson County highlights some concerns regarding hard cider apple supply. Because hard cider is typically produced from apples that are not suitable for fresh market consumption, apple industry statistics do not necessarily represent the supply necessary for high quality hard cider production.

Of the 79 responses received by the survey, approximately 26 percent indicated that they had sold apples or apple juice to be made into hard cider over a three year period from 2009-2011. Approximately 39 percent of respondents responded positively regarding the planting of apple trees specifically for hard cider production in the next two years.

Two common concerns expressed regarding the planting of hard cider apple varieties was the ability to sell the product once it was grown and the anticipated market price of the apples. The average desired price listed by respondents was $11.00 per bushel, which is less than the market prices experienced during the fall of 2012.

Virginia apple prices have experienced a sharp incline during 2012 due to extreme weather conditions. With 54% of the country experiencing drought, the Virginia apple industry has suffered immensely.[11] Storms on June 29 and July 1brought high winds and hail to Nelson County, Virginia; which, coupled with heat and dry conditions, damaged a large percentage of the apple crops in the area. [12] The current diminished supply of Virginia apples have resulted in price spikes throughout the year.

[11] http://www.ncdc.noaa.gov/sotc/drought/

[12] http://www2.nelsoncountytimes.com/business/nelson-news/2012/sep/04/local-orchardists-optimistic-despite-weather-condi-ar-2176636/

While it is clear that Virginia apple growers have some reservation regarding growing specific hard cider varieties, it is also clear that available acreage exists for the expansion of apple growing into specific varieties of hard cider apples.

Based on industry statistics, the cidery should easily be able to produce the 3,500 case estimated production amount set within this study. Should the cidery grow its own apples for production, and choose to grow beyond its ability to produce its own apples, there are other orchards in Virginia that can provide apples to the cidery should it need additional supplies, or should the cidery have a crop failure. Because these orchards are located at a distance from the cidery, it is not unreasonable to assume that the cost of these apples may be higher than those produced by the cidery themselves due to the transportation costs.

PROJECT COMPONENT BACKGROUND

There are multiple components that must all work to make this project feasible. These components range from cider processing and marketing to regulatory impact on the project. Brief presentations on the most important aspects of these components are presented in the proceeding sections of this study. Because higher alcohol content cider is known as apple wine and because artisanal wine itself is a direct competitor for the hard cider product, wine analysis has been included as well.

The Virginia Agricultural Industry

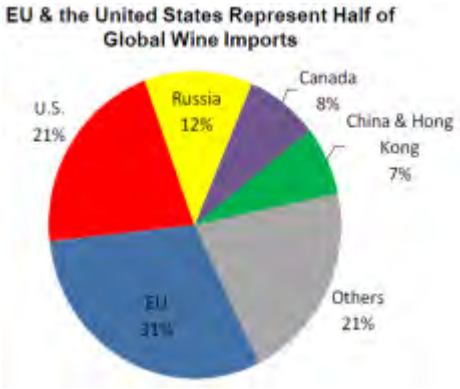
Agriculture is Virginia's largest and oldest industry; it has been the backbone of the state economy for almost four centuries. It generates approximately $36 billion annually, utilizes about 34 percent of the land in the state, and accounts for about 12 percent of all sales in the state. About 18 percent of these sales are associated with red meat (cattle, calves, hogs, sheep, and lambs). More than 98 percent of Virginia's farms are family-owned and -operated; about 20 out of every 100 jobs in Virginia are in agriculture.

The Wine Market: U.S. and Virginia

Wine is a very labor-intensive agri-industrial activity, providing jobs for U.S. rural workers, professionals and suppliers of goods and services. Wine production creates a long food production chain in terms of people, value, and the business life cycle. Global competition has made the industry very competitive and even more difficult for smaller wineries to survive. However, the highly fragmented market creates an opportunity for smaller wineries to focus on delivering a higher-value wine to consumers according to their specific tastes.

Global wine trade is expected to continue to expand. In 2010, global wine imports reached 4.4 billion liters, up 7 percent from the previous year. This increase was driven largely by stronger demand from Russia, China, and Hong Kong. After a slight downturn in 2008 and 2009 due to the economic recession, world trade is returning to trend.

Figure 1: Global Wine Imports Share Percentages 2011



The European Union (EU) is the world's largest supplier, consumer, exporter, and importer of wine. In 2011, imports are expected to expand moderately on stronger demand for inexpensive imported wines. In 2010, EU imports were up 3 percent to 1.3 billion liters on greater demand for Australian and U.S. wines. Over the past several years, the rate of growth has been slowing due to policies aimed at social and health concerns and competition from alternative beverages. At the same time, unit values dropped as consumers demanded less expensive wines.

Figure 2: World Wine Export Leaders 2011

The United States is the second largest import market. Imports are forecast to continue trending upward on higher consumption and interest in trying new wines. Last year, imports reached 932 million liters on greater shipments from the EU. The EU supplies about half of the U.S. imports, followed by Australia (over 20 percent), and Chile (15 percent). In a reversal of earlier trends, bottled wine imports grew by value and volume, while bulk wine shipments fell, indicating that consumers have embraced more expensive brands. [13]

International prices for wine have not been discussed in this report given their relatively low significance when it comes to associate a price with a quality wine. The wine market is very fragmented in terms of varieties, geographic denominations, country of origin, production technique, and varietal or blend, amongst many other variables. Consequently, an average international price would mean very little unless all variables are considered and the international organizations deal with wine as a commodity.

Table 6: U.S. Wine Region Statistics

Region	Wineries (%)	Production (%)
Northeast	10.2	4.1
South	13.3	1.2
Midwest	12.6	.8
Mountain	3.8	.2
California	44.1	89.5
Northwest	16.0	3.7
Total	100.0	99.5*

Source: U.S. Department of Commerce, U.S. Wine Industry 2011.
*** Data doesn't total 100% due to incomplete state data.**

[13] Excerpted from www.fas.usda.gov/info/Wine%204-11.pdf

The U.S. Department of Commerce characterizes the industry into 6 wine regions. The South contains 13.3 percent of the wineries and is responsible for 1.2 percent of production.

The attractiveness of the industry is demonstrated by the fact that there have been an increasing number of wineries since 1999, increasing dramatically from 2,688 to 6,668, an annual compound growth rate of just under 10 percent.

Wine Market Conclusions

There will always be room in the marketplace for well-made quality wine (quality defined by the consumer) that provides excellent taste, value for the price, and other elements of a positive brand experience. In this context, there are good possibilities for small- and medium-sized Virginia wineries.

U.S. Hard Cider

Hard Cider is actually part of our American heritage. Cider, meaning hard cider, was the drink of choice, along with coffee and tea, in colonial days. Students at Harvard received their rations of cider with meals in the 1700s, many towns in Vermont had community cider presses, and in 1767, according to "The American Cider Book," the average annual consumption for every man, woman, and child in Massachusetts was 1.14 barrels (about 40 gallons)[14].

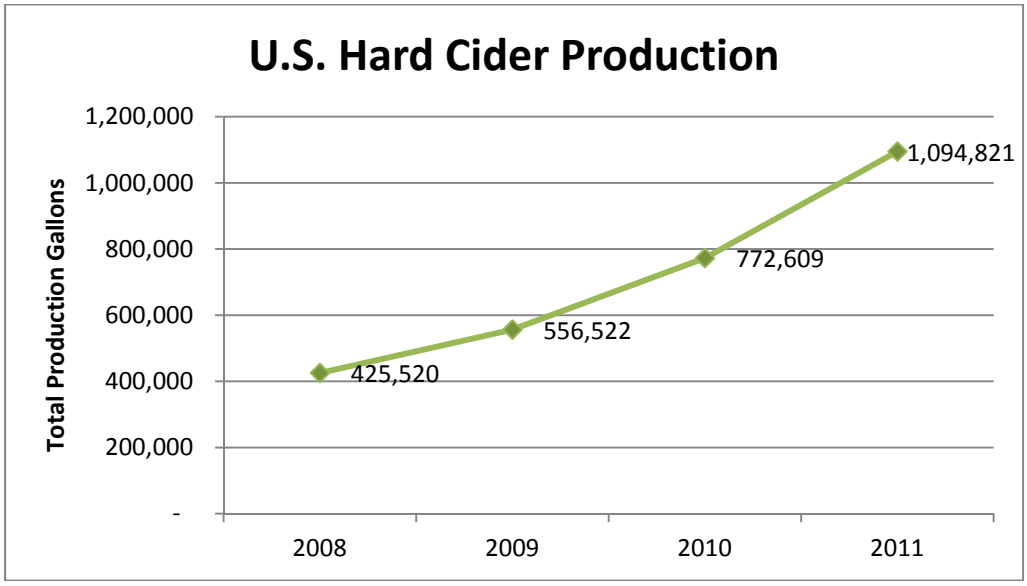
Before clean water was taken for granted, entire families would drink a lightly fermented cider product as a substitute for clean water. Apples were plentiful, and slightly fermented cider was less likely to cause illness than unknown water sources. With the rise in popularity of beer and increased access to clean water supplies, the popularity of hard cider waned. After Prohibition, cider drinking never returned to pre-Prohibition levels and largely faded away.

However, much like many other trends in history, the popularity of hard cider is on the rise. Classified as a wine product by the Alcohol and Tobacco Tax and Trade Bureau (TTB), hard cider occupies a peculiar position in the alcohol industry. Made with a process similar to wine, yet with a low alcoholic content similar to beer, it doesn't fit easily into either category "[A]s with most information about the U.S. cider market, virtually all demographic data are anecdotal; because the category is so young in the U.S., there is no central data collection agency or industry trade group."[15]

Gathering statistics on the sale and production of hard cider in the U.S. is difficult. However, a reliable indicator of the growth of the hard cider industry can be observed through the increased volume of hard cider and hard cider producers as evidenced by taxes collected on cider production. By comparing year-to-year production statistics provided by the TTB, it is clear that production is on the rise. These statistics are presented in their entirety in the Appendix.

14 "Apple Juice With Grown-Up Fizz".
Florence Fabricant. Published: January 29, 1997.New York Times Archives
15 http://www.nvcc.edu/home/amalitzkego/brenna/cgsam1.html

Table 7: Total U.S. Hard Cider Production by Fiscal Year



Source: Alcohol and Tobacco Tax and Trade Bureau

For fiscal years (Oct. 1-Sept.30) 2008 through 2011, hard cider production has shown steady increases. Percent of increase in 2010 was nearly 39 percent, and in 2011 was nearly 42 percent. Compare this to craft brewery production statistics which show growth of the craft brewing industry to be 13 percent by volume in 2011 and 12 percent by volume in 2010.[16]

"While mainstream beer brands are declining, cider is growing at a furious pace, drawing premium prices, coveted women drinkers, and even more male fans attracted to bold flavors. Category sales were up 25 percent in the year ending Oct. 30 [2011], to $49.6 million, according to SymphonyIRI, which tracks grocery sales excluding those at Wal-Mart and liquor stores."[17]

According to Euromonitor, an industry research company, this growth was largely attributed to the popularity of craft beer in the U.S. and consumers' desires to try new flavors and tastes. Familiarity with the wide variety and tastes of craft beers has allowed consumers to venture into giving other alcoholic beverages a try. Some craft breweries have also begun to add a cider offering to complement their craft beer portfolio.

The Vermont Hard Cider Company (formerly known as Green Mountain Beverages) is the leading company in cider, with a 40 percent share of total volume sales in 2011. The top two brands of U.S. cider, Woodchuck and Strongbow, are both part of Vermont Hard Cider's portfolio and have 24 percent and 12 percent shares in cider, respectively. Vermont Hard Cider clearly leads the U.S. cider category because its brands enjoy national and mainstream supermarket distribution. The other U.S. cider companies are popular on a regional basis and many do not yet have shelf space in supermarkets.

[16] http://www.brewersassociation.org/pages/business-tools/craft-brewing-statistics/facts
[17] http://adage.com/article/news/cider-craft-brew-sales-climb/231198/. "Cider Seen as Next 'Craft Brew' as Sales Climb25% This Year". Advertising Age article Published 11-28-2011.

Table 8: Top Ten Cider Production States by Fiscal Year

HARD CIDER PRODUCTION IN GALLONS BY FISCAL YEAR											
	FY 2008			**FY 2009**			**FY 2010**			**FY 2011**	
1	OH	170,506		OH	151,900		OH	173,600		CA	298,727
2	MA	70,841		CA	112,335		CA	156,641		OH	253,785
3	CA	46,530		MA	75,032		MI	76,738		FL	112,591
4	NY	40,151		FL	50,573		FL	71,355		OR	100,314
5	OR	25,064		NY	46,086		OR	70,953		WA	94,387
6	WA	24,430		MI	38,652		MA	64,035		MA	81,848
7	MI	18,497		WA	37,016		WA	52,099		NY	51,902
8	VT	16,002		OR	26,006		NY	48,648		MI	44,342
9	FL	6,389		VT	5,507		VT	28,189		VT	29,104
10	RI	1,925		PA	4,230		PA	9,226		VA	10,196

Source: TTB

Cider volume sales are projected to grow at an 11 percent CAGR over the 2011-2016 forecast period. In 2016, total volume sales of cider in the U.S. are expected to reach 98 million liters. While 65 percent growth between 2011 and 2016 may seem like a large figure, it is a very attainable and conservative estimate. In 2011, the category's sales were equivalent to far less than 1 percent of total beer sales. Cider makes up only a very small portion of U.S. alcohol sales and, therefore, has the room and potential for rapid growth.

Mainstream consumers are becoming increasingly aware of Celiac disease and the gluten-free diet – where beer is replaced by cider – and this will lead to an increase in product distribution through supermarkets chains. On-trade cider growth will occur since bars and restaurants have more open taps for various craft beers and are willing to expand on variety to include a cider brand or two.[18]

Large U.S. beer companies, such as MillerCoors, have taken notice of the trend toward artisanal craft hard ciders and recently acquired the number three hard cider maker in the U.S., Crispin. According to a February 2012 Reuters article, "The U.S. cider market is only 0.5 percent the size of the beer market, but has nearly doubled in size since 2005 and grew at 26 percent last year compared with a declining beer market. MillerCoors sees significant growth potential as the UK cider market accounts for 17 percent of its national beer market."[19]

The most recent statistics available from the TTB indicate that the growth of hard cider products will continue.

[18] http://www.euromonitor.com/cider-perry-in-the-us/report

[19] http://www.reuters.com/article/2012/02/06/us-sabmiller-cider-idUSTRE8151ZY20120206. "MillerCoors gets a thirst for Crispin cider". February 6,2012.

Table 9: U.S. Calendar Year Cider Statistics[20]

U.S. CALENDAR YEAR STATISTICS					
Year	Total Cider Gallons	Total Barrels	Domestic growth	Import growth	Total growth
2005	7,028,470	226,725			
2006	7,886,194	254,393	12.40%	11.90%	12.20%
2007	8,840,955	285,192	11.70%	13.00%	12.10%
2008	9,037,919	291,546	4.40%	-2.80%	2.20%
2009	9,550,627	308,085	8.20%	-0.50%	5.70%
2010	10,514,037	339,162	9.90%	10.60%	10.10%
2011	12,602,922	406,546	23.30%	10.80%	19.90%

In 2011, the U.S. Cider market grew by nearly 20% from 2010 numbers. For the first quarter of 2012, cider volumes are up 46.9% over the same quarter in 2011.

Table 10: U.S. 2011 and 2012 First and Second Quarter Comparison

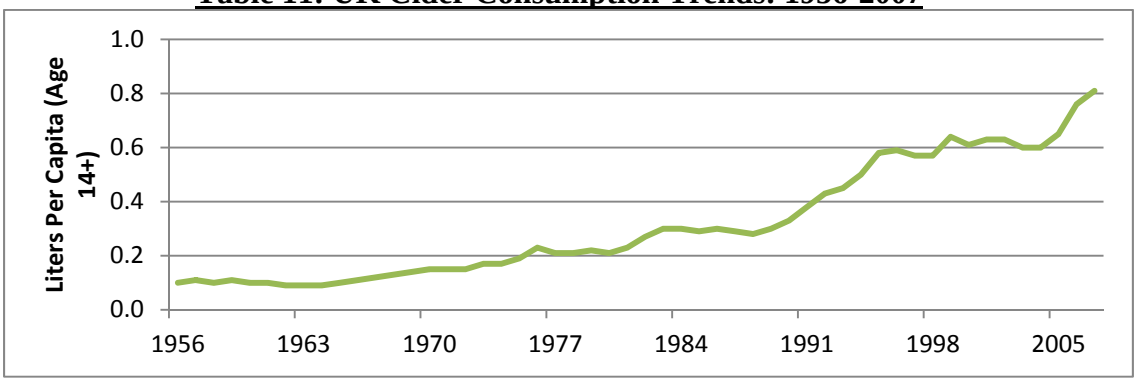
Year	Total Cider Gallons	Total Barrels	Domestic growth	Import growth	Total growth
YTD 2011 (Q1)	2,569,079	82,874			
YTD 2012 (Q1)	3,774,278	121,751	55.50%	25.10%	46.90%
YTD 2011 (Q2)	3,041,359	98,108			
YTD 2012 (Q2)	5,057,002	163,129	85.5%	15.0%	66.3%

International Markets

Because hard cider production and consumption is a relatively new trend in the U.S., it is useful to present statistics from a mature hard cider market such as the UK in order to gain perspective on where the market could go.

[20] Table 9 and 10 information taken from The Beer Institute US Cider Market-Domestic and Import Volumes Q1 and Q2 Report.

Table 11: UK Cider Consumption Trends: 1956-2007[21]



The preceding table highlights long-term trends in the consumption of hard cider in the United Kingdom. Because the UK did not have Prohibition, hard cider consumption never had an interruption as it did in the U.S. Recent trends show a marked increase in the consumption of hard cider products and highlight an increased demand for the drink overall.
According to industry sources, the UK and Ireland host the largest hard cider markets. It is considered on par with beer in those countries, and as of 2010 has a 17 percent market share in the UK, and around 12 percent in Ireland. While hard cider in the U.S. is currently a small percentage of the U.S. beer market, in countries beside Ireland and the UK with an unbroken tradition of cider consumption, the market share approaches 5 percent. Hard cider in the United States has incredible potential if it were to approach such numbers domestically[22].

Cider Market Conclusions

There will always be room in the marketplace for quality hard cider (quality defined by the consumer) that provides excellent taste, value for the price, and other elements of a positive brand experience. In this context, there are good possibilities for small- and medium-sized Virginia cideries.

In addition, the hard cider market seems poised to increase. Much like the craft brewing industry that highlights regionalism and unique taste, the increasing awareness and demand for hard cider, as evidenced by production in the U.S. and potential market share in other countries, is a strong indicator of the potential for a successful Virginia cidery.

GENERAL OPERATING PROCEDURES

In order to remain a successful commercial enterprise, this project will have to continue to revise its procedures as its production and sales increase. Basic prototypical procedures for the venture are presented in the following section of the report. If the cidery will be based on its own orchard, in order to support the expected production of 3,500 cases, it will be necessary to have a site consisting of an orchard of at least 5 acres, representing an estimated 3,500 bushels of apples. Model projections for this study are based on the purchase of all apple inputs.

[21] Source: Institute of Alcohol Studies Fact Sheet last update: 10-22-2010.
[22] http://www.beerconnoisseur.com/hard-cider "Hard Cider: Craft Beer's Next Big Trend?" 9-10-2010.

Location and Site Specifications

A good location is essential to establishing a successful cidery or winery. The facilities will ideally be visible from a major roadway. Because a majority of sales will occur on site, visibility near high traffic routes will facilitate customer flow. The site should have space to handle the initial operations and room for growth should demand make this necessary.

The cidery should also incorporate a tasting/event room which will serve as a marketing tool to drive consumer awareness of the product and serve as a possible income stream from the sales of non-cider products. The goal is for the facility to be a destination as well as a cidery. This would fit the model of other local competitors.

The facility space dedicated to events and tastings will allow the cidery to generate additional revenue from offering event services for wedding and special occasions, offering tours of the premises, and showing the actual cider making process. The site could also serve as a host for local festivals, events, or tastings that would increase the cidery's brand recognition in the region.

Facilities expanded beyond mere production will also provide a setting for aficionados, who can enjoy the history of the orchard and cidery as well as its surroundings. Sufficient parking space would also be necessary, particularly if the cidery intended to make good use of the event facilities.

The facility should consist of the appropriate buildings for storage of apples and apple harvesting equipment and should include the actual cider pressing, fermenting, and bottling equipment for converting fresh, sweet cider into hard cider. The cidery will make use of minimal staff and minimal equipment, especially since the production will be limited to 3,500 cases.

Zoning – General Requirements

Zoning is the enactment of county ordinances to regulate land use to conform with state land conservation and development laws and the county comprehensive land use plan. Areas are typically zoned for residential, commercial, industrial, or other uses.

All of the 50 states have zoning enabling legislation for municipalities, and many states also have zoning enabling legislation for counties. Zoning laws are found in virtually every municipality in the U.S., affecting land use, lot size, building heights, density, setbacks, and other aspects of property use.

Zoning regulations become especially important when a business seeks to expand its current operations, through either the addition of production or a physical increase in the building and/or property designed to change the use of the land and existing facilities. The current operations legality does not guarantee the right of the owner to expand or modify in the future and is subject to current zoning restrictions and codes.

For the sake of the study, basic zoning information is addressed in the Risks and Regulations section of this document.

Equipment Specifications

There are numerous pieces of equipment and supplies that are necessary to produce hard cider. The major categories are listed below, with a complete list contained in the Appendix.

Table 12: Cidery and Tasting Room Equipment Categories Years 1-3-3

Item Category:	Price:
Processing	
Items related to processing of apples into juice, including large processing equipment such as a pomace grinder and press, as well as miscellaneous utensils and equipment.	
Total Processing	**$79,126**
Storage/Fermenting	
Items related to the storage and fermenting of the must (unfermented apple juice) including fermenting and blending tanks, pumps, yeasts, and other chemicals.	
Total Storage/Fermenting*	**$100,920**
Bottling/Finishing	
Items related to the bottling of the end product, including bottler, caps, bottles, and miscellaneous equipment such as cleaning supplies.	
Total Bottling/Finishing**	**$18,620**
General/Material Handling	
Items for handling such as carts and storage racks, as well as product testing equipment such as titrator and refractometer.	
Total General/Material Handling	**$6,170**
Tasting Room	
Items related to the tasting room, including tables, chairs, bar, and general equipment such as fire extinguishers and exit signs.	
Total Tasting Room	**$21,396**
Misc/Office	
Items related to office functions such as desks, computers, chairs.	
Total Misc/Office	**$3,530**
Sub-Total All Categories	$229,762
5% for shipping, handling, set-up fees, etc.	$11,488.10
Total All Categories Years 1-3-3	**$241,250.10**

*Total Includes Additional Equipment Purchased in Year Three of: $ 51,500
**A bottling line will need to be considered once production exceeds the capacity of manual labor to bottle the product.

The totals listed include major equipment purchases that have been anticipated for the cidery. Major purchases were assumed during the prototypical cidery's first year of operation, and picked up in the model during the study's timeframe. Due to increased production, another

significant equipment purchase is projected during the third year of the study. This purchase includes the addition of storage/fermentation tanks, as well as additional kegs.

It is understood that variation in the types and costs of equipment is possible. For the purposes of the study, the prices of major pieces of equipment are based on actual supplier quotes for new, unused equipment. These suppliers have been noted in the Appendix. Purchase prices of less significant pieces of equipment have been based on retail price research done by the consultants.

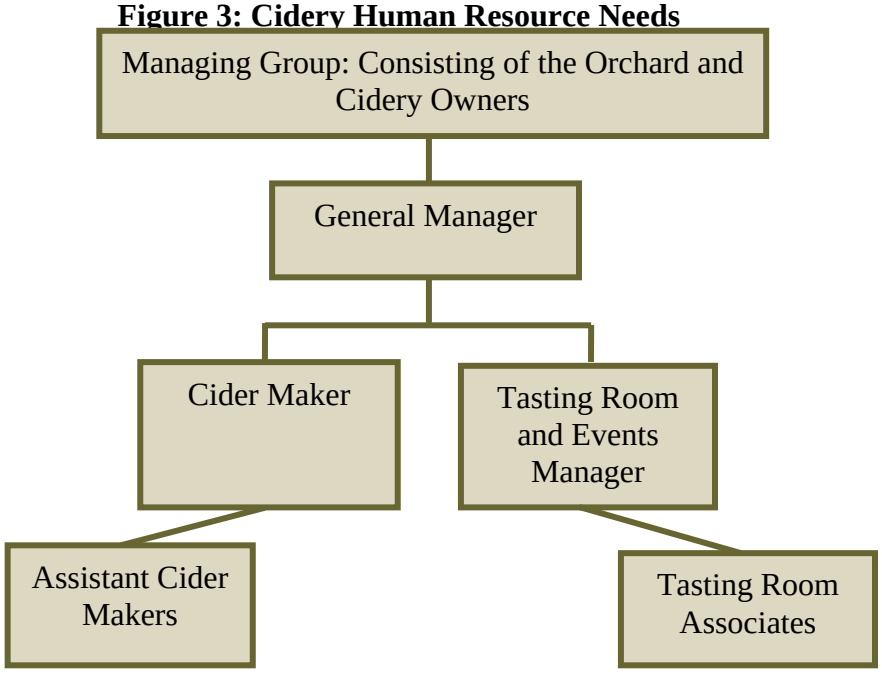
Cidery - Human Resources

To begin, it is anticipated that the majority of the labor needed to operate the cidery will be provided by the owners and their family. Most small family operations rely on labor provided with minimal or no cost to the new business.

However, further development will require more work and organization to keep up with the increases in production and commercialization efforts. Therefore, it may be necessary to hire additional management and human resources for the business. The following is a list of possible job descriptions that may become necessary as the venture grows in production.

The descriptions of duties are generic and intended as a guide for the owners. The basic positions considered for the venture are: General Manager, Cider Maker, Assistant Cider Makers, Tasting Room and Events Manager, and Tasting Room Associates. Detailed descriptions of these positions can be found in the Appendix.

Figure 3: Cidery Human Resource Needs



Listed above is a basic business organizational chart. Basic job descriptions of these positions are briefly included next. Please see the Appendix for more detailed job descriptions of key personnel.

Job Descriptions

General Manager
The general manager is a full-time position and reports to the Board of Directors. He organizes, oversees, and directs all cidery operations. He is also responsible for developing policies and managing the daily operations of the business. He is the liaison between the Board of Directors/Owners and the staff.

Cider Maker
This is a full-time position. The cider maker reports to the general manager. This person works closely with other managers, orchard personnel, and the tasting room and events manager to produce the cider that best adapts to the target customers. Science, technology, and economics are important for planning the cidery business and the person who fills this position should be trained in these areas. He is responsible for the elaboration of fine ciders. The cider maker coordinates harvest times with the orchard personnel and schedules when the apples enter the processing plant. This employee should assist in identifying the best practices for the orchard and should be knowledgeable about the technology that is needed to create the best ciders.

Assistant Cider Makers
These part-time to full-time employees (depending on production) report to the cider maker. The assistants help in all duties associated with cidermaking, including quality issues at harvest, cidermaking, and bottling. It also involves laboratory work and following quality control procedures.

Tasting Room & Events Manager
This is a full-time position. The tasting room and event manager reports to the general manager. This employee is responsible for the organization and functioning of the tasting room activities. In addition, this person trains and supervises all part-time workers at the tasting room. All cidery events are under the supervision of this manager as well. The tasting room and events manager works closely with other managers to coordinate visitors and possible tours of the facilities.

Tasting Room Associates
The tasting room associates are part-time to full-time workers under the direct supervision of the tasting room & events manager. The associates' duties may include assisting in the promoting the cidery's products and the sales of cider and other products, giving presentations, greeting and helping visitors, recruiting and organizing groups of visitors, and guiding visitors through the facilities.

Additional Human Resources

As the venture grows beyond the scope of this study and approaches semi-commercialized production numbers, it will become necessary to add staff that will ensure the efficient operation of the cidery. These possible positions are as follows:

Orchard Manager
Should the venture be located on an orchard in order to produce its own apple inputs, an orchard manager position would be utilized. The orchard manager is a full-time employee that reports to the general manager. The orchard manager is responsible for all orchard activities from planting to harvest. The experienced manager works to bring the apples to their optimum quality for cidermaking. He manages the necessary part-time staff for the orchard.

Sales Manager
The sales manager a full-time position and reports to the general manager. The sales manager executes all sales and distribution goals while managing gross profit and sales mix. This employee directs and assists the staff to ensure sales and distribution goals are achieved. The sales manager performs market audits on a monthly basis and identifies and suggests various distributors to the general manager.

Marketing Manager
Under the supervision of the general manager, the full-time marketing manager develops and executes the marketing plan according to the general manager's directives. This employee works in coordination with the rest of the managers, particularly the sales manager. The marketing manager does marketing research and makes recommendations accordingly. This individual identifies cider categories, promotion strategies, and advises on the overall cidery image.

Events Manager
The events manager is a full-time position that reports to the general manager. This position develops in order to relieve the tasting room and events manager of event-related duties as these events increase in number. Duties may include event coordination, tours, scheduling, and other duties as necessary to facilitate the use of the orchard and cidery’s property as an event destination.

Office/Administrative Workers
These part- or full-time positions will report directly to the general manager. As sales and events increase, it may be necessary to add dedicated office workers to relieve the burden of administrative duties that are necessitated by growth.

Cider Maker Manager
This full-time position works under the supervision of the general manager in order to oversee additional cider makers and assistant cider makers as well as multiple production lines and additional equipment. As production and sales increase, additional production staff will be required in order to meet demand.

Bottling Associates
This part- to full-time position reports directly to the cider maker manager and may become necessary with an increase of production. Alternatively, this position may be seasonally necessary at times of peak production and bottling.

Laboratory Technician
This part- to full-time position would report directly to the cider maker manager and is responsible for monitoring the fermentation and flavoring of the cider. As production and different lines of cider products develop, it may be necessary to employ a dedicated laboratory technician.

Nelson County Apple Supply

Quality Assurance of Supply
Quality, as well as quantity, of apple supply will remain the priority for the cidery. As the business grows, it is vital to profitability and sustainability in the changing cider market that the cidery has access to apples according to production and delivery protocols defined by the cidery.

Continuity and quality of supply will be critical to the success of this operation. Should the cidery be located on its own orchard, supply will be under the control of the owners. However, outside suppliers may have to be considered should crop failure arise.

For a cidery that is purchasing its apple supply, the growing and harvesting practices of the cidery's supplier will be outside the direct control of the cidery owners. The cidery owners should consider the product and food safety regulation compliance, good manufacturing practices, and other regulatory safeguards employed by their supplier.
Overall, the quantity of apples to be utilized is not that large on a commercial scale. It is anticipated that the production will reach approximately 3,500 cases within the next three years. Because of the relatively small scale of the operation, inputs will be easier to monitor and control with regards to quality.

Apple Types
Quality hard cider is not typically made from grocery store varieties of apples. Desirable flavor and mouth feel are typically imparted through the use of sweet, bittersweet, bitter-sharp, and sharp apple varieties. The difference in these types of apples is largely due to their tannin and acid contents.

Cider apples are traditionally grown in England and France, not the U.S. Due to the increased interest in hard cider in the U.S.; these varieties are slowly becoming more available than they used to be as apple producers make room for these varieties on their orchards.

Hard cider production offers the potential for apple growers to utilize apples that cannot be sold in the fresh fruit market and reduce the growing costs associated with pest control and chemicals. The visual flaws and imperfections that interfere with the sale of imperfect apples in market and retail settings do not affect the flavor profile of the apple that is desirable for hard cider production.

An apple producer can mitigate some of the cost associated with growing fresh market apples as well because the cider market provides a profitable outlet for fruit that would typically be less suitable for sale. The byproducts of processing hard cider, such as the pomace after it has been pressed, can be sold for additional purposes if the right market is found. Pomace can be used to

produce pectin, liquors, and animal feed. These are all methods by which a normal waste product can be used to increase profits.

Table 13: Highly Desirable Varieties of Cider Apples That Can Be Grown In Region

Albemarle Pippin	**Kingston Black**
Arkansas Black	**Lintz**
Ashmeads Kernel	**Northern Spy**
Black Twig	**Parmar Winter**
Bramleys Seedling	**Redfield**
Cherry Crab	**Roxbury Russet**
Dabinett	**White Pearmain**
Esopus Spitzenberg	**Winesap Family:**
GoldRush	Original Winesap
Grimes Golden	Old Fashioned Winesap
Harrison	Turley Winesap
Hewes Crab	Stayman Winesap
Hyslop Crab	Virginia Winesap

The product grown by the orchard should consist of a mix of several apple varieties. Unlike wines, it is rare to produce a single varietal cider. Typically, several types of apples are blended to produce the desired flavor.

Descriptions[23]

The following descriptions are meant as a general guide for the apple varieties currently being used for hard cider production. These descriptions were taken from nursery sites such as vintagevirginiaapples.com and boyernurseries.com. According to sources at Virginia Tech, not all varieties have been tested for cider production in Virginia.

Albemarle Pippin

A vintage American variety. This fruit is large, its skin yellow with a pink blush, and its flesh is yellow, crisp, juicy, and sub-acid. It has a very distinctive taste and excellent keeping qualities. It can also be called Yellow Newtown Pippin. It is said to have originated on Long Island, New York in 1666 as a seedling brought from England. The Newtown Pippin needs a loamy, friable soil to produce a high quality crop. In the late 1700s and early 1800s, this apple was highly prized and often exported to London where they brought it at premium prices. The fruit ripens in October, and it stores quite well, its flavor improving upon storage.

[23] Sources: vintagevirginiaapples.com; boyernurseries.com

Arkansas Black
The fruit, which originated in Arkansas around 1870, is a reddish-purple, almost black, with a hard, yellow flesh. This apple is a good keeper and can best be described as “hard as a brick,” and its tree is quite disease resistant. The fruit begins ripening in late October and can be stored well into the winter months.

Ashmeads Kernel
This fruit is a small apple completely covered with a thick russet. The flavor is shockingly sweet, acidic, and could almost be described as "fireworks for the palate." It will never become a commercial apple because they are somewhat unusual; they are erratic in size and appearance. This fruit originated in England around 1700 and was brought to the United States much later. It ripens the last of September into October.

Black Twig
The coloration varies, but it is usually yellow, washed and striped a dark red or mostly red. Often some green background will show through the overlay colors. The yellowish flesh is very firm, juicy, aromatic, and tart. Black Twig exhibits some resistance to pests and diseases. A popular dessert variety in the nineteenth and early twentieth century in Central Virginia orchards, it was introduced in about 1830 as a seedling near Fayetteville, Tennessee. It is an excellent keeper but must be stored to reach peak flavor. It ripens in October.

Bramleys Seedling
This fruit is an Old English variety, a standard culinary apple of England. It is vigorous, productive, and late blooming with a considerable tolerance to scab and powdery mildew. It ripens early October.

Dabinett
The fruit makes a sweet, full-bodied cider. It is precocious and very productive. It blooms mid-season and is a late-season harvest. It widely planted in England and France. It is a natural semi-dwarf; the fruit grows to 1-¾". It reputedly has tolerance to fire blight and scab.

Esopus Spitzenberg
The fruit is yellow with red colorations. Its flesh is yellow, crisp, juicy, rich, and aromatic. Before 1800, it originated in Esopus, New York. Though a northern apple, it can produce quality fruit in most areas of the South. It begins ripening in September.

GoldRush
GoldRush is a rustic yellow apple that is sweet, tart, firm, and crisp. Apples are produced almost every year, and the tree produces fruit at an early age. It has good disease resistance, though it is susceptible to cedar apple rust. It ripens in mid-October and stores well.

Grimes Golden

The fruit is usually medium or large, and its skin is yellow with some russet. Its flesh is yellow, firm, juicy, aromatic, sweet, and spicy. It is a West Virginian apple originating around 1800, and was widely grown throughout the South. It is known as the parent of the modern day Golden Delicious. This eating apple also makes excellent cider. It tends to bloom late, making heavy crops most years and light crops other years. It ripens in September and stores fairly well.

Harrison

The apple's skin is yellow with many black spots, which gives a roughness to the touch; the flesh is rich, yellow, firm, and tough. The taste is pleasant and sprightly but rather dry. An eighteenth century American cider apple grown in New Jersey before and after the American Revolution, it became obsolete by the twentieth century. The Harrison was considered lost until it was recovered in Livingston, New Jersey at an old cider mill in September 1976.

Hewes Crab

The fruit is very small, green with a dull red coloration, and it has a flesh that is firm and acidic. Originating in Virginia, most likely during the early 1700s, it is a fine cider apple that makes a dry cider which is usually mixed with other varieties. It ripens in September.

Hyslop Crab

The fruit is large and brilliantly colored with yellow flesh sometimes tinged red next to the very firm skin. When first ripe, it is juicy, but quickly becomes dry and mealy. It is sub-acid and astringent. It was first recorded in 1869, but its origin is unknown. It is also called Hyslop Crabapple and is sometimes spelled Hislop. The tree is a good grower, very hardy, and yields good crop biennially or in some cases, annually. It is particularly good for jelly, pickling, and cider blending, and it ripens in late August in Virginia.

Kingston Black

This fruit is classed as a bitter-sharp, and is an irregularly shaped, medium-sized fruit about 2" high and 2-½" wide. The skin is a dark mahogany over an orange background, and the juice is a tawny red. It is moderately sweet, with a strong astringent aftertaste. A classic cider apple, it is speculated to have originated in Somersetshire, England in about 1820. It is thought to be named after the village of Kingston St. Mary and is probably related to other Somerset bitter-sharp varieties, such as Lambroook Pippin. It is one of a very few single varieties used for high-quality cider making. Kingston Black ripens in late September but has the reputation of being difficult to grow.

Northern Spy

The fruit is large, especially on young trees. On well-colored fruit, there is a clear-yellow shade with bright, red tints; the yellow under-color that makes the red almost scarlet, but the fruits' colors can be quite variable. The white flesh is very juicy, crisp, tender and sweet with a rich, aromatic, sub-acid flavor and is a good dessert apple and pie apple that is also used for cider. It may have originally been called Northern Pie Apple but is also known as Red

Spy and Red Northern Spy. It was found in an orchard in East Bloomfield, New York; its seedlings were brought from Connecticut about 1800. Northern Spy, one of the best storing apples, ripens in late September and early October.

Parmar Winter
Small in size and oblate in shape, this fruit has skin that is a dark yellow with irregular, russet patches over most of the fruit. The flesh is also a dark yellow, especially just beneath the skin, and has dense, sub-acid in flavor. Also known as Yellow Flat, it is likely is an eighteenth century Virginia apple that was once popular for brandy making. Parmar stores well for a summer variety, and ripens in late July and early August.

Redfield
The fruit is medium to large, and its coloration waxy pink to red. The deep red flesh is slightly dry, making it a superb baking apple that also produces an exceptional jelly, blood-red cider, or vinegar. A highly unusual cross between Wolf River and Niedzwetzskayana Red Crab, it was developed at the New York Station in 1938. It is high in pectin, but is not for fresh eating, and has a short storage life. The hardy tree is disease and pest free and ripens in October.

Roxbury Russet
The fruit is medium or large and green to yellow in color with a brown russet. Its flesh is yellow, coarse, and firm with a sub-acid flavor. This apple is the oldest American apple, originating early in the 1600s in Massachusetts. This variety has long storage life and makes a good single-variety sweet cider. The tree is a healthy grower, usually bearing large crops most years, and exhibits resistance to many apple diseases. It ripens in September and October.

White Pearmain
The fruit is medium in size, uniform in shape, and possesses light green skin that is usually flushed red on one side. The mildly sweet and pleasantly aromatic flesh is firm, fine-grained, and crisp; it is an excellent dessert apple as well as the oldest known English apple. White Pearmain is a vigorous tree well adapted to coastal districts out West.

Winesap Family:
Originating in New Jersey before 1800, this apple has become well favored throughout the South. It has the ability to grow on most southern soil types, most notably clays. The tree is immune to cedar apple rust and has the ability to produce crops almost every year. It is a good keeper, fine for cider making, and has the trademark “twang” of the South. Winesap is the parent of many other great apples such as Arkansas Black, Blacktwig, Kinnaird’s Choice, and Stayman.

Original Winesap
The fruit is medium or small; its skin is a dark red with red stripes and some yellow patches when shaded, and it has a flesh that is yellow, firm, crisp, juicy, and aromatic with sub-acid flavor. This fruit ripens in October.

Old Fashioned Winesap
Its skin is entirely dark red and is a much larger apple than most Winesaps. Sometimes called Red Winter, it ripens later than most, sometimes hanging on the tree into November. It is the best keeper, and its flavor improves over several months of storing. They also make good cider.

Stayman Winesap
The fruit is medium or large, and its skin is greenish with some red around most of the apple. The flesh is yellow, fine grained, firm, juicy, and sprightly sub-acid flavored. Originating in Kansas in 1866 as a seedling of the original Winesap, it has been an important commercial apple for the past 100 years. It grows well in the South and is resistant to apple scab and cedar apple rust. The fruit is good for fresh eating, cooking, and making cider. It ripens in late September into October.

Turley Winesap
The apple is medium to large in size, and round in shape. Its skin is a dull red, covering most of the surface of the fruit, and its greenish-cream colored flesh is firm and juicy with a sub-acid flavor. Turley Winesap resembles Stayman Winesap, but it is more crack resistant, and is considered to have more delicate flavor than the Stayman. It is good for cooking or baking with fair-to-good dessert quality. The fruit keeps well in cold storage and ripens in early October.

Virginia Winesap
This fruit is a redder sport of Winesap originating in Troutville, Virginia in the 1920s. It is a good keeper and ripens in late October.

Seasonality

Seasonality is an important issue for every agricultural venture. Continuity of supply is vital because the customer expects orders to be filled as they are placed. Apples have a specific cycle of production, and yet there is a need to furnish cider for sale all year long from just one harvest. In order for the business to grow and thrive, the orchard and cidery must be prepared to supply what its customers demand.

IMPLEMENTATION PLAN

A venture such as the one being proposed by Nelson County cannot compete directly with the large crushing and processing facilities in operation today. However, it has proven feasible for small “boutique” operations to fill requirements of niche markets. The cidery should focus on filling such a niche market with its artisan cider. As a small producer, the cidery operation will face higher costs. It is imperative that the cidery works to create high-quality, valuable ciders and utilize highly qualified and experienced staff to operate the business as it grows.

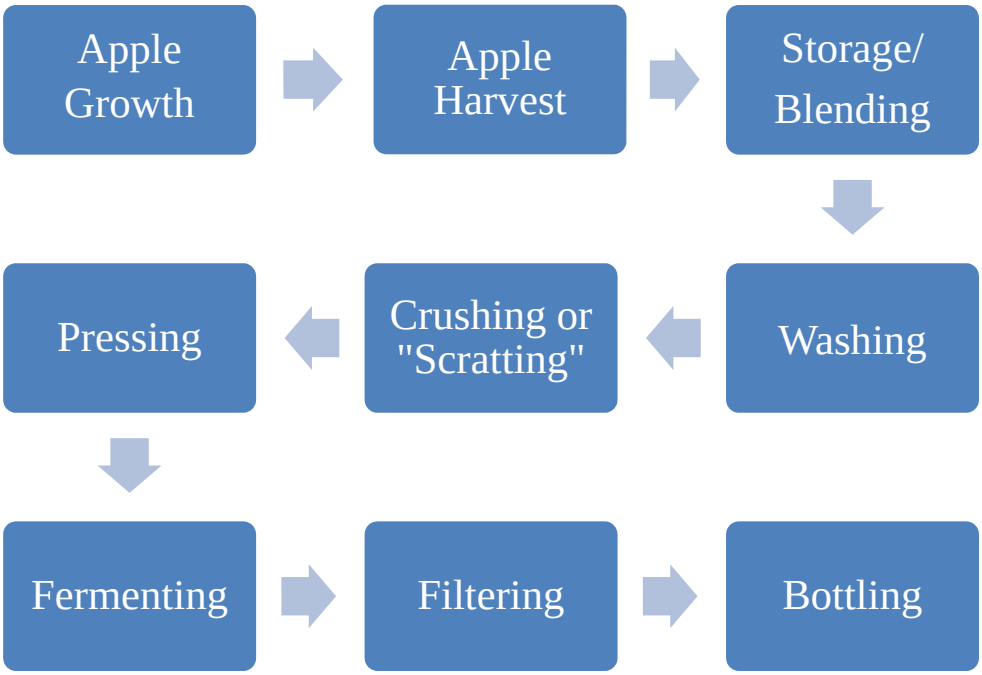
The progress and successful achievement of the objectives and action plans of the orchard and cidery require the monitoring and control of a short-term implementation plan.

Cider has a history reaching back hundreds of years. Fresh apple cider is made by pressing or “scratting” apples and collecting the resulting juice. After various methods of fermentation have been applied, the results vary from beer-like, fizzy drinks and dry, hard liquor to finely bottled champagnes and wines depending on the processing method that is chosen.

As with most natural products, the preference for type and methods of production are as varied as the regions capable of producing apples. In England, the world’s largest consumer of alcoholic cider (“hard cider”), the beverage is produced much like a beer, with alcoholic content varying to match. It is generally stored in beer bottles or kegs and sold on tap or by the bottle in local pubs and breweries. In France, the preference is for a wine-like beverage is to bottle it like champagne, and in northern Spain, hard cider is processed into a more complex wine product.

The end products’ Alcohol By Volume (ABV) changes depending on the juices’ initial sugar content or the amount of chaptalization (sugar added during the fermentation process to produce higher levels of alcoholic content, usually done to ensure alcohol content consistency).The distinction between apple wine and hard cider is usually made based on alcohol content, with hard cider considered below 7 percent ABV and apple wine products considered to contain above the 7 percent ABV mark.

Figure 4: Typical Cider Production



Apple trees can be divided into two main categories: standard and dwarf. A standard apple tree can grow to be quite large, and thus, for production purposes, a dwarf tree is desirable because of

the ease with which it can be pruned and harvested. Apple trees grown in commercial orchards are grafted composites of a scion (fruit bearing variety of choice) and a rootstock. Typically, dwarfing rootstocks are used to control the mature size of the tree. Dwarf root stock trees usually take between three and four years to begin producing fruit and a standard root stock tree can take up to eight years or more. The average apple tree will take between two and five years to begin producing fruit.

After the apples have ripened and been harvested, it is necessary to clean the apples and make sure as much foreign material as possible is removed from the fruit. The apples are inspected, sorted, cleaned, and rinsed before settling in an accumulator bin. The apples are then fed into a grinder where the whole apples are ground into pomace (fruit pulp).

The pomace is processed through a press of some type in order to extract as much juice as possible. There are several types of presses that could be utilized depending on the amount of cider to be produced and the preferred processing method chosen by the cidery.

Figure 5: Rack and Cloth Press

Depending on the volume that the cidery intends to process, one of the most common presses for smaller production facilities is the rack and cloth press. This press can be operated by hand, but most modern equipment utilizes a hydraulic mechanism to apply the pressure. The pomace is formed into bricks known as cheeses, and multiple layers form a set. Straw or modern drainage material is laced in between in order to allow drainage during pressing. The set is pressed, and the juice, or "must," is collected in sterile containers for fermentation. After pressing, the pulp is usually sold/used for compost, animal feed, further processing, or is discarded.

Figure 6: Squeezebox Press

Moving up in capacity to semi-commercial style presses, a squeezebox style press allows large amounts of pomace to be pressed at one time while maintaining production volume. Pomace is typically pumped via a sprayer-type hose and used to load the top filling accordion-style pockets of the press. The machine is of a split type that allows one side to be filled while the other is pressing. Then the machine alternates to allow for the ejection of the pressed pomace while the other side is pressing. This allows for maximum efficiency in the pressing process. Hydraulic assist facilitates the dumping of the pressed pomace for easy removal. The resulting must is collected in a bin located below the pressing filters.

The unfermented product can be either pasteurized or sterilized in some manner prior to fermentation, or it can remain in its natural state to allow fermentation to take its natural course.

During fermentation, the cider is either stored and allowed to naturally ferment or processed further through the addition of sugars and yeasts. The further processing allows the cidery to control the end flavor profile and mouth feel of the hard cider product and ensure consistent taste across production lots. At this point, there are several options. Some producers allow natural yeast present in the product to take its course, while others utilize juice concentrate, preservatives, production yeast, and additional additives to produce a consistent product for sale on the large-scale consumer market. One common way to differentiate artesian cider is to not use juice from concentrate, opting to use fresh apple juice and the naturally occurring yeast to ferment the product. The resulting fermented product is then filtered depending on the clarity desired and is usually stored for further processing/blending, readying it for bottling.

The type of fermentation that is chosen affects the end appearance of the cider. Clear, cloudy, sweet, dry, dark, or light cider, the varying flavor profiles, and other characteristics are produced according to a variety of processes for fermentation, filtering, and storage of the alcoholic cider. Racking, siphoning, or filtering is typically used to leave behind the dead yeast cells, and the process can be repeated at various stages to produce even clearer cider. ABV content (Alcohol by Volume) is typically capped at 7 percent in the U.S., and ranges anywhere from 3 percent to 7 percent.

Figure 7: Cider Process Diagram

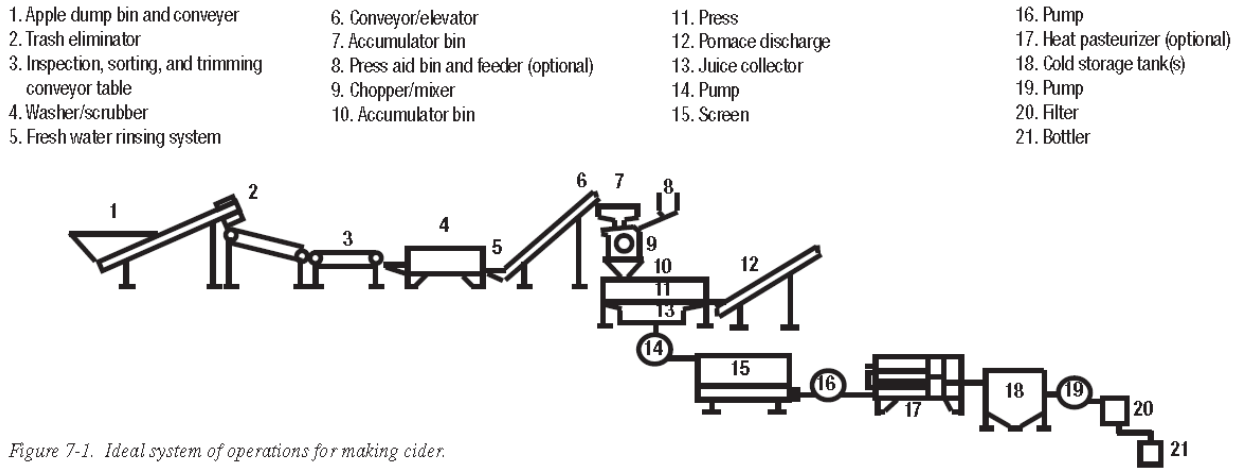


Figure 7-1. Ideal system of operations for making cider.

Source: Pennsylvania 2012 – 2013 Tree Fruit Production Guide Pennsylvania State University, 2012.

On average, a bushel of apples can yield approximately 3.0 gallons of cider. One gallon will fill five 750 ml bottles. After the juice has been pressed from the pomace, it is screened and filtered, and either pasteurized or simply stored in fermentation tanks. The cider is then ready for fermentation.

At some stage during the production process, blending takes place. Since single varietal cider is rare, many times a blend is necessary to produce a quality hard cider.

Near the end of the process, or during bottling, CO_2 is added to enhance the flavors of the cider. Many suggest that the delicate flavors of hard cider benefit from the addition of some carbonation.

After the fermentation and other processes are complete, the hard cider can be bottled for shipping and sale.

The commercial strategy involves direct sales, mainly via the tasting room. Therefore, the cidery should produce a wide range of ciders to provide the visitor with several choices and an unforgettable experience. Also, the strategy includes offering varietal ciders and special blends not only for direct sale, but for wholesale purposes to reach the higher-end consumer in restaurants and stores.

Breaking into a highly competitive market is a difficult task, and the promotion strategy will be of major importance to the success of the cidery.

For the purposes of this study, the cidery is assumed to produce two lines of cider: a Premium line, consisting of a long fermentation process producing a higher alcohol content in a dry, wine-like cider sold in 24 oz. wine bottles (750ml); and an Everyman line, consisting of a short fermentation process which will produce a sweeter, beer-like cider that will also be sold in 24 oz. (750ml) bottles. Some production of the Everyman product should be produced in kegs for use in the onsite tasting room and to facilitate sales to restaurants or for events.

Provided sales grow as expected, new approaches to the market will probably lead the cidery to further develop other types of cider.

Besides cider, the cidery could offer souvenir items and other cider/wine related items for sale. Some of the non-cider products could include: paintings, t-shirts, crafts, foods (jams), jewelry, and accessories for ciders such as decanters, glasses, etc.

Specific Process for Nelson County Prototypical Cidery

The cidery will follow a daily process similar to other wineries and cideries. During harvest time, which can range from July all the way through late November depending on apple variety, the apples will be harvested and stored in large wooden or polymer crates for ease of movement throughout the orchard and cidery.

Movement will be facilitated through the use of a forklift or pallet jack. Blending can take place before the apples have been processed, after pressing and before fermentation, or after the must has been fermented. The assistant cider makers will follow the direction of the cider maker in following the preferred procedure.

Apples will be brought to the beginning of the processing line where they will be transferred to the sorting and inspection table. Larger operations make use of a semi-automatic hydraulic bin lift and tipper; however, the expense and high-volume application of this type of equipment would not be necessary for the small-farm cidery. The apples are inspected at the table and unsuitable apples and large debris will be separated and discarded.

The apples will then be loaded into the washer. The washer will consist of a fresh water bath and a possible agitation mechanism ending in an elevator and conveyer system that will move the fruit along in the production process.

The elevator will lead directly to the chopper ("scratter") for processing. This piece of equipment will be mounted above a collection hopper and a specialized pomace pump which will collect and propel the slurry (pulped apple material) to a dispensing hose mounted above the press.

An operator or an assistant cider maker will use the dispensing system to fill and operate the press. After pressing is complete, the pressed pomace will be discharged into a bin for removal. The resulting juice is collected by the press drain pan and pumped to holding tanks.

After the juice has been pumped into the tanks and production has ceased for the day, the equipment will need to be cleaned and inspected to be ready for the next day's production. The washer and inspection table will need to be drained, rinsed, and cleaned. The chopper and pomace pump lines will need to be purged, cleaned, and sanitized. The press itself will need to be cleaned and sanitized to prevent unwanted bacterial growth. The lines and hoses used in transferring the must to the tanks will need to be purged and sanitized. Any and all utensils will need to be cleaned, sanitized, and stored.

Figure 8: Juice Flow Diagram

A typical fermentation period will take place over the time span of approximately three to four months. The length of fermentation is largely dependent on the fermenting conditions and desired characteristics of the end product. During this time, the fermenting cider will need to be monitored and tested to ensure that a batch is not lost. A typical batch will consist of approximately 500 gallons; however, batch size can be adjusted as necessary through the use of variable capacity tanks which allow for flexibility in batch size. This is especially useful if the cidery should decide to produce a limited-run or test batch of a new variety.

Cideries may also utilize what is known as "racking" during the fermentation phase of cider production. While the juice is fermenting, waste byproducts that are produced by the fermenting yeast and leftover particulate that made it through the pressing process along with the must will result in the formation of sediment. Racking drains off the partially fermented must at a level slightly higher than the sediment line and leaves behind much of the particulate matter that has accumulated.

Depending on the desired end product, a maturation phase may also be utilized before bottling. This process, similar to wine maturation, involves allowing flavors to develop within an aging period. Typically, the product will be stored in bulk containers (additional tanks, wine barrels, totes, flex-tanks) during this phase.

Once the product has reached the necessary level of fermentation, taste, and alcohol content as determined by the cider maker, the resulting hard cider will be pumped through a plate and frame filter. The use of the filter will result in a clear cider product with all particulate matter filtered out before bottling or other containment.

The bottling will also be part of the duties of the cider maker and assistant cider makers. After bottling, labeling, and packing, the cider will be moved to a storage area and ready for sale. The tasting room will have access to the cider for customer sales and tastings.

The tasting room manager will direct one or more of the tasting room associates in the sale and customer service aspects of the cidery. Greeting customers, answering phones, and day-to-day sales operations will be conducted based on customer traffic.

Current and Potential Size of Market

The agricultural production sector is diverse and varied. Beef production and traditional crops, such as tobacco, long the mainstay of farm operations in the region, continue to decline as the major components of agricultural production throughout the area. However, dairy farms, poultry production, apples and peach orchards, vegetable operations, and horse farms contribute significantly to farm receipts in certain counties within the region.

Non-traditional operations, such as wineries, are becoming more commonplace. These types of businesses require a focus on branding and marketing as well as on the production of the product sold.

Apples

Virginia is the second largest apple-producing state in the Mid-Atlantic region and the sixth largest apple-producing state in the U.S. Production is centered in the western counties and along the North Carolina border. Across the rest of the state, fresh production dominates.

Virginia produces mostly five varieties: Red Delicious, York, Golden Delicious, Rome, and Fuji apples. Recent interest is growing in the production of varieties such as Gala, Braeburn, and Ginger Gold as well as more dwarfing rootstocks.

A five year average of the years 1994-1998 shows a crop value of $31.0 million.[24] As of 2010, apples represent $33 million in cash receipts in the state of Virginia, according to the Virginia Department of Agriculture and Consumer Services (VDACS) website.

[24] http://www.virginiafruit.ento.vt.edu/VirginiaAppleSite.html

Alcohol

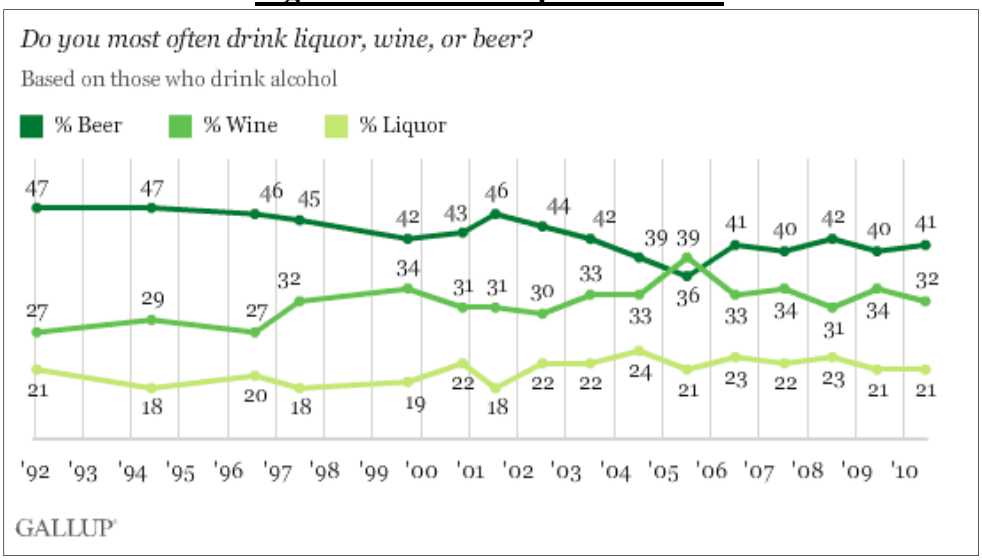
According to the 2011 annual report[25] of the Virginia Department of Alcoholic Beverage Control (ABC), gross sales of the wholesale/retail alcohol division exceeded $692 million, a 17.3 million increase from 2010.

While the largest sales category and most dominant form of alcohol consumption among Virginia ABC stores was distilled spirits (accounting for 99 percent gross sales percentage), Virginia Wine was second in sales with just over 103,000 liters of wine representing $1.5 million in gross sales. In direct sales from wholesalers, Virginia Wine adds another $34.8 million in gross sales.

Despite being second in gross sales by percentage, Virginia Wine showed a slight decline (3.4 percent) from 2010-2011, represented by 12, 017 cases sold in 2010, and 11,609 cases sold in 2011. According to the 2011 annual report's Establishments by License Category table, there are 22 licensed wineries in Albemarle County and 10 in Nelson County.
According to a 2010 Gallup poll,[26] 67 percent of Americans consume alcohol. Age demographics indicate that an equal percentage of people polled between the ages of 18-34 and 35-54 drink alcohol at 72 percent each.

As a whole, beer is the most commonly consumed alcoholic beverage, followed by wine. Liquor products are least commonly consumed. In general, slight declines in beer consumptions coupled with slight increases in wine consumption show these two products converging, while liquor percentages have remained relatively stable.

Figure 9: 2010 Gallup Poll Results



To stand out in the market place, local products must create brand recognition and loyalty among consumers.[27] The challenge is to create a marketing "story" and brand identification that resonates with targeted consumers. Two important features include:

[25] http://www.abc.virginia.gov/admin/annual/docs/2011ar.pdf
[26] www.gallup.com/poll/141656/drinking-rate-edges-slightly-year-high.aspx

i. Locally produced food/beverage, raised by family farmers:

The American consumer has compassion for farmers, especially local ones. The locally produced family-farmer connection is a valuable marketing tool. Most consumers support small- and medium-sized producers who add to their rural communities.

ii. Appealing to the palate of the connoisseur:

A very palatable cider to one person may seem undrinkable to another. Finding and maintaining the right mix of ciders to appeal to all tastes is a vital part of the branding process. If a cider's label is recognized for quality and taste, sales will increase.

Within the Mid-Atlantic region, there is more than enough demand to sell the entire amount of product that the cidery can produce. Therefore, it will be the marketing capacity that will determine how far and how fast the demand for the cidery's product increases.

Sales and Marketing Feasibility

Price Sensitivity. Marketing systems must be selected that generate differentiated products that are in demand. To enter into a quality, high-end market, the products will need further modification. This can take place in both the production and the processing. The cidery should plan to utilize systems that address the market potential in both of these areas by focusing on quality and sustainability.

Branded products. Branded products are the "gold standard" of products. Consumer confidence and trust are implicit in the brand name. Generally, brand loyalty goes well beyond the ingredients listed on the product label and is a large part of the intangible value of the brand. Branded product companies go to great lengths to protect and cultivate their consumer loyalty.

The table presented above lists several standard marketing factors that may impact the ability of the venture to affect its price in the market. Basically, the more unique or differentiated the product the greater the ability to charge a higher price. Also, the ability to have claims backed-up with research is important in securing pricing.

It is not only important to target the high-dollar markets, but also to have a flexible plan that allows moving of surplus material into the volume markets. All products that the cidery produces may not be high-dollar-market quality. This forces the orchard to have separate strategies for the various lines of cider sales.

The higher the quality of the product, the more differentiated from competition and the less sensitive the pricing will be. Avoiding competition with high volume cideries allows higher margins on sales.

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[27] There is no generally accepted definition of "local" food. According to the definition adopted by the U.S. Congress in the 2008 Food, Conservation, and Energy Act, the total distance that a product can be transported and still be considered a "locally or regionally produced agricultural food product" is less than 400 miles from its origin, or within the State in which it is produced". www.ers.usda.gov/Publications/ERR97/ERR97_ReportSummary.pdf

The cidery should consider eventually selling its ciders into the following markets:

- Direct marketing to local customers
- Local retail stores
- Via distributor/s
- Local hotels/restaurants
- Retail chains

Table 14: Factors Influencing Price Sensitivity

Unique Value Effect	Buyers are not as price-sensitive when the product possesses some type of unique or special feature not available in other products (i.e., an artesian variety of hard cider).
Substitute Awareness Effect	If there are not apparent substitutes, the buyer is less price-sensitive (i.e., if the cidery produces the only hard cider product in town).
Difficult Comparison Effect	When products are harder to compare, buyers are less price-sensitive (i.e., is commercial hard cider as good as artesian varieties?).
Total Expenditure Effect	As the price of products increases in relation to the buyer's income, the sensitivity also increases (i.e., reduced-income families will probably opt for less expensive commercial varieties of hard cider).
End Benefit Effect	If the buyers can identify that the benefit is greater than the price, there is less price sensitivity (i.e., if the cost is $10 and the return is $100, the cost concern disappears).
Shared Cost Effect	When part of the cost is shared by another party, buyers are less price-sensitive (i.e., producers offer a special to split the cost of transportation for deliveries to retail stores).
Sunk Investment Effect	If the product is used in conjunction with assets purchased previously, the price sensitivity is lower (i.e., purchase of an apple press that has a capacity in regards to the amount of apples that can be pressed at any one time).
Price-Quality Effect	If the product is viewed as leading, top-quality cider, price sensitivity is lover (i.e., products offered with customer feedback backing up their claims versus generic products).
Inventory Effect	If the buyer has no storage capacity, they will be less price-sensitive (i.e., just-in-time inventory for small restaurants and bars).

(Adapted from "The Strategy and Tactic of Pricing."—Thomas T. Nagle, Prentice Hall, 1987)

Marketing Plan for the Cidery

The business-marketing model should focus on the opportunities for growth that are identified. The target audience for the cidery is based on the strong points of differentiation from other segments of the alcohol industry; the cidery will be producing a local product and historical beverage and will offer the potential of a day-trip destination.

The cidery should be aware that it takes a long time to build an image for a company and that quality of the product and service are essential factors to success. The owners should be actively seeking ways to market their products directly to the consumers, avoiding intermediaries and increasing returns.

The unusual characteristics of this project–an increasingly in-demand product coupled with a local image and small batch attention to detail–can help create a unique selling proposition for the cidery.

The unusual characteristics of this project–an increasingly in-demand product coupled with a local image and small batch attention to detail–can help create a unique selling proposition for the cidery.

The cidery should consider having a vision and mission that encompass the direction the owners wish for the cidery to take, focusing on customer service, delivering value, and creating a unique emotional connection with its customers.

The marketing strategy will be significantly influenced by the type of end product that the cidery pursues. Wine drinkers and beer drinkers often represent a distinct demographic divide. Targeting one group of consumers over the other will require product differentiation marketing that takes into consideration the tastes, expectations, and flavor profile desired by these very different consumers.

The business marketing model should adapt to opportunities for growth that the cidery identifies by pursuing new marketing strategies. Customer needs and the cidery's staff should jointly determine product and production specifications. While the cidery will most likely choose a specific product type to produce, this study attempts to present both types of products in order to be as applicable as possible to a wide range of potential producers.

American consumers are becoming more discerning about how and where their food and beverages come from and what cultural and environmental practices were used to make them. This is particularly important for luxury items such as wines and ciders. Combined with changing tastes, consumers are ready for choices in the beverages and alcoholic products that they buy and will pay more for superior, distinct products.

Target Markets

Wine, and by extension, cider, is particularly well-suited to target the demographic of female alcohol drinkers. Their characteristics include the facts that women are looking for a more "feminine" drink than beer, that they don't generally like beer products, and that they are searching for a drink with less alcohol content than other alcoholic beverages, especially liquor. Several statistics show a relative balance between male and female demographics in cider drinkers, whereas beer demographics are dominated by males.[28]

Target demographics in the U.S. are changing. Cider has traditionally suffered from being viewed as a "girly" drink, like a wine cooler. Most people assume there is an overly sweet, "jolly-rancher" taste to hard ciders, which is typically seen as less "manly" than beer's bitter taste. However, because drier ciders in England are on par with beer consumption, it is clear that there is a misconception either because of public understanding regarding the variety of hard cider options or as a result of the "mass appeal" flavor profile produced by commercial cideries.

Gender related demographic data from a 2010 Gallup poll confirms the anecdotal market research that indicates that while the majority of men prefer beer as their drink of choice, a majority of women tend to prefer wine.

[28] http://www.nvcc.edu/home/amalitzkego/brenna/cgsam1.html

Preferred Drink, by Demographic Subgroup

Based on those who drink alcohol

	Beer	Wine	Liquor
	%	%	%
Men	54	17	22
Women	27	48	21
18 to 34	51	22	24
35 to 54	44	30	22
55 and older	30	42	20
Men 18 to 49	59	14	22
Men 50 and older	47	21	21
Women 18 to 49	35	39	25
Women 50 and older	18	58	18
East	42	37	17
Midwest	46	27	24
South	37	31	24
West	40	34	20

July 8-11, 2010

GALLUP

Figure 10: Gallup Poll Gender Results

Many of the gains in the hard cider market have resulted from successfully marketing hard cider products in a more refined manner, elevating them to better compete with wine products and capitalizing on the fact that hard ciders lend themselves well to variety. The market in the U.S. can be thought of in three terms: Upscale, winery-like products; hard-working, blue-collar, beer type products; and the import market that is intended to capitalize on ethnicity and selectivity (British cider, Irish cider, "imported" in general).

Cider has largely ridden the wave of popularity associated with micro-brewed beer products and artisan culture. Many people in the demographic age of 21 to 35 seem to be searching for the next unique product. As evidenced by the recent interest in hard cider products displayed by large market players (MillerCoors, Boston Brewing Company, etc), the market is focusing on hard cider products as a unique alternative to beer.

It is clear that while significant market share remains to be captured, the leaders of the hard cider production market are experiencing consolidation already-MillerCoors has acquired Crispin, the number three producer of hard cider in the U.S.; Vermont Hard Cider Company owns several of the top hard cider producers in the U.S. including Woodchuck brand ciders.

As reported in an interview[29] with Bret Williams, president and CEO of Vermont Hard Cider Company (makers of Woodchuck hard cider):
"When I asked Bret who drinks these cider products, he said the demographic of drinkers is heavily skewed to the 21 to 35 crowd but is divided evenly male-female. Interestingly, he said, a growing group of cider drinkers has been turned on to Woodchuck products because they are naturally gluten-free. With Celiac and other food intolerances on the rise, these ciders allow former beer drinkers to have a bottle in hand when out with friends rather than drinking wine."

This popularity among female drinkers is a dramatic contrast to beer demographics where beer consumption is overwhelmingly male-dominated, with men accounting for more than 80 percent of the volume consumed[30].

[29] http://westminstervine.net/index.php?option=com_content&view=article&id=178&catid=7
[30] http://www.beer-brewing.com/beer-brewing/US_beer_industry/beer_demographics.htm

An objective for the cidery should be to craft an image of a Virginian boutique cidery. Some cider lines should target the top-end consumers, who are educated or can be educated in ciders and are looking for a premium product. In this context the cidery can plan to focus efforts in selling its ciders in its tasting room coupled with hotels, high-end restaurants, and quality food retailers such as Whole Foods Market.

This model focuses on opportunities for growth for the cidery. These opportunities include marketing strategies, most notably working on ciders and other complementary products that target the emerging high-end consumer market segments. The target audience for the cidery is based on the strong points of differentiation from other cideries in general. That is, a local, American-style product with modern wine notes and cidery services as well as the potential of a day-trip destination.

Sales from the tasting room are essential, and as production increases, the cidery should consider expanding its sales channels as well. A unique selling proposition supported by a modern American tasting room and complementary non-cider products should help the cidery achieve its objectives. The cidery should be able to bring its product into an emerging and potentially lucrative market.

Product

Within the hard cidery industry, two clear product types emerge. Wine style cider attempts to attract a more refined and discerning demographic, while beer style ciders market themselves as every day alternatives to beer and other malt products.

Most operational cideries will eventually choose to focus on one product type or the other. This is mostly due to factors such as:

- *Budget Constraints.* Many smaller cideries will lack the funds necessary to focus on two separate and distinct product lines. Different fermentation techniques, lack of expertise regarding the processes, and other factors make it difficult to focus time and energy on such diverse products.
- *Overhead Reduction.* The economy of scale and efficiency that results from the production of a single product line can significantly impact the overhead of a new cidery.
- *Avoiding Multiple Packaging Types.* Closely related to overhead, avoiding the need to purchase separate types of bottles, caps, labels, and inputs such as yeasts can affect the overall efficiency and profitability of a venture.
- *Operational Inefficiencies.* Multiple package types necessitate different materials for packing, shipping, and transport. Splitting already valuable time and monetary resources between distinctly different product lines can add to the inefficiency of a venture and contribute to a lack of focus in marketing.

While individual ventures may choose one or the other product line, this study considers both distinct products in order to provide a more comprehensive industry analysis.

No matter which product type is ultimately chosen, the cidery should offer variety within that line in order to capture the widest demographic range of cider drinkers, while still balancing production costs to limit overhead.

For consideration, the prototypical cidery is faced with two broad categories of products:

1. Wine-style ciders with the following general characteristics:

    - Flavor profile ranging from dry to sweet
    - Higher alcohol content (6-7 percent ABV)
    - Image of high quality
    - Price point at the upper end of the target range ($20-23/bottle)
    - Targeting traditional, mid-level wine drinkers
    - Possibly sold in 750ml bottles

2. Beer-style ciders with the following general characteristics:

    - Flavor profile with an emphasis on drinkability
    - Lower alcohol content (4-5 percent ABV)
    - Image of approachability
    - Price point at the lower range ($6-10/bottle)
    - Targeting traditional beer drinkers, people who normally do not like beer but are willing to try a substitute with similar properties, and consumers typically less willing to spend but who desire a good product.
    - Possibly sold in 6-packs of 12 oz bottles.

In addition to these two broad categories, the cidery will have to make decisions regarding varieties within the categories. Utilizing heirloom variety items will increase the input cost of producing such a varietal of hard cider, and will most likely be targeted at a higher income level consumer. Using juicing and fresh market apples, a lower price input product, will result in a less nuanced product more suitable for the beer-style beverage market. A blend should also be considered that will target a mid-range price. The blend would be able to utilize both heirloom and lower end juicing apples to complete the range of products offered.

In selecting and producing blends, there are many characteristics that are singled out for comparison, especially in regards to wine culture. While these are too numerous to be presented in this study, the following product and flavor characteristics serve as broad representation and should be considered:

- ***Aroma:*** Much of what a person perceives as taste is influenced by aroma. Studies suggest that tastes that are experienced other than the basic four of Sour, Sweet, Salty, and Bitter are mostly the result of smell.

- ***Dryness****:* A process is utilized to ferment nearly all the present sugar. Dryness is typically considered the opposite of sweet, and is perceived as more of a mouth feel than an actual flavor. Allowing the fermentation process to completely convert sugar into alcohol results in very low sweetness, but allows other flavors to shine through.

- ***Sweetness:*** A process is utilized that allows some natural or added sugar to remain, thereby producing an overall "sweet" flavor profile. A beverage that is perceived as "too sweet" leads to an overwhelming taste and a need to cleanse the palate by switching to another drink, while drinks perceived as "not sweet enough" lead to the perception of being undrinkable. The ideal cider would address these concerns by offering unique flavor while maximizing drinkability.

- ***Drinkability:*** A word that often refers to the amount of beverage (especially alcoholic) a person will tend to consume in one sitting. Factors such as flavor, dryness, and sweetness affect how much of a beverage one will consume before needing a cleansed palate. From research, this consideration was mentioned regularly on alcohol and beer forums. Some of the main things drinkers focus on is the presence or absence of apple aroma, "appley" taste, and drinkability. Some of the competition has been criticized for being overly sweet or lacking in any sweetness, which affects the number of bottles a person would consider drinking in one session.

These distinctions are widely subjective and will vary among consumers; however, extremes in any category should be avoided, and an effort should be made to present a balanced flavor profile.

While these are main categories, cider, like wine, can have any combination of these characteristics. The cidery should concentrate on producing enough variety so they can appeal to a broad range of consumer tastes and preferences while still retaining a unique and distinct flavor that differentiates them from the competition. This uniqueness of flavor is especially necessary to differentiate the small-scale farm winery product from the national competition's products.

Even though the cidery is fairly new, it should produce ciders with the potential to fulfill, even exceed, the expectations of the target customers.

Product Packaging

Another marketing element used to determine quality and brand is the type of bottles and kegs. The cidery should consider the use of different bottling types depending on the product they intend to producer, as well as the corresponding market segment they intend to capture. The type of packaging is mainly influenced by the product it contains, and the target consumer selected by the cidery. The experience and "look and feel" that a customer is looking for should not be underestimated in the selection of product packaging. Packaging is an essential first impression that can influence the way a customer views a product, and in many cases, it influences their perception of taste.

Wine bottle: Typically a 750ml bottle (24 oz.) of an elongated design, especially the neck portion. This bottle style is synonymous with wine and is recognized on sight by most customers. It will provide the initial impression of the taste that is to be expected from the product that is contained in this style of bottle. If a wine style bottle is utilized, the product should exhibit the complex flavor profile, aroma, and quality typical of a wine product.

Beer bottle: Typically a 375ml bottle (12 oz), this design also carries with it an expectation in the mind of a customer. A person purchasing a product in a beer-like bottle will most likely compare its contents to the beverage they are most used to consuming from such a container. Because the beer style beverages typically contained in this style container emphasize drinkability, the bottle is of a smaller size than the wine bottle in order to promote higher quantities of consumption.

Keg: Found in a variety of sizes, kegs are a durable and reusable container typically made of stainless steel, and sometimes aluminum. In the U.S., kegs are primarily used to dispense beer products, and because of this association the keg has become synonymous with beer. A leading beer manufacturer, Heineken, has produced beer in "keg-styled" cans capitalizing on the association as a marketing tool.

Labels: The labels are another key market factor. Labels are the first part of the product that a consumer sees when trying to decide on a beverage. Given the focus on quality of the product, the labels should reflect the quality of the contents. Wines typically have a front label with a direct and clear message by means of the logo and the name as well as the legal requirements compulsory for wine (see Brand Registration and Trademark). A back label explains more details about the product and provides serving suggestions, historical info, or brand information. Because cider is considered a wine according to regulations, the cidery should consider following similar guidelines, regardless of the style of bottle that is ultimately chosen.

A large portion of Nelson County is located within the Monticello American Viticulture Area (AVA) as defined by the Alcohol and Tobacco Tax and Trade Bureau (TTB) and consequently, should be permitted to claim this designation on the labels.

It is assumed that the cidery intends to use quality inputs in terms of bottles, labels, and caps.

A logo design should be established that suits the products being offered and the market that will be targeted. The cidery should seek to work with a designer or consultant who can help improve any initial logo design in order to create a distinct image and brand for the cidery. The logo design should be a symbol or picture that tells a story, and communicates the underlying philosophy and ethos of the cidery.

Brand Registration and Trademark

Federal registration of a trademark is not mandatory, however it should be considered that time and effort that has been placed into the establishment of a brand and the story that is connected to it cannot be well protected without it. Federal registration serves notice to the public of the registrant's claim of ownership of the mark, legal presumption of ownership nationwide, and exclusive right to use the mark on or in connection with the goods/services listed in the registration.

Though the cost is not included in the financial section of this study, the name and design chosen by the cidery should be trademarked and registered at the federal and state level. Additional information regarding Brand Registration and Trademarks can be found in the Registration and Regulation Risks section of this study.

Place

The larger cities within a 100 mile radius from Nelson County are: Charlottesville, Harrisonburg, Lynchburg, Richmond, and Roanoke. There are five ABC retail stores in Nelson/Albemarle counties for consideration by the cidery.

In this context, the strategy consists of a primary market within 100 miles and a secondary market that extends another 100 miles. The main cities in the secondary market are Chesapeake (VA), Charlotte (VA), Durham (NC), Raleigh (NC), Greensboro (NC), and Washington D.C. as well as the Hampton Roads area of Virginia. Approximately 150 miles from Washington, D.C., Nelson County enjoys a good location close to the nation's capital.

The cidery should try to benefit from good road connections, particularly Interstate-64, Interstsate-81, and Interstate-85 which lead to large urban areas such as Richmond, Charlottesville, and Raleigh (NC). For the sake of this study, the consultant assumes that the cidery is located outside of a town and is accessible with secondary, rural roads.

The cidery's strategy consists of supplying a quality product and service, including event packages, particularly weddings. The cidery should consider being able to accommodate at least 100 people for events such as weddings and other gatherings.

The tasting room at the cidery constitutes the main point of sale for alcohol and non-cider sales; therefore, much effort is focused there. It is anticipated that the cidery will be open 5 days per week: Monday through Saturday from 11:00am to 6:00pm.

Commercial Strategy

The cidery should have a carefully crafted commercial strategy. The tasting room provides the key for sales initially, and as the business continues to expand, the cidery will cover other areas within Virginia and, eventually, other states. Expansion into other areas should be possible because cider and wine lovers enjoy experiencing drinks from different areas. As with other cideries, the actual volumes of cider produced will be relatively small but high-quality.

It is not only important to target the high-dollar markets but to also have a flexible plan that allows moving surplus material into the volume markets. All products of the Cidery may not be high-dollar-market quality.

The cidery should employ a local-based strategy to minimize head-to-head competition with larger wineries, cideries, and national competitors. The approach of avoiding direct competition with larger competitors allows for higher margins on sales. It also seeks market share and income in segments that will attract the least competitive response from these other producers. This greatly reduces the risk that the venture might face predatory pricing techniques, allows the

business to build on brand recognition, and creates an income stream to finance the development of future business ventures.

The greater percentage of the products that the Cidery can sell as higher value differentiated products, the less sensitive the pricing will be.

The cidery should consider their range of product offerings. A range of cider varietals and blends comprised of high-end products suitable for all occasions, medium price point products aimed at medium-income purchasers, and a lower price point product aimed at low-income purchasers would be ideal in capturing the broadest segment of the market.

As is the case with most other wineries and cideries, non-cider goods should be offered for sale. Not only are non-beverage goods expected by visitors, they also provide the cidery with another source of income. The owners should evaluate a range of products for sale in the tasting room.

Distribution Channels

To take advantage of a good location for the introduction of quality cider to consumers, the cidery should consider the following sales distribution channels:

- On-orchard/tasting room sales
- Virginia ABC stores
- Local restaurants, eateries, breweries, and pubs
- Wine festivals/events
- Wholesale through VWDC (Virginia Winery Distribution Company)
- Shipper License-Internet Sales

The cidery should plan to sell a majority of their cider through the tasting room during the life of the project; therefore, the tasting room will be the main sales distribution channel. Wholesale distribution can be done through the Virginia Winery Distribution Company (VWDC). Eventual internet sales should be considered as a way to gain product awareness outside of the local community. ABC stores, local restaurants, and wine festivals should serve to create awareness in the surrounding region.

The higher cost and regulations associated with wholesale distribution mean the cidery should carefully consider their positions, strengths, and weaknesses before expanding into the wholesale market. The benefit of expanding the venture in this way should be greater than the associated cost.

The direct on-site distribution approach will allow the cidery to better understand the consumers' tastes through direct contact with them. Visitors are very likely to buy non-wine goods at the same time, increasing per-visit income.

The cidery and tasting room should be conscious of modern and traditional cidermaking styles. This will attract a greater variety of clients who want to experience a great Virginian cider with a background setting of open countryside and nature.

Restaurants often look for new locally produced, quality beverages to offer to their clientele. According to the National Restaurant Association (www.restaurant.org), in 2010 there were 3,585 eating and drinking places in Virginia and restaurant sales is projected to hit $13.3 billion in 2012.

The various lines of hard cider should be made available at wine festivals. This will increase wine lovers' knowledge of the cidery and lead them to refer the cidery to their friends. In summary, a presence at festivals will increase word-of-mouth awareness. The Cidery should become an active member of www.virginiawine.org, where many festivals are organized.

Pricing Strategy

The initial strategy should be to penetrate the market with prices for ciders that exceed customer expectations at those prices. This approach will make the public want to repeat the experience and recommend the Cidery to other consumers. From the market research on competitor prices, the price chosen for the "Premium" (wine style) cider is $17 per 750ml bottle, and the price for the "Everyman" (beer style) variety is $11 per 750ml bottle. The "Everyman" variety will also be offered for sale in kegs at $19.00 per gallon.

The prices of ciders for several other cideries located in Virginia, as well as nationally distributed examples, were studied for comparison. This analysis may give some indication of market prices, but at the same time, it is difficult to compare because the customers may not necessarily be the same.

Additionally, it is difficult to relate prices with quality. Factors, such as the quality of bottles, may vary from cidery to cidery or even between varieties from the same cidery. The same types of variables apply for caps, corks, and capsules, quality of labels, promotion, etc. At the same time, the division between classes is relatively arbitrary and relies on the information published by competitors on their respective web pages. With that caveat, it is reasonable to assume that the relationship between prices and quality are according to consumers' tastes and are ultimately determined by the customer.

Table 15: Estimated Pricing for the Nelson County Cidery Year 1

Premium Line Retail (Wine-style) 750ml Bottle, Sold Individually	$17.00
Premium Line Wholesale Price (60% of Retail)	$10.20
Everyman Line (Beer-Style) 750ml Bottle, Sold Individually	$11.00
Everyman Line Wholesale Price (60% of Retail)	$6.60
Everyman Line Kegs sold per gallon	$19.00

Promotional Plan

To stand out in the marketplace, local products must create brand recognition and loyalty among consumers. A website, advertising, and tasting room program should be combined in order to tell the cidery's story.

For a beginning cidery, word-of-mouth promotion is key for the success of the tasting room. Therefore, emphasis should be placed on new customers' "first impressions," so that every visitor will tell their friends about the cidery.

Some promotional activities that could be employed include:

- A visitor's book for signatures when they visit for the first time
- Promotional materials sent via USPS and email. The orchard collects mailing and email addresses; this information is used to notify clients of special event or when a new variety is released
- Advertisements in local travel brochures in the area
- An official, easy-to-navigate website that makes online purchase possible
- Radio spots on a monthly basis
- Signs on major roadways in the area
- Attendance at wine shows and festivals
- Hosting a festival each year
- Advertising in local papers
- Rack cards for placement in hotels
- Free tasting certificates for guests at area Bed & Breakfasts

Table 16: Prototypical Budget for Promotional Activities.

Activity	# of events	Costs ($)
Trade Activity		
Competitions and fairs	1	1,750
Annual Tasting of Wines of Virginia	1	250
Article in specialized wine magazine	2	2,000
Sub – total		**4,000**
Consumer Activity		
Media outreach (food & wine and travel magazines, and press trips)	3	4,000
Tastings with associations, festivals, charitable events, clubs (e.g. golf club)	2	1,500
Other Promotions	4	2,000
Sub – total		**7,500**
Other Activities		
Brochures and printed material	1	2,000
Pop up banners and other signage for tastings	5	500
Photography	1	2,000
Website architecture	1	4,000
Sub – total		**8,500**
T O T A L		**20,000**

For any small sized operation, promotion should be focused enough to maximize customer flow and sales. Customer traffic through the tasting room will be a primary avenue for communicating the cidery's story and history. Creating a brand that customers can relate to while presenting a high quality product will often maximize a company's marketing impact.

The Nelson County cidery should consider promoting itself as a boutique cidery with any additional marketing strategies necessary to introduce its products to the customer and attract more visitors to the premises. In light of this strategy, the promotional materials at the cidery may include souvenirs, samples, brochures, and other items.

Promotion is a necessary part of marketing the cidery and its products. It can be expensive; dollars should be carefully spent to get the "biggest bang for the buck." The marketing activities should be implemented with a strong and focused approach to back up the sales plan. It is anticipated that the cidery will spend approximately $20,000 in the first year of this study, and increase their promotional activities by approximately $5,000 per year for the year two and three of the study.

The promotional budget may include items such as:

- Webpage upgrade
- Internet sources; a video on www.youtube.com and The Cidery Facebook page
- Brochures and other collateral material
- Photography; a professional photographer should be hired for a one-day assignment
- Pop up banners and other signage for tastings
- Trade activities:
    - 1) Participation in wine competitions (Virginia State Fair, Wine Lover Classic, Atlantic Seaboard Wine Competition, National Women's Wine Competition, Virginia Governor's Cup Competition, and at least one national competition per year) and wine fairs in the Commonwealth of Virginia
    - 2) Annual Virginian food tastings
- Consumer activities:
    - 1) Press trips for general and travel media and wine press specialists; the objective is to bring the media to the cidery so they are familiar with and can write articles about it
    - 2) Media outreach to food and wine magazines (Flavor Magazine)
    - 3) Tastings with sommeliers and wine clubs; the objective is to forge a relationship with these members of the business
    - 4) Participation in festivals (e.g. the Virginia Wine Festival, the Annual Vintage Virginia Wine Festival, among others)
    - 5) Tastings with associations, charitable events, car expositions and golf clubs; the owners believe this will create customer awareness
    - 6) Advertising campaign in area restaurants and bars
    - 7) Publication in travel magazines (Travel and Leisure)

The Cidery should work with the Virginia Tourism Corporation to identify points-of-interest and tourist activities in common with other offers in the state. This should be beneficial for all the parties involved.

There are two organizations with specific wine tour promotion objectives: www.virginiawinetour.com and www.sovawinetrail.com. In many cases, this type of organization works well. However, the administration and the personnel behind it are the key for the success of the operation. The Cidery should consider joining these two organizations.

Wine tourism programs can prove beneficial to participating cider sellers because of the similarity of cider to wine. Because the sum of the benefits of working together is greater than the outcome of working alone, the wine tour association can be an integral part of the cidery's promotional strategy.

COMPETITION

The cidery will initially sell most of its product through the tasting room and on-site sales, with the intent to eventually expand the ciders to other local points of sale, "on-trade" (restaurants, bars, etc.) and "off-trade" (retail stores, wine shops, etc.).

Consequently, it is important to monitor the activities of other cideries (prices, varieties produced, labels, suppliers, distributors, etc.) to keep up with competition in the marketplace. In addition to the local suppliers, there are regional, national, and international ciders that may be present in the same marketplace, making it a challenge to compete. Of course, quality is the key for success, quality ultimately being defined by the consumer.

Identified Sources of Competition

There is a significant amount of direct competition for hard cider. Cideries are an international business with potential competitors spanning the globe. Establishing a cidery as a local boutique with the specialized culture of Virginia would help distinguish it from the global competition.

The market for cider sales remains a fragmented, multi-national, and information-intensive market. The cider industry globally contains both mega wine companies and small, family cideries. No single cider maker has a majority of the world market. This is different from other food products and beverages, which are often dominated by a few extremely large firms.

In general, competition within the state of Virginia tends to be varietal in nature; they are small, local cideries crafting unique, locally-flavored varieties. National competition naturally tends to be commercial and produce a consistent blended flavor.

The following examples are not intended to be an exhaustive list, but are representative of the types and scales of competition that may be faced by a cidery.

Virginia: Local and State Competition Examples

The Cidery will be a boutique cidery in Virginia making cider with its own character. In order to make a comparison with other local orchards, the following examples have been examined:

Foggy Ridge Cider- Dugspur, VA

(Information from foggyridgecider.com)
Foggy Ridge Cider aims to revive the artisan cidermaking tradition. They harvest ripe apples from three orchards and craft small batches of carefully selected cider blends. Each season is different, and the ciders vary from year to year. The cidermaker is intimately involved in all aspects of the orchard and Cider House from grafting and pruning to picking and blending.

They offer the following varieties of cider, along with two cider/brandy blends.

First Fruit: a cider that blends early-season, American heirloom apples to create a rich fruity cider with lively acidity to drink on its own or with a meal. ***$16 per 750ml bottle***

Serious Cider: a mix of traditional English cider apples like Tremlett's Bitter and Dabinett with tart American favorites like Ashmead's Kernel and Roxbury Russet. This crisp, light, food-friendly cider is a refreshing aperitif paired with cheesy nibbles. ***$18 per 750ml bottle***

Sweet Stayman: a cider that blends the original Stayman apple with heirloom varieties like Grimes Golden and Cox's Orange Pippin to create a lightly sweet cider to sip on its own or with spicy food. ***$16 per 750ml bottle***

Pippin Gold: a unique blend of 100 percent Newtown Pippin hard cider and apple brandy from Laird and Company, the country's oldest distiller. Pippin Gold is delicious as a dessert cider or sweet aperitif. ***$25 per 375ml bottle***

Pippin Black: A combination of hard cider from Newtown Pippin and Arkansas Black apples with Virginia apple brandy. To gild the lily this blend is aged in Hungarian Oak. Butterscotch and caramel notes combine with rich apple flavor, making this apple port ideal with blue cheese and walnuts. ***$25 per 375ml bottle***

Albemarle CiderWorks-North Garden VA

(Information from albemarleciderworks.com)
Albemarle CiderWorks is a family-run cidery and tasting room that produces hard cider from heritage varieties of apples that can thrive in Albemarle County, Virginia. They grow a dozen or so of those heritage cultivars that are still extant as well as other old-fashioned varieties that are blended to create full-bodied ciders to rival those produced in the colonial era.

In April 2010, Albemarle CiderWorks won the Beverage Artisan category in Edible Blue Ridge Magazine's first-ever "Local Hero Awards." This means that Edible Blue Ridge readers, voting online, chose Albemarle CiderWorks as the best local beverage artisan. “We are honored to receive this award in our very first year of production”.

Albemarle CiderWorks was founded in 2008 by the Shelton family as an additional product line to the thriving Vintage Virginia Apples orchard and nursery. They began by planting interesting apple varieties and now have more than 200 varieties. They pull from these varieties to create their distinctive cider labels. As of 2009, the Albemarle facility includes a new tasting room. The tasting room is open Wednesday through Sunday from 11:00 a.m. to 5:00 p.m. Tastings are available for patrons 21 years of age or older at $5.00 per person.

Albemarle offers four unique hard cider blends:

Jupiter's Legacy: This fruity blend of classic American cider apples—Harrison, Yates, Hyslop, and Virginia Crab—is augmented with several dessert varieties. This dry cider is fresh, clean, bright, and lively on the tongue. It pairs elegantly with traditional American cuisine— pork and roasted poultry as well as cheeses, pates, and sausages. ***$16 per 750 ml bottle***

Old Virginia Winesap: This is the second varietal from Albemarle CiderWorks and makes a notable contribution to the revival of traditional American ciders. It is spicy, floral, and fruity, slightly tart with a lingering finish. It pairs well with white meats like fish and poultry and a wide variety of other foods. ***$16 per 750 ml bottle***

Royal Pippin: This is a fruity cider crafted entirely from Albemarle Pippins. It is a dry cider that has a champagne-like quality. It is an excellent accompaniment to many foods but is also a delightfully refreshing beverage on its own. ***$16 per 750 ml bottle***

Ragged Mountain: A cider blend of classic apple varieties—Albemarle Pippin, Winesap, Black Twig, Grimes Golden and Stayman—historically grown on and around the Ragged Mountains. This is a semi-dry cider crafted to please a wide range of palates. It is good with spicy foods and pairs well with sharp cheeses and fruits. ***$16 per 750 ml bottle***

Castle Hill Cider-Charlottesville, VA

(Information from castlehillcider.com) Castle Hill Cider is a Virginia cidery and venue for Central Virginia weddings and events. Located in Keswick’s horse country just miles from Charlottesville, Virginia on the historic Castle Hill Estate, Castle Hill Cider’s many indoor and outdoor sites offer endless possibilities from the intimate to the incredible. Pastoral fields, meadows, and the Blue Ridge Mountains beyond provide stunning backdrops. The barn shares the crest of a verdant knoll with Linden tree grove. Artfully arranged below are apple orchards, a two-acre lake, and custom-designed pergolas framing beautifully terraced lawns. The cidery includes a tasting room as well as event facilities.

They offer the following varieties:

Terrestrial*:** It is a nose of fresh apples with a hint of peach that follows through on the palate. Bright acidity gives this a clean, refreshing finish. A blending of Winesap and Albemarle Pippin apples makes this cider extremely crisp and refreshing. Terrestrial pairs nicely with aromatic dishes or makes a cleansing counterpoint to rich cheeses. ***$17 per 750ml bottle

Levity*:** This flagship sparkling Virginian cider of Castle Hill is aged and fermented in clay amphorae called kvevri. Allowed to rest on full lees for four months, this cider expresses layers of complexity. I has full body with good minerality and hints of earthiness. This cider is 100 percent Albemarle Pippin. ***$23 per 750ml bottle

Celestial*:** This cider has firm tannin structure that exhibit notes of earthiness, spice and citrus. This comes from a blend of Ellis Bitter and Albemarle Pippin apples. Celestial's finish is enhanced by a touch of Winesap apples that offer a bright, clean finish. Pairing this cider with dishes incorporating rosemary or lavender will pick up on its aromatic notes. ***$17 per 750ml bottle

Gravity*:** This still Virginia cider is amber in color with notes of melon, peach, and light citrus. Gravity's hint of sweetness on the finish is balanced with good astringency. It is a blend of Grimes Golden, Pink Lady, Ellis Bitter, Dabinette, Yerlington Mill, and English bittersweet apples. ***$17per 750ml bottle

Potter's Craft Cider-Charlottesville, VA

A new and upcoming producer, Potter's Craft Cider is a revival of authentic American farmhouse cider. It is made using only high-quality traditional cider apples, including Virginia Winesap and Albemarle Pippin. The apples are grown locally in family-run orchards from the foothills of the Blue Ridge Mountains.

Tim Edmond and Dan Potter are the owners and cider makers. With a shared passion for the art and science of cider making, Tim and Dan are excited to explore the countless flavor and aroma profiles that can be achieved using the apple varieties that are native to the area. Their cider is described as crisp, tart, and refreshing with a pronounced fruit aroma and an exceptionally dry finish. It pairs well with food and also makes delicious mixed drinks. It is currently being served in bottles and on draft in Charlottesville, Virginia and surrounding areas.

No specific pricing or product information for Potter's Craft Cider is currently available.

Most of the direct competition that would be experienced by a new cidery would come from local artisan cideries such as those listed above. Many of them diversify their product by offering a destination, much as a winery would, where events can be scheduled and tastings can be held. This allows the cidery to create its own market as well as diversify its risk by offering multiple actual products (not just cider, but also event planning, trip destination, festivals, etc.)

National Competition Examples

There were 6,223 wineries in the U.S. in November 2009**,** according to the *Wine Business Monthly* database. Wineries are located in all 50 states, though California still leads the way with almost half of the wineries in the nation. Wineries have a wide range of strategies, wines, and market positions. There are no available statistics on the exact number of hard cider producers.

Woodchuck Hard Cider
(Vermont Hard Cider Company, formerly Green Mountain Beverage)

Vermont Hard Cider Company, LLC, located in Middlebury, Vermont, is the leading hard cider producer in the U.S., which includes the nation's number one cider—Woodchuck Hard Cider. Having won 13 IMPACT Hot Brand Awards, Vermont Hard Cider Company is recognized for its superior cider brands. Vermont Hard Cider Company handcrafts and manages all levels of quality control in a state-of-the-art cidery by employing a team of cider makers with over 30 years of combined experience directly in cider making and a team devoted exclusively to producing, marketing, and selling hard cider. The cider company's main cider lines include:

Amber: The Amber is sweet (but not too sweet) with a nice golden color and crisp finish.
Granny Smith: This cider is made from only Granny Smith apples; this is tarter and quite a bit tangier than the other varieties.
802 Dark & Dry: The 802 Dark & Dry is made with caramelized sugar to tone down the sweetness a bit and give it its bronze color.
Crisp: Crisp is cool, refreshing, and crafted to be delicate in body and is perfected with a delicious, crisp apple taste.
They also offer other categories, such as **Limited Release**, **Farmhouse Select**, and **Private Reserves**.

Prices range from $8.50-9.00 / 6-pack of 12 oz. bottles.

Crispin Cider

Crispin Hard Ciders, naturally fermented in the U.S., use fresh pressed apple juice, not from apple juice concentrate but from a premium blend of U.S. West Coast apples with no added malt, apple wine, or spirit alcohol. Crispin's unique ciders are smoothed with pure apple juice or from natural sugar sources, like organic honey or organic maple syrup, and contain no added colorants, sorbate, or benzoate preservatives. Crispin incorporates four main lines:

Classic "Blue Line": Available in three varieties (Original, Light, Brut), it is designed to be enjoyed over ice. "Blue Line" ciders are clean on the palate, with a crisp, not sweet, taste profile. They incorporate a strong apple bouquet, fresh apple-y mouth feel, and clean lingering aftertaste.

Artisanal Reserves: Available in four varieties (Honey Crisp, The Saint, Lansdowne, and Cho-tokkyu), Artisanal Reserves are cloudy hard apple ciders. The ciders offer an unusual taste complexity and authentic cidery aromas and use racked unfiltered apple wine; it is fermented from fresh pressed apple juice and smoothed with novel organic natural sugars, such as honey or maple syrup.

Limited Release: This is a variety of very small runs and limited occasional distribution items.

Imports: There is only one variety in this category (Browns Lane). A British style cider, 100 percent pressed, fermented, and produced in England. Browns Lane is a dry, classic English cider.

Prices range from $5.99 to 9.99 / 4-pack of 12 oz. bottles.

Hornsby

Hornsby's Hard Cider uses select apples and ferments them naturally, using only the highest quality yeasts in order to craft their Amber Draft and Crisp Apple Hard Cider.

The unique process and fine ingredients generate a crisp, flavorful, and refreshing cider. Hornsby's cider is available in two varieties:

Crisp Apple: It is a golden and pleasingly sweet cider with a little tanginess, fragrant apple aroma, and a fresh, bright apple flavor.

Amber Draft: This traditional dark and dry cider has a medium-light body and a smooth apple finish.

Prices range from $7.99-8.99 / 6-pack of 12 oz. bottles.

Strongbow

Strongbow is a premium imported cider from the UK made with an English recipe. Manufactured in England by H P Bulmer Limited, Strongbow is the UK's number one cider, accounting for more than half of the cider sold in Britain. Strongbow was launched in the UK in 1962, and is imported into the U.S. by Bulmer's America.

The cider is made from a blend of bittersweet cider and culinary apples making it a well-rounded, balanced cider with a good mix of fresh apples and cidery flavors.

Prices range from $9.99-12.50 / 6-pack of 12 oz. bottles.

ACE Cider Company

ACE ciders have been made for 15 years in the Sebastopol area of Sonoma County in California alongside famous, world-renowned wine makers. ACE hard ciders are described as very pure, clean, and refreshing because they use only the best eating apples for their juice and focus on using the best ingredients they can buy. ACE Cider Company produces six different beverages:

Apple Cider, Apple Honey Cider, Berry, Pumpkin, Joker, and **Perry.**

Little information is given about the flavor profiles of the varieties.

Prices range from $8.99-11.33 / 6-pack of 12 oz. bottles.

Angry Orchard (Boston Beer Company-Sam Adams)

After years of experimenting with types of apples from all over the map and different cider-making techniques learned along the way, Angry Orchard came up with a recipe. According to their website, they knew they "had something different and special and decided to share these great recipes with cider drinkers across the country." Angry Orchard is available in three varieties:

Crisp Apple: This cider offers sweet apple notes upfront with a subtle dryness at the finish for a balanced cider taste. The addition of Fuji apples adds a layer of complexity and brings out a fresh apple aroma and slightly sweet, ripe apple flavor. Alcohol by volume is 5 percent and the color is amber. Apple types used: Amere de Berthecourt, Beden, Medaille d'or, Michelin, Binet Rouge, Brairtot Fuji, Golden Delicious, Red Delicious, Joana Gold, Elstar, Granny Smith, Gala, and Braeburn.

Traditional Dry: This cider is made in the style of English draft ciders. It is bittersweet and slightly spicy with a bright apple aroma. It is a leaner cider with a dry finish and without any juice added to impart extra sweetness. The alcohol by volume is 5.5 percent and the color is amber. Apple types used: Amere de Berthecourt, Beden, Medaille d'or, Michelin, Binet Rouge, Brairtot Fuji, Golden Delicious, Red Delicious, Joana Gold, Elstar, Granny Smith, Gala, and Braeburn.

Apple Ginger: This cider, with the addition of Nigerian ginger flavor, adds spiciness and warmth. The fresh ginger and apple flavors blend together for a sweet, yet slightly tart taste with a distinct ginger aroma. The result is a smooth, slightly sweet cider with a subtle, dry, yet complex, warming finish from the ginger. The alcohol by volume is 5 percent and the color is amber. Apple types used: Amere de Berthecourt, Beden, Medaille d'or, Michelin, Binet Rouge, Brairtot Fuji, Golden Delicious, Red Delicious, Joana Gold, Elstar, Granny Smith, Gala, and Braeburn.

The price is approximately $8.99 / 6-pack of 12 oz. bottles.

Magners

Magners is an imported Irish Cider, and offers two varieties in the U.S.:

Original and **Pear** (the latter is not actually an apple cider; pear is made from 100 percent pears)

Very little information is offered on the Magners website regarding the flavor profile of these two products.

Prices range from $10.38-10.99 / 6-pack of 12 oz. bottles.

Marketing Analysis

Hard cider is by far the fastest growing alternative to beer, outpacing wine coolers and other "malternatives", or beer alternatives. A trend driving this interest in alternatives to traditional alcoholic beverages are consumers who are seeking a more refreshing alternative to beer. Additionally, the market has experienced growth due to the female demographic, who do not prefer beer but are significantly contributing to the popularity of hard ciders.

Cider occupies a unique position in the alcoholic market. Made with a process similar to wine, cider can be produced to have complex flavor profiles and aged like a wine; however, it can also be produced in a quick fermenting process like beer, and therefore, it enjoys popularity in both forms.

Large companies currently producing hard cider, such as Vermont Hard Cider Company, Boston Beer Company, and MillerCoors, can provide more commercialized ciders to the restaurant and wine shop points of sale at relatively low prices and with big promotional campaigns. However, consumers interested in higher quality ciders, with unique regional flavors and consequently lower volumes of production, provide a niche market for a Cidery.

From the analysis of other cider makers, both commercial and local, it can be concluded that high-quality inputs are of vital importance—even down to the quality and type of glass in the tasting room and the presentations via the webpage.

The importance of branding cannot be overstated; it is often this initial impression that will lead to a consumer's first purchase.

Hard cider is relatively new to the beer and wine markets, and the owners of any cider venture should work to capture the interest of local and regional alcohol drinkers. The examples presented here show how the various established cideries work on positioning. As a new brand, the cidery would face the difficult challenge of finding an image.

QUALITY CONTROL PROCEDURES

Responsibility for identifying apples and utilizing production techniques that will assure and improve the quality of the cider products needs to be assigned. Producing quality cider is difficult and subject to federal, state and county regulations. Specifics are discussed in the Regulations and Risks portion of the study.

Standard practices should include: normal laboratory equipment calibration, detailed sampling and testing of the cider at various steps in the process, and procedures for thoroughly cleaning and sterilizing equipment prior to and after use. Some written procedures will need to be formalized as more human resources join in production.

It may also be advantageous to solicit technical advice from experts, especially during the start-up process and initial production runs.

RISK CONSIDERATIONS

The cider venture faces many potential risks as it develops. Though it may be difficult to quantify a specific dollar value of these risks, it is useful to present them and permit the venture and its owners to determine their own level of risk tolerance.

General Business Risks

Capital Risks
The project will require capital outlay. Insufficient access to capital funds is a major reason for initial businesses to fail. Unexpected cost overruns could endanger the venture as well. The production of large quantities of hard cider requires significant capital investment, especially in equipment.

Cash Flow Risks
Whether the venture is projected to be profitable in the first year of the expansion or not, there are periods during the year that a venture may experience negative cash flow. Business liquidity should be closely monitored. A small change in price or payment period could quickly turn a profit into a loss or exasperate this cash flow risk. Sales may not be realized in the same time period as production, which means large amounts of revenue can be tied up in inventory.

Management Experience Risks
Businesses “fly” or “die” based on the caliber of management. It is imperative that management has experience in the industry. The selection and oversight of management is critical for the successful operation of the venture. Since hard cider production is a relatively new industry, there are fewer sources of information regarding the production of quality hard cider. The cidery may be subject to a “trial and error” approach during the startup and subsequent years of operation.

Legal liabilities and risks
The venture will face legal liabilities and potential risks due to the nature of the product, visitor risk, transport of the product, worker safety, and environmental risks. Because the cidery serves

tastings of alcoholic products, great care should be exercised to minimize risks from serving products to underage persons and to reduce risks from traffic accidents after leaving the cidery. These issues need be addressed. Risk should be reduced with insurance and written policies where possible.

Regulatory Risks
There are a large number of regulatory risks and hurdles that the venture must address as it moves forward. There is a potential that these factors could substantially constrict the ability of the venture to operate profitably. Additionally, these regulations are in constant flux. Regulations that may not affect the operation today could have a dramatic impact on it in the future. For example:

- The environmental regulations for the production of cider may change.
- The legislative framework for cider sales, particularly interstate sales is in flux. Among others, these include:
    - The US Supreme Court *Granholm vs. Heald* ruling has changed interstate shipping rules within the past few years;
    - FAA 27 USC 205(d) regulates the intestate sale of consignment wines; and
    - IRS 1968 code, 26 U.S.C. Chapter 51(IRC) regulates bonding and registration of wineries.
- The labor and other farm operation regulations may change in the near future. For example: health care and insurance reform was enacted in 2010.

See below for detailed Registration and Regulation Risks.

Operational Risks
Due to the newness of the venture, there could be several operational issues that do not proceed along the lines of the assumptions of this study.

If weather conditions for the next few years are within normal averages, this will allow the on farm orchard, or orchards that are selected as suppliers to continue to provide quality apple inputs, and thus improve the cider product and the overall quality of the cidery's offerings. Because quality ciders are dependent on the quality of inputs, the interaction of weather and terrain are very important. If the weather does not meet expectations, the cidery may not be able to produce the higher quality product.

Market Development Risks
The venture may have limited experience in the marketing of cider. The cidery will need to establish itself as a vendor in a competitive industry with previously established players.

There is no guarantee that the venture will succeed in encountering sufficient buyers to purchase its products. It is assumed that consumers actually have an interest in a cidery and that these consumers are prepared to pay for a local cidery experience. This may not be a true assumption.

Price Risks
There is no doubt that the consumer is becoming far more interested in how and where food is produced. However, the Virginia alcohol industry is still an evolving producer. The market is still developing a customer base for higher value products. For this type of product it is not unusual for prices to go through wide swings and periods of significant price depression. Likewise, local and national prices of ciders may maintain or improve their price position.

Food Contamination Risks
Although ciders have been produced for centuries, food contamination has been an area of great concern in the agricultural industry recently. Bacterial contamination could occur, causing illness, product recalls, and damage to the brand.

Care should also be taken if the cidery contemplates supplying product to retail outlets for sale to the public. Careless bottling and storage techniques by the retailer could cause the risks previously mentioned.

Production Risks
If the cidery had production problems due to adverse weather conditions, then the venture could be highly dependent on other apple producers providing it with apples. The cidery could be at risk from the farm or from apple producers not supplying enough apples of sufficient quantity for the cidery to purchase. Likewise, the apples would always have to be delivered in a timely manner at a consistent and known quality for the venture to succeed.

Inventory Risks
While most businesses like to keep inventory, in these early stages of the cidery, it represents a risk in terms of cash flow shortages. If sales are not as expected, then inventory may increase, and if negative cash flow occurs, then the cidery may not be able to comply with short term obligations.

REGISTRATION AND REGULATION RISKS

General Disclaimer
It is the responsibility of the owner of a business to familiarize themselves with the federal, state, county, and local laws governing their business. Failure to do so may result in penalties, fines, and cessation of business. The following sections are a general overview of the registration and regulatory aspects of a business, as well as some associated risks, and are meant to highlight possible considerations that could affect a business.

Code of Virginia Excerpts
§ 4.1-207.1. Restricted wholesale wine licenses.
The Board may grant a wholesale wine license to a nonprofit, nonstock corporation created in accordance with subdivision B 5 of § 3.2-102, which shall authorize the licensee to provide wholesale wine distribution services to winery and farm winery licensees, provided that no more than 3,000 cases of wine produced by a winery or farm winery licensee shall be distributed by the corporation in any one year.

§ 4.1-209.1. Direct shipment of wine and beer; shipper's license.
A case of wine shall mean any combination of packages containing not more than nine liters of wine.

§ 4.1-213. Manufacture and sale of cider.
G. For the purposes of this section:

"Chaptalization" means a method of increasing the alcohol in a wine by adding sugar to the must before or during fermentation.

"Cider" means any beverage, carbonated or otherwise, obtained by the fermentation of the natural sugar content of apples (i) containing not more than 10 percent of alcohol by volume without chaptalization or (ii) containing not more than 7 percent of alcohol by volume regardless of chaptalization.

§ 4.1-219. Limitation on Class A and Class B farm wineries.
For Class A farm winery licensees, at least 51 percent of the fresh fruits or agricultural products used by the owner or licensee to manufacture the wine shall be grown or produced on such farm and no more than 25 percent of the fruits, fruit juices, or other agricultural products shall be grown or produced outside the Commonwealth.
For Class B farm winery licensees, 75 percent of the fresh fruits or agricultural products used by the owner or licensee to manufacture the wine shall be grown or produced in the Commonwealth and no more than 25 percent of the fruits, fruit juices, or other agricultural products shall be grown or produced outside the Commonwealth. No Class B farm winery license shall be issued to any person who has not operated under an existing Virginia farm winery license for at least seven years.

Other Definitions

The Code of Virginia defines a "*farm-based winery*" (which includes the production of cider) as "an establishment (i) located on a farm in the Commonwealth with a producing orchard or similar growing area and with facilities for fermenting and bottling wine on the premises where the owner or licensee manufactures wine that contains not more than 18 percent alcohol by volume or (ii) located in the Commonwealth with a producing orchard or similar growing area or agreements for purchasing apples or other fruits from agricultural growers within the Commonwealth and with facilities for fermenting and bottling wine on the premises where the owner or licensee manufactures wine that contains not more than 18 percent alcohol by volume."

A "case" is defined as containing no more than 9 liters.

Business Registration

The registration needs of a venture can vary depending on federal, state, and local laws. Some registration processes are free of charge, but certain commodities and types of business are subject to various registration fees and permits.

Businesses can form under the owner's name, or they can choose to do business under a fictitious name, which requires the filing of a Doing Business As Certificate. All business operating in the State of Virginia under a fictitious name are required to register with the Virginia State Corporation Commission.

It may be necessary to file a Doing Business As Certificate (DBA). Sometimes known as an "assumed name" certificate, a DBA is a document that provides owner identification when a business is operating under any name other than their legal name.

Ventures organized as corporations may also need a DBA if they plan to use a different name than the one provided on their corporation paperwork (legal name).

For state by state requirements, please see: www.sba.gov

Labor Regulations

It is important to choose the right method for recruiting and selection of the labor that best adapts to a business venture. Have clear and defined objectives, duties, and responsibilities for each position.

Employment eligibility verification
Workers must have valid work permit if not U.S. citizens. If they are migrant and seasonal agricultural workers, each farm labor contractor, agricultural employer, and agricultural association, which is subject to the Migrant and Seasonal Agricultural Worker Protection Act (MSPA) and who employs any migrant or seasonal agricultural worker(s) shall post and keep posted in a conspicuous place at the place of employment a poster prepared by the Department of Labor which explains the rights and protections for workers required under the MSPA. (source: DOL).

I-9 and E-Verify
The Immigration Reform and Control Act (IRCA) of 1986 mandates that employers cannot knowingly hire illegal workers. As part of the hiring process, employers must record a prospective employee's identity and employment eligibility on Form I-9, "Employment Eligibility Verification". The form collects information such as name, date of birth, and supporting citizenship documentation.

E-Verify is an Internet-based system that verifies the information gathered on the I-9 form and compares it to information on file with the U.S. Department of Homeland Security and Social Security Administration in order to confirm its validity. For the most part, participation in E-Verify is voluntary; however, some government contracts as well as certain states have made the use of E-Verify mandatory.

The government agency in charge of immigration is the U.S. Citizenship and Immigration Service (USCIS).More information can be found at www.uscis.gov.

Safety issues
The Occupational Safety and Health Administration, or OSHA, is responsible for enforcing compliance with U.S. laws regarding safety and workplace conditions. Compliance is expected to be voluntary, and inspections will be conducted as a consequence for extended non-compliance.

If there are laboratories in the firm, then a manual with clear procedures for each quality test must be in place and in compliance with FDA and USDA regulations.

Safety gloves, hats, industrial aprons, boots, and safety glasses should be available for workers in the processing areas. In this context, having accident insurance for workers is an important matter as well.

Clearly marked exit signs, easy access in and out of buildings, fire extinguishers, evaluation, medical supplies, and procedures should be considered important. Other issues include hazard prevention and control, safety and health recordkeeping, and injury/illness records. An action plan should be developed in case of eventualities.

More details are available at www.osha.gov.

Zoning

Any facility will have to pass through the basic zoning steps required by the county. Additionally, the cidery must remain current with any future zoning requirements as the business expands and potentially moves into other sales arenas. The key to securing local approvals is a combination of sound site planning, presentation, and persistence. A properly zoned site makes it easier to provide continued protection against incompatible uses.

If the cidery should need to expand, it will need to address a number of issues including, but not limited to, the following:

a. Visual impact, including the need for buffering, screening, and landscaping of the facility;
b. Flora and fauna and effects on the local eco-system (it is not anticipated that any clearing will be required);
c. The impact of noise from the plant (limited);
d. Traffic study addressing the intersection design, turnaround areas and car parking;
e. Management of additional wastewater;
f. Additional requirements for water and power to the site; and
g. Soil suitability in regards to building foundation, erosion control, and absorption.

Local Requirements

The following table presents the standard requirement for site development of a typical facility. Local requirements and the exact type of facility to be constructed will determine the exact site requirements.

Table 17: Standard Requirements for Site Development:

1	Grade the site to a 2 to 4 percent slope
2	Slope the site toward a collection pond
3	Add minimal paving under the facility
4	Build beams around the perimeter to control run-off and run-on, if required
5	Plan areas for raw material storage, if applicable
6	Set up equipment in locations convenient to the process
7	Construct retainer walls and footings
8	Develop a screen/landscaping around the site
9	Install appropriate utilities depending on the method and process (2-inch minimum water main, storage and tool building, office and lab, and maintenance shed)
10	Obtain proper permits (this is mandatory) —Local: zoning, building, and land use —State: water discharge, access, air, and health department

The venture would have to receive zoning and use approval from the county. In order to obtain this approval, a plan must be submitted to the county planning commission. The commission reviews the plan. They forward the proposal for the site and the activity to the County Board of Supervisors for approval. Most counties have an opportunity for public comments on the proposal built into the planning commission approval process. Typically this county process takes around three months.

For more information on zoning, see www.sba.gov or contact your city, municipality, or county zoning official.

Health Department Considerations

Businesses must consider state Department of Health regulations. These regulations, designed to protect the health of environment as well as the employees, must be considered if the business

handles food of any kind or if it involves sewage or drainage. Typically, there are specific licenses or permits required, depending on the nature of the venture.

For specific information, contact your local health department.

Employer responsibilities under the Occupational Safety and Health Act (OSHA)

Employers have the responsibility to provide a safe workplace. Employers must provide their employees with a workplace that does not have serious hazards and follows all OSHA safety and health standards. Employers must find and correct safety and health problems. OSHA further requires that employers have to try to eliminate or reduce hazards first by making changes in working conditions rather than just relying on masks, gloves, ear plugs, or other types of personal protective equipment (PPE). Switching to safer chemicals, enclosing processes to trap harmful fumes, or using ventilation systems to clean the air are examples of effective ways to get rid of or minimize risks.

More information is available at: www.osha.gov

Licensing

Licensing and permits are an essential part of any venture involving alcohol beverages. In Virginia, licensing is controlled by the Virginia Department of Alcoholic Beverage Control (VDABC). The cidery will need to acquire a Farm Winery License in order produce hard cider and utilize the Virginia Winery Distribution Company for its wholesale sales. This licensing allows for an unlimited amount of production, and requires that 51% of the apple input products come from an orchard that is leased or owned by the farm, with no more than 25% originating from outside the state. Distribution through the VWDC is capped at sales of 3,000 cases. Wholesale sales beyond the 3,000 case limit will require the cidery to work with a distributor who has a wholesalers license. Additionally, the Farm Winery is eligible to apply for a Wine Shippers License, which allows for phone and internet sales within Virginia.

On the Federal level, licensing and regulation is overseen by the Alcohol and Tobacco Tax and Trade Bureau (TTB). The cidery will need to acquire a basic permit to begin operation as a bonded winery.

For information regarding local permits and licensing, consult a local Chamber of Commerce or Small Business Development Center. For information on Federal permits, contact TTB's National Revenue Center toll-free at 1-877-882-3277, directly at (513) 684-3334, or by email at ttbquestions@ttb.gov.

Taxes

Federal, state, and local level authorities all have tax requirements that affect the formation or expansion of a business.

Taxpayer ID and Employer Identification Numbers

The Federal (Employer) Identification Number, also known as a Tax Identification Number or EIN, is a number issued by the IRS for the purposes of identifying businesses. If you are forming

a business and you have no employees, or if you are any business type other than a corporation, your Social Security number generally functions as your EIN. Nearly all business structures that employ individuals, as well as other business entities, use EINs. You can apply for an EIN with form **SS-4: Application for Employer Identification Number** or over the phone by contacting the IRS at: 1-800-829-1040 or 866-816-2065, or online.

It is necessary to do recordkeeping for tax purposes (bank deposits, sales receipts, and other elements of support) and to have the record available for examination by IRS.

Some of the most complex issues facing small business owners today are the various taxes and tax structures. The business may be subject to or responsible for collecting or withholding:

- Taxes on the business itself
- Sales and Use taxes
- Ad Valorem Taxes (Taxes on Property)
- Employment and Income Taxes.

Federal
For specific information regarding federal tax requirements, contact the Internal Revenue Service to obtain a copy of the "Small Business Resource Guide." This guide contains information on your federal tax obligations as well as various publications for starting a business. www.irs.gov

Required Federal employment taxes
Federal Income Tax Withholding
Social Security and Medicare Taxes (FICA)
Federal Unemployment Tax (FUTA).

Forms and Employees
It is required that all employers have their employees fill out the following forms: Form I-9 and Form W-4. More information explaining the Federal tax responsibilities of the employers can be found in the IRS's Publication 15, "Circular E, Employer's Tax Guide".
Form I-9: Employment Eligibility Verification. This document is available from the Immigration and Naturalization Service by calling 800-357-2099 or online at www.bcis.gov.
Form W-4: Employee's Withholding Allowance Certificate. This form is available from the IRS. Call FORMS/PUBLICATIONS at 800-829-3676, or INFORMATION at 800-829-1040. You can also visit www.irs.gov to download the form.

Certain agricultural employers are required to fill out specialized forms depending on their type of work or they may be exempt from certain laws. For more information see www.irs.gov.

State and Local
In addition to business taxes required by the federal government, you will have to pay some state and local taxes. Each state and locality has its own tax laws. The links below provide access to key resources that will help you learn about your state tax obligations. Having knowledge of your state tax requirement can help you avoid problems and save your business money. The most common types of tax requirements for small business include:

- Tax Permit: In most states, business owners are required to register their business with a state tax agency and apply for certain tax permits. For example, in order to collect sales tax from customers, many states require businesses to apply for a state sales tax permit.
- Income Taxes: Nearly every state levies a business or corporate income tax. Your tax requirement depends on the legal structure of your business. For example, if your business is a Limited Liability Company (LLC), the LLC gets taxed separately from the owners, while sole proprietors report their personal and business income taxes using the same form. Consult the General Tax Information link under your state's website for specific requirements.
- Employment Taxes: In addition to federal employment taxes, business owners with employees are also responsible for paying certain taxes required by the state. All states require payment of state workers' compensation insurance and unemployment insurance taxes. Also, some states require a business to pay for temporary disability insurance.

For more information on taxes in VA see www.tax.virginia.gov

Sales Tax and Resellers
In the case of a business purchasing items that are intended for resale, many states that collect sales taxes allow a business to purchase resale items tax free. The requirements and guidelines vary from state to state; check with your locality for specific information.

Table 18: Federal Excise Taxes for Cider Products

Wine	Wine Gallon	750ml bottle
14% Alcohol or Less	$1.07[1]	$0.21
Over 14 to 21%	$1.57[1]	$0.31
Over 21 to 24%	$3.15[1]	$0.62
Naturally Sparkling	$3.40	$0.67
Artificially Carbonated	$3.30[1]	$0.65
Hard Cider	$0.226[1]	$0.04
([1] $0.90 credit, or for hard cider $0.056, may be available for the first 100,000 gallons removed by a small winery producing not more than 150,000 w.g. per year. Decreasing credit rates for a winery producing up to 250,000 w.g. per year.)		
Distilled Spirits	Proof Gallon *	750ml Bottle
All	$13.50 less any credit for wine and flavor content.	$2.14 (at 80 proof)
* A proof gallon is a gallon of liquid that is 100 proof, or 50% alcohol. The tax is adjusted, depending on the percentage of alcohol of the product.		

Source: http://ttb.gov/tax_audit/atftaxes.shtml

In addition to income, business, and sales taxes, hard cider, as an alcoholic beverage, will be subject to state and federal taxes. These are represented in the model by the Federal Excise Tax and the State Liter Tax. In addition to these taxes, label approval must be obtained from the Virginia Department of Alcoholic Beverage Control. This cost is approximately $30.00 per label.

Brand Registration and Trademark

According to the U.S. Patent and Trademark Office (USPTO)[31] a trademark includes any word, name, symbol, or device, or any combination, used, or intended to be used, in commerce to identify and distinguish the goods of one manufacturer or seller from goods manufactured or sold by others, and to indicate the source of the goods. In short, a trademark is a brand name.

The name and logo design of the venture needs to be trademarked and registered at the national level. Failure to get appropriate intellectual property protection invites others to pirate the ventures work. The practical purpose of a trademark is to prevent consumers from becoming confused about who provided the goods or services they purchased.

The International Trademark Class Numbers (ITCN) defines the product category, for example wine and spirits as 033. The Trademark Electronic Search System of the USPTO (http://www.uspto.gov) allows you to search for trademarks.

It is important to have an internet email address registered as soon as the name has been defined. The same applies to other social media such as Facebook.

Legal counsel should be sought for any trademark issues for overlapping business areas.

HACCP

Hazard Analysis and Critical Control Points (HACCP) is a preventative plan that identifies any physical, biological, or chemical hazards in the processing of foods or pharmaceuticals. The underlying intent of a HACCP plan is prevention rather than an inspection process. It identifies the points at which a hazard exists, and proposes and implements specific plans to eliminate or reduce the identified risks.

In 1995, the FDA issued regulations requiring HACCP plans for producers of fish and seafood products; as of 1998, USDA's Food Safety and Inspection Service (FSIS) has required HACCP plans for meat and poultry processing plants; and in 2001 regulations were issued that made HACCP plans mandatory for juice processing and packaging plants.

It is likely that more and more industries will be required to have HACCP plans on record for their respective processes in the future. More recently, the Food Safety Modernization Act of 2010 (FSMA) will require the use of preventative food safety programs in several other industries. Any cidery will have to address these areas and achieve compliance with the FDA regulations regarding a HACCP plan.

[31] USPTO Headquarters - Main Campus located at Madison Buildings (East & West)
600 Dulany Street, Alexandria, Virginia 22314. Tel: 1-800-786-9199. Email: rademarkAssistanceCenter@uspto.gov

INDUSTRY RESEARCH

In preparing the results of this study, including the basic assumptions underlying the financial model, the consultants considered different classes and types of hard cider production in order to produce a prototypical cidery as the focus of this study.

Ultimately, the assumptions made regarding the licensing, taxation, capacity, apple input, product mix, sales goals and volumes, and overall size and structure were influenced by analysis of the industry as a whole. It is the intent of the consultants that the study ultimately be applicable to as broad a class of cider producers as possible, while still retaining a realistic outlook.

While the prototypical cidery considered for this study does not necessarily exist, a structure was chosen that would best reflect the current state of the cider production industry in Virginia. Following are several factors, components, and variations that were assessed for inclusion in the study.

Licensing and Taxation

Any potential cidery owner should set aside the time to familiarize themselves with the local, state, and federal regulation and taxation laws governing cider. Because there is variation in the classification of hard cider depending on alcohol content, "chaptalization," and other factors, it can be difficult at times to ascertain the applicability of a certain law or regulation. It is recommended that a potential cidery in Virginia work closely with their local ABC compliance agent. A list of Virginia ABC compliance agents can be found in the Appendix. Detailed information regarding licensing and taxes can be found in the Registration and Regulations Risks section of this study.

Ingredient Sourcing

Quality ciders benefit from specific types of apples as sources for producing the must (juice). These varieties, while showing signs of resurgence in planting due to the cider market, are not widely available. Hard cider can be produced from any apple; however, in order to compete with other cideries on flavor and quality, a steady source of heirloom and cider variety apples should be established.

Beverage Type Variation

Cider is unique in its position as a product. It can either be produced as a low alcohol beverage similar to beer or as a higher alcohol beverage with complex flavors similar to wine. As such, a decision must be made in regards to the end product that the cidery will focus on. This decision will affect everything from sales and marketing, to the actual production and fermentation processes used, as well as the equipment that is necessary.

While a cidery will typically focus on one product type, the prototypical cidery presented in this study encompasses both in order to provide application to a broad range of potential producers. The cidery may, in actuality, be much more focused in its product mix, packaging, and marketing.

Beer is typically a market where volume is more important than price; a lower price for a product with lower alcohol content leads to higher consumption in volume. Wine is typically a market where flavor is more important than price; a higher price for a product with higher alcohol content and higher perceived flavor profile leads to less consumption in volume. The artisan production method used to produce wines leads to a higher perceived value and thus, higher sales margins for wine producers.

In the case of ciders produced as wines, the market seems to be too new to support high-end pricing. This seems to be chiefly attributable to a lack of consumer understanding of the cider product. Wines have a culture associated with them that depends on understanding the difference in flavor profiles between a high-end wine and the grocery store variety. The cider market enjoys this same culture in other countries, but comparatively little knowledge exists in the U.S. market.

A potential cider maker must choose their target market carefully. Each category (wine-style or beer-style) carries with it a different culture, a different viewpoint, different market strategies, price points, and especially different production methods and sales expectations.

In addition, because the market for cider is small and somewhat fragmented in the U.S., any new player is a smaller part of an already small market. The potential cidery must choose which path to take or attempt to straddle the divide until a clearer industry path begins to dominate.

Established Market
Hard cider will have a difficult time competing with beer and wine coolers along with other "malternatives" (beer alternatives) to establish a large market share. In countries where hard cider consumption is a substantial part of the consumer market, there exists a long established and unbroken history of cider consumption, as well as cultural factors that promote its continued consumption. The U.S. does not have these market motivation factors.

Producer Structures
Besides the actual producer structure chosen as the prototypical cidery for this study, there exist several other broad categories:

- **Personal brewers** produce cider for personal consumption. These are typically low-volume, home-based producers who make just enough product for themselves and to share among friends and peers.

- **Microbreweries** usually supply a local community in the form of a brewpub or restaurant where most sales take place on premises, with some limited distribution as allowed by law. Microbreweries have largely benefited from the craft brewing movement because consumers seek unique and regional alternatives to commercially available beer and wines. While microbreweries tend to concentrate on beer products, their position as a source of unique beverages has led them to include products such as hard ciders and other alternatives to beer.

- **Local cideries** typically utilize their own produce, grown at an orchard or other fruit farm, to produce hard ciders and apple wines that are then sold on the premises of the farm or orchard. In some cases, sales are made to local bars and taverns, and some

limited wholesale distribution occurs. This size of cidery is typically constrained by production limitations issued by the state of residence.

- **Large commercial cideries** have experienced significant recent growth in the U.S. A commercial cidery typically begins as a farm-based cidery that utilizes local or regional fruit products. After successfully increasing their regional distribution, they either begin commercial-style production to meet demand, or their popularity is noticed by one of the larger American brewing companies (e.g., Boston Beer Company, MillerCoors) and they are purchased. Once acquired, most, if not all, switch to the use of large-scale production techniques. Because of the increased volume and need for efficiency, this transition typically involves the substitution of apple juice and concentrate blends for fresh pressed and the use of commercially produced yeasts in order to gain a consistent taste profile.

- Some large-scale **national and international producers** of hard cider are started by established companies in an attempt to capitalize on the popularity of hard cider products. These producers utilize industry standard production techniques and regularly ship and sell thousands of gallons of cider a year. Because of a lack of flavor profile depth that many people are seeking as an alternative to beer products, this industry lacks consolidation. This seems to be a characteristic of the individualism found in small scale movements like craft brewing where the appeal is based on variety and uniqueness of flavor. A large-scale company must balance the mass market appeal and consistent taste of bland hard cider varieties against consumer demand for unique tasting beverages.

CONSULTANCY METHODS: PROTOTYPICAL MODEL

One of the primary tasks of this consultancy was to create an economic model. This was to be a "prototypical" small cidery for the region of Nelson County, Virginia. The Consultant was requested to create a description of a cidery that would encompass as many of the multiple cider industry components and present operations as possible.

No specific cidery in existence or anticipated to be in existence was used for the creation of this prototypical model. It is a blending of many practices and sales models that are in operation in the present smaller scale hard cider industry. In fact, any specific cidery may choose to specialize in one or two sales or production methods rather than the more diverse ones presented in this study.

While most cideries focus on one type of product that most closely resembles either beer or wine, the prototypical cidery constructed for this study produces one product line of each type, in order to provide a more comprehensive industry overview in regards to product. The cidery is intended to utilize the sale of kegs as well as bottles in order to further capture wholesale customers.

The cidery also has items for events and non-cider sales as part of the model. This is to represent that cideries may use their facilities as an event and meeting center in addition to the sales of the hard cider products.

The study examines a three year window of financial operations of the business around the time that the business approaches and passes the break-even sales point. For that reason, one of

assumption of the model is that the prototypical cidery is assumed to be carrying debt from losses the cidery has experienced in years of operation previous to those presented in the model.

Startup was not examined, as this period in any venture is too dependent on circumstances that are unique to each new venture and its owners.

The prototypical model chosen represents a small farm cidery during its initial years of operations, run mostly by family members, and predominantly utilizing Virginia-grown apples. Specific cideries in the current industry have taken widely divergent time frames to reach this point. In keeping with most family run ventures, key positions may be filled by family members, reducing overall labor costs during the early years of the venture. This model is focuses on the period when management is beginning to draw a salary as paid labor. It also focuses on the time that hired labor is added as growth requires more staffing.

Selected from the industry research and from the discussions performed with those in the industry in Nelson County, the specific model assumptions are presented below in more detail. Several key assumptions are varied later in the scenario section of this feasibility study.

MODEL FINANCIAL PROJECTIONS AND METHODS

This report has developed business scenario models for the next 3 years of operations for the cidery located in Nelson County. The data was modeled in Excel spreadsheets. Several of the tables utilized for this model are presented in Appendices at the end of the report; these are presented monthly for the first year of operations and quarterly thereafter. Annual operations statements are provided as well.

This model attempts to be as realistic as possible while still permitting ease in interpretation. Though attempts have been made to make the tables as transparent as possible several key project descriptions are presented here.

Project timing
The timing assumptions of the model assume that the cidery has been in operations for several years and year one of the model represents the earnings breakeven point for the cidery. The cidery's operations, other than those directly involved in the cidery, are not included in this analysis.

Cash Received

Sales Cider sales, souvenirs and event revenue in one month would be collected by the end of the following month. The total lag estimated, on average, for payment is 10 days at 8.5% interest in the model. The distribution of sales responds primarily to cider sales since it is the core of the business. Also, non-cider sales show a similar behavior.

Tasting Fee of $3.00 per person for a 2 oz. tasting of each product line and the visitor does not keep the glass. It is assumed that there will be fifteen tastings per day in year one and twenty tastings per day in years 2 and 3.

Non-Cider Sales consist of merchandise and events at the cidery. The cidery is estimated to be open 5 days a week. It will be closed 1 week a year for holidays. It is estimated that the new tasting room will have:

* 6 private events (birthdays, weddings, etc.) in year one and increasing to ten events in year three. There will be a $1,600 per event rental cost in year one, the cost will increase each subsequent year. Guests are responsible to provide their own equipment. Events are an area the cidery can expand into eventually (equipment rental: i.e. tables, chairs, punch bowls, etc) Number of guests to the cidery per private event is 100.

Merchandise items are assumed to be 100% markup.
Non-cider sales prices increase by 2% each year and the number of visitors by 15 %.
It is estimated that the new tasting room will have:

* 5 sales of souvenirs per day for an average value of $20.00 a day, the facility will be open 5 days per week.

General Information

Visit Times The tasting room will typically be open five days a week during. However, the cidery is relatively new and it takes time for public awareness to increase.

It is assumed the event facility can accommodate approximately 100 people. In the summer months there will be plenty of space to accommodate more than 100 people in tents. The cidery will be open 260 days a year.

Processing Capacity The plant can produce approximately 5,000 cases, though currently it operates up to 3,500.

On-Going The cidery has 300 bottles of premium, 300 bottles of everyman and 100 gallons of Everyman kegs in inventory at the beginning of the on-going section. This inventory is being treated as if it was purchased on credit and the costs are attributed to January of FY 1.

Loss From Fermentation It is assumed that the product loss during the fermentation period is equal to 10%.

Sales, Pricing and Production Information

Percent of Sales Cider Sales In addition to the facts presented above, the following considerations have been put forward to elaborate on the three-year sales projections:

Table 19: Product Sales by Line.

Distribution of sales (as %) according to line of ciders

		Year 1	Year 2	Year 3
Product Total Premium (wine-like)	Sales to Restaurants	0	0	0
	Sales direct at Events	15%	15%	15%
	Sales direct at Tasting Room	55%	55%	55%
	Sales indirect via Wholesalers	30%	30%	30%
		100%	100%	100%

		Year 1	Year 2	Year 3
Product Total Everyman (beer-like)	Sales to Restaurants	0%	0%	0%
	Sales direct at Events	15%	15%	15%
	Sales direct at Tasting Room	55%	55%	55%
	Sales indirect via Wholesalers (Bottles)	20%	20%	20%
	Sales indirect via Wholesalers (Kegs)	10%	10%	10%
		100%	100%	100%

Sales Increase The cidery's sales will consist of a total of 150 total cases of product for the months of November and December under continuing operations, 2,000 total cases of product in year one, 2,500 in year two, and 3,500 cases in year three.

40% of total sales will be the Premium product line (750ml bottles of 12/case):
60% will be the Everyman product line (750 ml bottles of 12/case):

Pricing

Table 20: Cider Pricing Breakdown#

Item	FY 1	FY 2	FY 3
Premium Retail	$17.00	$18.00	$18.00
Premium Whole Sale	$10.20	$10.80	$10.80
Everyman Retail	$11.00	$12.00	$12.25
Everyman Whole Sale	$6.60	$7.20	$7.35
Everyman Keg Price Per Gallon	$19.00	$19.00	$19.00

Production Will run from August – January/Feb each year. Sales will be year round.

- Producing in 500 gallon batches.

Table 21: Cider Percentage Used for Promotional Purposes

Activity	% withheld
Shrink & Returns (breakage)	2.0%
Given to staff/investors/owners	1.0%
Distributed to media/fairs/tastings	2.0%
Total volume not sold	5%

Inventory

Inventory The inventory in cider at ongoing is assumed to be sufficient to cover the first two months of sales. During the ongoing period the cidery has 300 bottles of Premium and Everyman respectively and 100 gallons of Everyman in kegs. This inventory was purchased on credit and will be repaid in January of year one.

The conversion factors used in the model for inventory are:

Table 22: Prices Used for Inventory

Total cost per 750 ml bot ($/bot)	1.94
Total cost per gal in tank ($/gal)	3.95

The methodology used in all calculations is FIFO, i.e. the oldest merchandise in stock is the first to be sold. The inventory is evaluated by using the cost of each item left in stock.

Expenses

Apple Cost The model assumes an input price for apples based on industry research and information gathered from local producers and the client. The wholesale price utilized for the financial model serves as a purchase price for the cidery's apples, but also serves as a cost of growing and harvesting apples from the on-site orchard should that method be chosen.

Apple Cost $11.67 a bushel average.

- Heirloom ($15/bu)
- Midrange Apples ($12/bu)
- Juicing Apples ($8/bu)

Table 23: Breakdown of Bushel Price (1/3 each of type)

Apple Types Broken Down by Percentage of Use	
Average Cost Per Bushel: $ 11.67	**% Used in Production**
Heirloom Apples	33%
Midrange Apples	33%
Juicing Apples	33%
	100%

Juice $3.89 per gal in apples.

- A bushel yields 3 gallons of cider. A gallon will fill 5 - 750 ml bottles.

Yeast The yeast cost is $30 per 500 gallons.

Laboratory Materials Lab materials are estimated at $.20 per bottle and 750 ml bottles cost $1.15.

Labeling and Packaging The cost of labels per bottle is $.30 and the cap cost is $.20 per bottle. We are assuming the boxes that bottles come in are being reused to ship goods.

Keg Cleaning Cost there will be a monthly expense of $100 associated with the cleaning of kegs in years one and two. This cost will increase to $150 per month in year three.

Equipment In year one the cidery will need to buy $187,175 in equipment. This amount will be 50% financed. The cidery will invest $54,075 during the third year in cider tanks. Cash flows will be used to purchase the equipment in year three. The total investment in equipment is estimated at $241,250.

Depreciation For machinery and equipment it is assumed a useful life of 10 years and a 5% salvage value.

Rent The cidery pays a monthly rent for the production and retail space of $2,500. This rent is comparable to a $400,000, 20 year mortgage at 5% interest. The model does not account for

building depreciation. If the cidery were to purchase a building, depreciation would be included as an additional cost.

Promotional Costs The marketing plan has a strong promotion campaign dedicated to trade and consumer activities to support the sale of cider. Approximately $20,000 in year one, $25,000 in year two and $30,000 in year three is included in the model.

Table 24: Breakdown of Promotional Costs

Activity	# of events	Costs ($)
Trade Activity		
Competitions and fairs	1	1,750
Annual Tasting of Wines of Virginia	1	250
Article in specialized wine magazine	2	2,000
Sub – total		**4,000**
Consumer Activity		
Media outreach (food & wine and travel magazines, and press trips)	3	4,000
Tastings with associations, festivals, charitable events and clubs (e.g. golf club)	2	1,500
Other Promotions	4	2,000
Sub – total		**7,500**
Other Activities		
Brochures and collateral material	1	2,000
Pop up banners and other signage for tastings	5	500
Photography	1	2,000
Website architecture	1	4,000
Sub – total		**8,500**
T O T A L		**20,000**

Cost of Other Non-Cider Sales cost is 50% of non-cider sales (based on 100% markup).

Shippers License

- Wine Shipper's License $95.00
- Beer Shipper's License $95.00
- Wine and Beer Shipper's License $95.00

A non-refundable application fee of $65.00 is required to be submitted with the application for a license.

Insurance The business carries a product liability umbrella policy. This fee is included in fixed expenses and is $170 per month.

Repair & Maintenance Based on equipment manufacturer estimates and other feasibility studies, this cost is based on moderately heavy use. This figure includes the replacement of equipment such as glasses and chairs. This amount is estimated at $300 per month.

Tools, Dies & Fixtures This cost is estimated at $50 per month in years one and two and $100 per month in year three.

Pest Control is estimated at $20 per month.

Electricity Utilities vary per month based on production. The average monthly utilities cost is $300.

Gasoline Gas costs vary per month. In year one there is an average monthly gasoline cost of $140. In years two and three the average monthly cost increases to $150.

Office Supplies & Telephone These are based on moderate monthly usage and periodic member mailings. It is assumed that the tasting room manager and the general manager will utilize cellular telephones at a cost of $50 a month. Office supplies are estimated to be $75 a month.

Bad Debt It is anticipated that less than 3% of sales will result in bad debts.

Miscellaneous Expenses are added to include small items not otherwise listed in the model. Unforeseen expenses are assumed to be 4% percent of sales.

Personnel

Wages and benefits No fee for staff searches has been included. The staff will be paid on the last day of the month. Staff fringe and overhead is directly calculated as 30%.

General Manager The General Manager will be responsible for overseeing the day to day operations of the cidery, and is considered to be a family member-owner. This position is part time in year one and full time in years two and three. This position is assigned a salary of $20,000 in year one, $30,000 in year two and $37,500 in year three.

Cidermaker The cidermaker works on a daily basis crushing apples and overseeing the fermentation of the juice and is responsible for the quality of the hard cider product. For the model of the project this position is part time in year one and full time in years two and three. This position is assigned a salary of $20,000 in year one, $30,000 in year two and $32,500 in year three.

Assistant Cidermakers For the model of the project this position is both part time and seasonal and is assigned an hourly wage of $12.50 per hour in year one, $12.70 in year two and $13.00 in year three.

Tasting Room & Events Manager For the model of the project this position will begin in year two and is part time and is assigned an hourly wage of $12.00 per hour in year two and $12.25 in year three. This person will also be in charge of cleaning up after events.

Tasting Room Associates For the model of the project this position is part time and seasonal and is assigned an hourly wage of $10.50 per hour in year one, $10.70 in year two and $11.00 in year three. During the peak sales month towards the end of the year additional associates will be hired part time. This will account for the seasonal workers.

Delivery Driver For the model of the project this position is part time and is assigned an hourly wage of $12 per hour in year one, $12.20 in year two and $12.50 in year three.

Professional Fees

Legal Fees The cidery does not envisage any further legal fees. A small amount, $50, is set aside for minimal consultations and is included in the model. This fee is combined with audit and accounting fees.

Audit Fee The monthly accounting fee includes a pro rata allocation for a yearly audit at $3,000 annually.

Owner Time is not directly valued in the model. It is assumed that they will be compensated out of the earnings of the cidery.

Financing

Working Capital Loan This loan will consist of 100% financing of $60,000 in purchase costs attributed to start-up. Term and rate are assumed to be 15 years at 7% interest rate. This loan was taken out two years prior to fiscal year One of the study.

Equipment Purchase Loan Will consist of 50% financing of $187,175 in equipment which is equal to $93,588. The other 50% will come from owner equity. Term and rate are assumed to be 30 years at 6% interest rate. This loan was taken out two years prior to FY 1 of the study.

Equity Initial equity of $95,146 was needed to purchase the equipment. It is assumed that this was provided at or before start-up. This equity has been included in the model. No additional member equity will be required.

Taxes

Personal Property Tax rate for Nelson County is $2.95 per $100 assessed value. Half of this is paid in June and the other half in December.

Tool and Machinery Tax rate for Nelson County is $1.25 per $100 assessed value.

Business License Taxes $30 annual flat rate.

Income Taxes Due to variations in tax handling strategies, these taxes are not dealt with in the financial model.

Real Estate Tax $.60 per $100. This is not applicable to the Nelson County project because a shadow rent payment is assumed.

Federal Excise Taxes Federal tax is $.266 per gallon. There is a small producer credit of $.056 per gallon. This equates to a payment of $0.17 per gallon of cider that yields a tax rate of $0.034 per bottle.

State Cider Tax is $0.40 per liter which makes the tax on a bottle $0.30.

Other Considerations

This report has developed business scenario models for the first three years of operations for the cidery. The data was modeled in Excel spreadsheets. Several of the Tables utilized for this model are presented in the Appendices at the end of the report. These are presented monthly for the first year of operations and quarterly thereafter in the appendices. Annual operations statements are provided as well.

FEASIBILITY MODEL RESULTS

The model of the financial results is based on production capacity estimates, given best estimates of expenditures, sales prices and product mix, as well as operating expenses for the Cidery. Pro forma cash flow statements, operating statements, balance sheets, and statements of cash flow are presented and discussed.

The model of operations as presented demonstrates that the project **can be feasible**. As anticipated, the volume of the apples processed is an important value for economic success; however, the results are quite sensitive to the assumptions of the amount of cider sold by the cidery, labor, and the apple input cost.

All model results are from the cidery only and do not include the farming operations, which can be a critical part of the process of a cider brand. For the purposes of this study, the cidery is assumed to be purchasing all apple inputs.

Income

The cidery is expected to have substantial sales from the first year of operations in the project. According to the model, annual sales value for year one will be approximately $296,000.

The cidery will sell approximately 23,000 bottles of cider from all classes in that year alone. The cider sales will represent just over 91% of the nearly $25,000 of average monthly sales for that year. As seen in figures 11 and 12, the Premium cider line is the largest income generator for Nelson County. The Premium line is a higher quality cider and thus commands a higher selling price than the Everyman line. Everyman sales consist of bottle and keg sales. Bottles of Everyman are sold both to retail and wholesale customers. The kegs are sold exclusively to wholesale customers and a minimal amount are used for tastings in the tasting room.

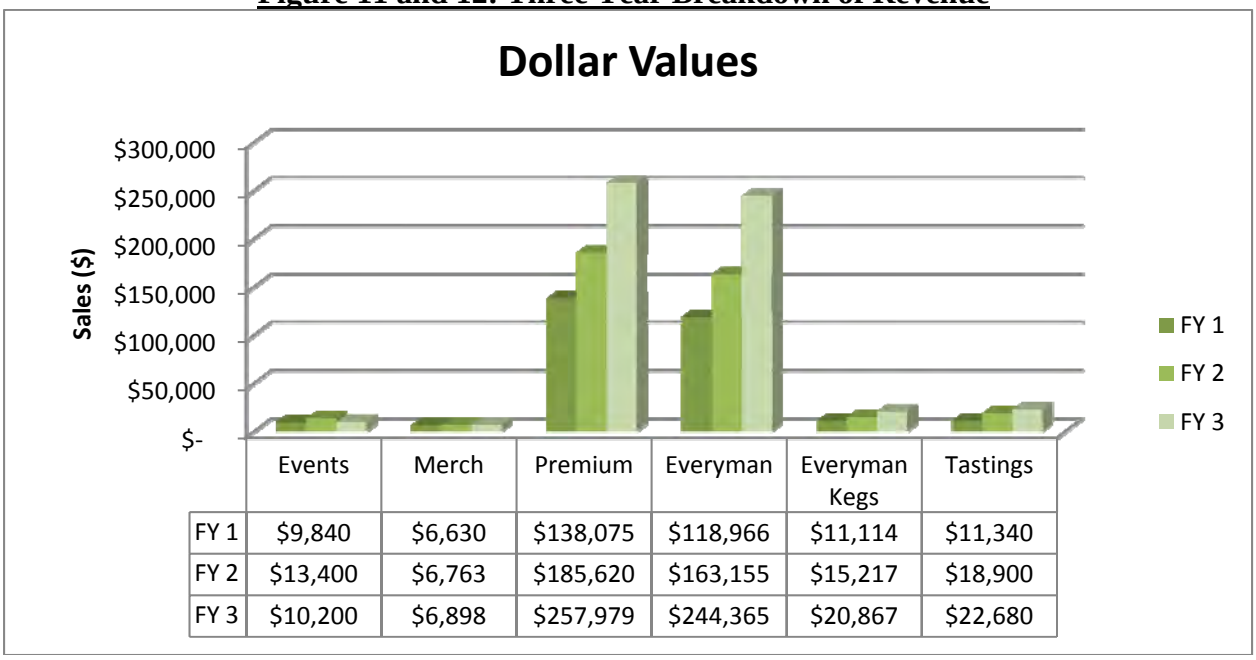
Annual cider sales values for year three will be close to $570,000, which corresponds to 41,000 bottles sold. This is an increase in cider sales of more than $274,000 over a 3-year period, or a nearly 93% growth. Most of this projected growth is due to an increase in cider volume sold.

During year one of the project non-cider sales (merchandise and events) account for approximately $16,000 and by year three it increases to $24,000.

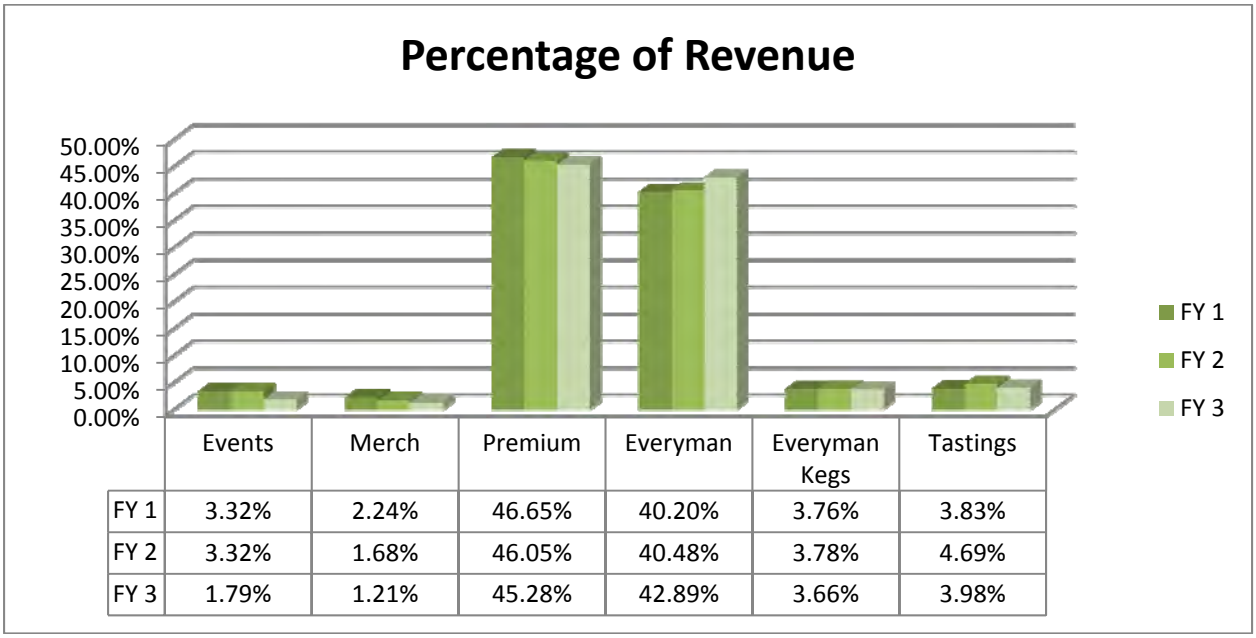
There will be an increase in the number and price of events as the cidery becomes a known destination. However, the income growth in these non-cider sales is not as rapid as the growth in cider sales falling from 5.6% to 3% of total cidery revenue.

Tastings account for 4% of revenue throughout the model. Despite this being a relatively low income generator, tastings are important for the cidery. By offering tastings the cidery will be able to draw in consumers and also generate word of mouth advertising. Non-cider merchandise sales are also closely tied to tastings, as people come to taste the cider they may also be tempted to pick up another item from the tasting room.

Figure 11 and 12: Three Year Breakdown of Revenue



	Events	Merch	Premium	Everyman	Everyman Kegs	Tastings
FY 1	$9,840	$6,630	$138,075	$118,966	$11,114	$11,340
FY 2	$13,400	$6,763	$185,620	$163,155	$15,217	$18,900
FY 3	$10,200	$6,898	$257,979	$244,365	$20,867	$22,680

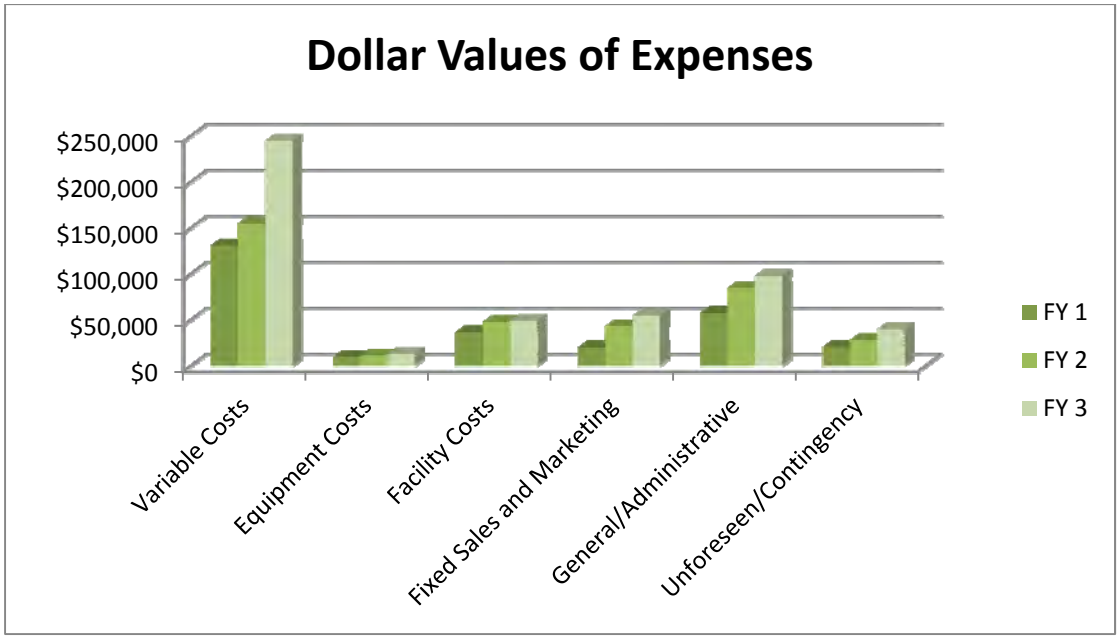


	Events	Merch	Premium	Everyman	Everyman Kegs	Tastings
FY 1	3.32%	2.24%	46.65%	40.20%	3.76%	3.83%
FY 2	3.32%	1.68%	46.05%	40.48%	3.78%	4.69%
FY 3	1.79%	1.21%	45.28%	42.89%	3.66%	3.98%

Expenses

Expenses are presented for the variable and fixed costs of the cidery. Variable costs are those that change with production and are directly associated with sales. Fixed costs are the overhead and facility rental costs that are required to have the venture exist and function.

Figure 13: Three Year Breakdown of Expenses



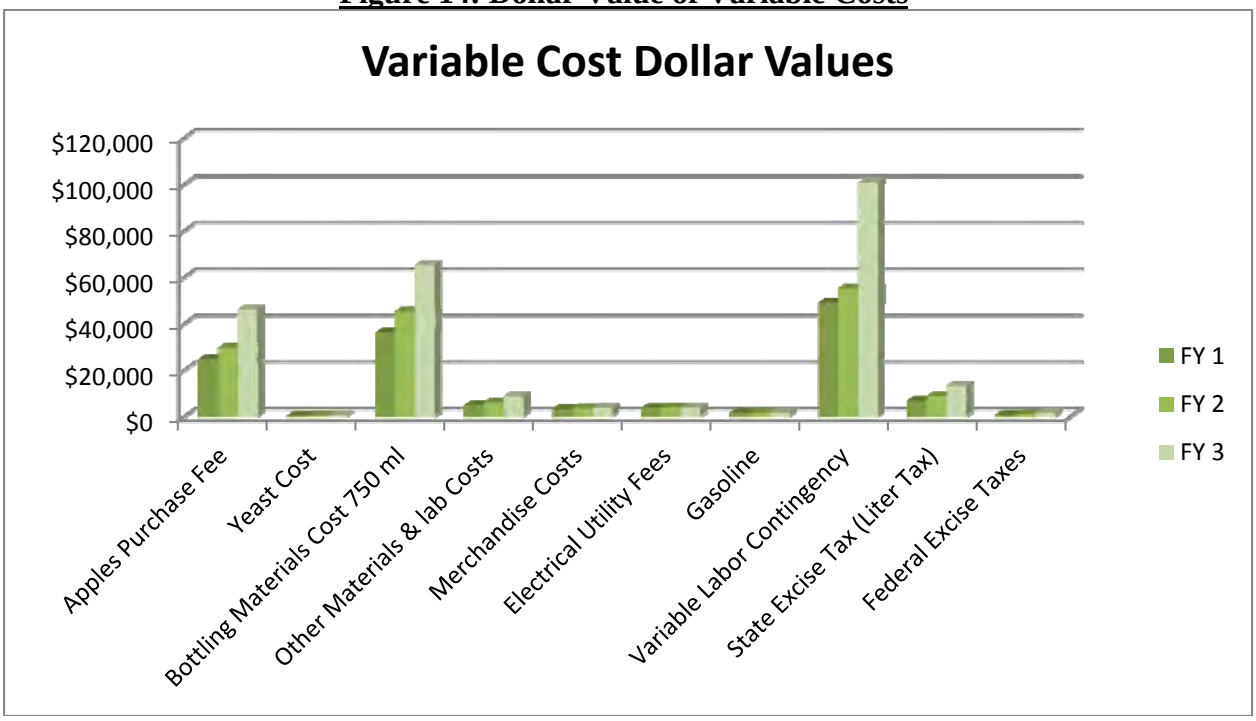
Variable Expenses

Variable costs account for approximately 44% of total sales costs throughout the model. These costs include the cider bottling costs, laboratory (quality) control costs, merchandise, and the cost of the variable hourly staff in the tasting room and cidery as well as delivery drivers.

Within these expenses, the most important are the cost of variable labor, followed by the cost of bottling materials and apple purchase fees. The cost of labor and bottling materials alone account for almost (28%) of revenue in year one.

After all expenses are paid, there remains a gross margin of approximately 55% to cover the fixed costs and profits to the owners in the first year of the model. As the sales increase, this percentage grows to just over 57% by the third year of the model.

Figure 14: Dollar Value of Variable Costs



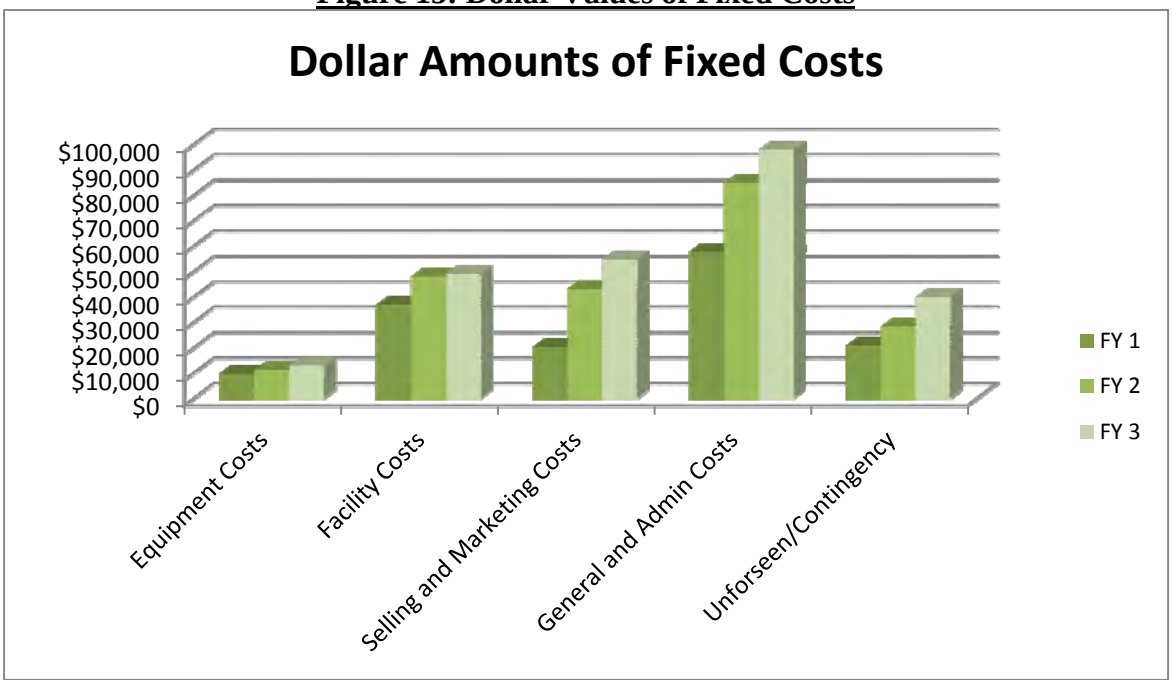
Fixed Expenses

Fixed expenses make up approximately 50% of sales costs in the first fiscal year of the project. They are just over $145,000 a year in real terms. The three most important factors for fixed costs are the administrative and general costs, selling and marketing costs, and facility costs. These items together, account for almost 40% of costs in year one. Figure 15 shows the dollar values of these expense categories.

Contingency fees of five percent of sales have been added to the model to cover unforeseen expenses that are not otherwise included in the model. These expenses account for nearly $12,000 in the first year's operations. A bad debt reserve of three percent is also included in the model to cover this cost as well as the general inflation rate.

The dollar amount for fixed costs grows by more than $100,000 during the three years of operation. Due to the increase in sales the weight of fixed costs decrease over the life of the project from 50% to 30% of total costs. More details for fixed expenses are shown in the Appendix.

Figure 15: Dollar Values of Fixed Costs



Inventory

The cidery carries an inventory of approximately $1,500 at the beginning of the project and it grows to $1,600 at the end of the third year. The beginning inventory originates from an assumption that the cidery has 300 bottles of Premium, 300 bottles of Everyman and 100 keg gallons of Everyman. No inventory segmentation according to the type of customers is provided in this study for reasons of simplicity in the model. In the three subsequent years the inventory amount varies but remains under 2,000 bottles total. More details on inventory are available in the Appendix.

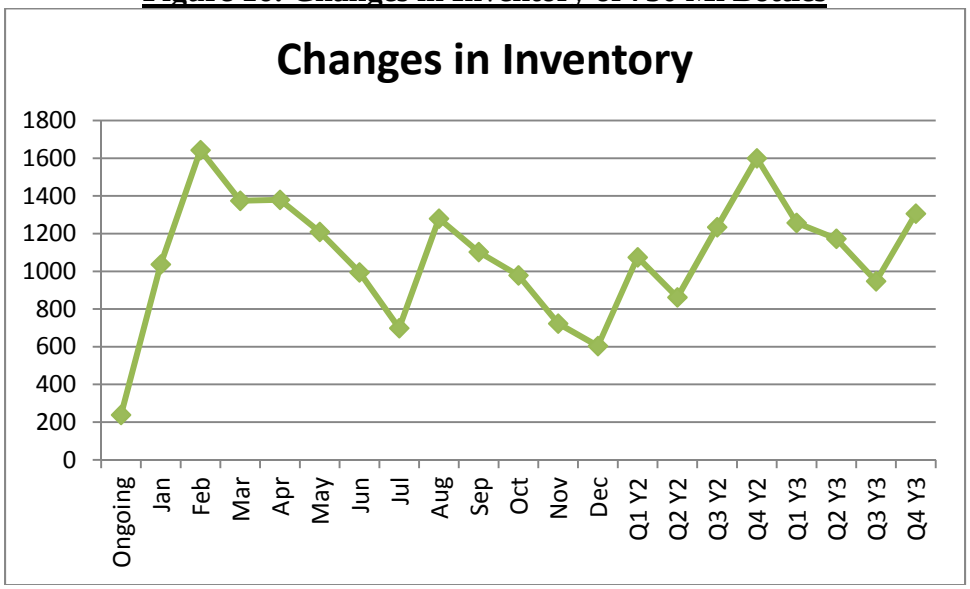
The results of the calculations are summarized as followed and can also be found in detail in the Appendix.

Year One of the project
In January of year one 117 bottles (or 23 gallons) of cider are bottled. By the end of year 1 it is estimated that inventory will be at 600 bottles.

Year two of the project
In the first quarter of year two 287 bottles (or 56 gallons) of cider are bottled. By the end of year two it is estimated that inventory will be at 292 bottles.

Year three of the project
During the first quarter of year three 141 bottles (or 28 gallons) of cider are bottled. By the end of year three it is estimated that inventory will be at 258 bottles.

Figure 16: Changes in Inventory of 750 Ml Bottles



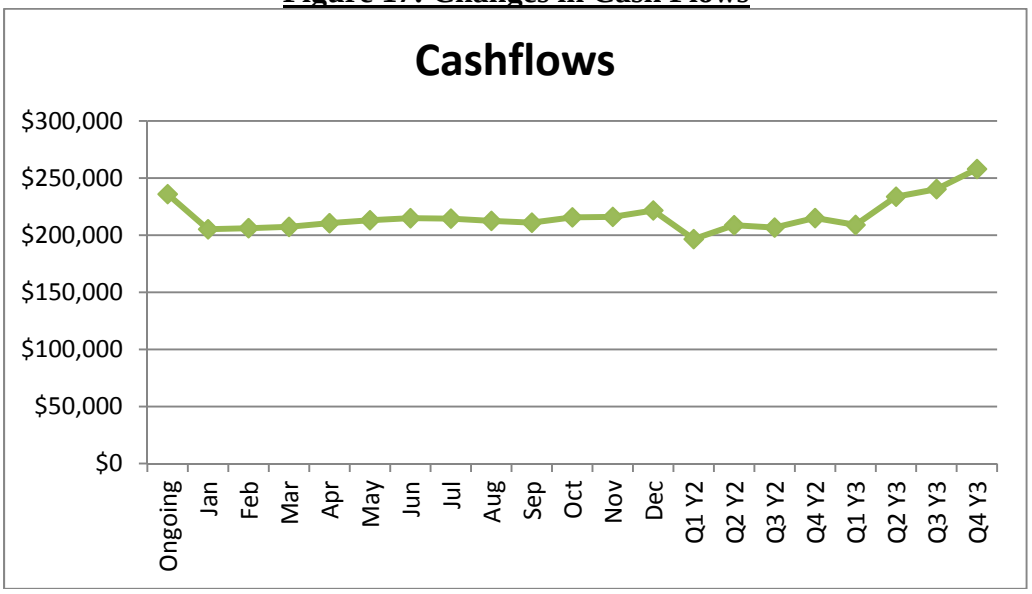
Cash Flow

The importance of cash on hand is a critical factor for project success. The cidery will need a cash infusion of $93,588 to fund its purchases of an additional $187,175 in equipment.

Cash flows remain between approximately $200,000 and $250,000 over the three year time span. By the end of year three cash flows appear to break the $250,000 upper limit.

The cidery purchases a majority of its apples during the first quarter of the year. This creates high costs for the cidery and reduces the increase in cash flow in these months. In figure 17 this trend is visible, cash flows are at their lowest point during the first three months of the year. More details on cash flows are available in the Appendix.

Figure 17: Changes in Cash Flows



Pro forma Operating Statements

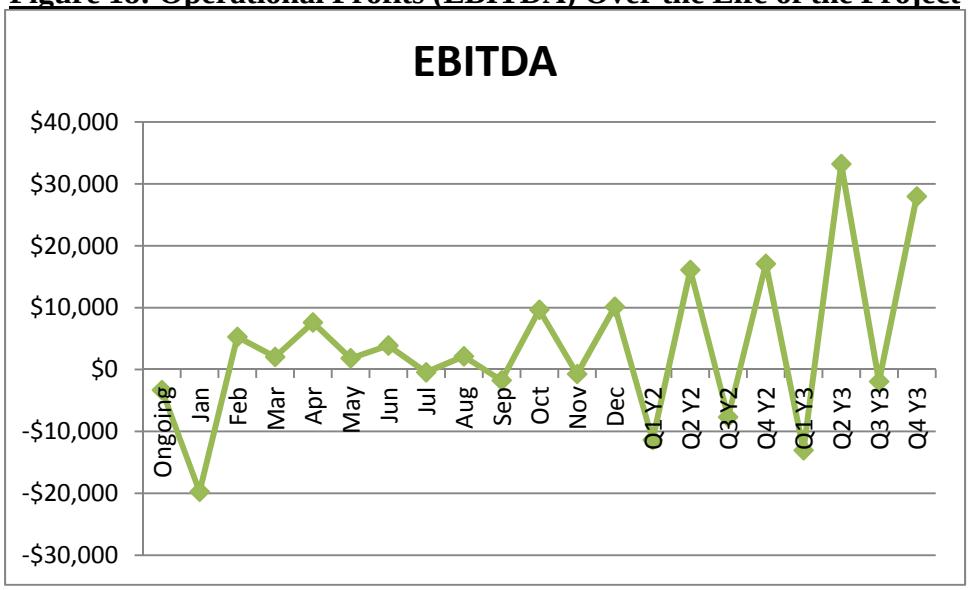
The *Pro Formas* presented in the Appendix demonstrate that the venture makes an operational profit (EBITDA) during all three years of the project; EBITDA is defined as earnings before interest, taxes, depreciation and amortization. It is reasonable that during the first years of the project cider sales will be lower and the overall learning curve of the business will require extra effort and incur more cost. In years 2 and 3 of the study, more cider will be sold and there will be operational efficiencies that will allow for greater operational profits.

Figure 18 shows that operational profits/losses in January of year one falls to approximately ($20,000). This can be attributed to the fact that the on-going inventory was purchased on credit and is being paid back in January when the cidery begins full production. This is the only period in which the venture does not return an operational profit.

Apples are grown seasonally and are thus only available for purchase during certain months. The cidery purchases their apples from August through January each year. Operational profits fall during the beginning and end of each year as a result of apple costs.

The retail and wholesale prices used in the model are based on local market prices and allow for promotional pricing because the cidery is a relative new venture breaking into the cider market. Consequently, it would not be unreasonable to consider increasing prices if demand exceeds supply in the future.

Figure 18: Operational Profits (EBITDA) Over the Life of the Project



Balance Sheet

The proposed venture's balance sheet shows even growth throughout the projected period, as shown in Table 25. It varies by $93,000 during the three-year period. The study assumes, for reasons of simplification, that all earnings are retained for future growth during the study period.

The balance sheet reflects a book value of $116,000 in the first year. Buildings and equipment decrease in value by $36,000 due to depreciation during the three years reviewed. Inventory increases by 97% during the life of the project.

Table 25: Balance Sheet

	FY 1	FY 2	FY 3
ASSETS			
Cash and Equivalents	$ 221,688	$ 215,019	$ 257,961
Accounts Receivables	$ 98,655	$ 134,352	$ 189,929
Inventories	$ 813	$ 1,705	$ 1,606
TOTAL CURRENT ASSETS	$ 321,156	$ 351,076	$ 449,496
BUILDINGS AND EQUIPMENT, net of depr.	$ 116,049	$ 98,267	$ 80,485
OTHER ASSETS, net of amortization			
TOTAL ASSETS	**$ 437,205**	**$ 449,343**	**$ 529,982**
LIABILITIES AND MEMBERS' EQUITY			
CURRENT LIABILITIES			
Accounts payable and accrued expenses			
Accrued interest	$ (709)	$ (939)	$ (1,327)
Current maturities of long-term debt			
TOTAL CURRENT LIABILITIES	$ (709)	$ (939)	$ (1,327)
LONG-TERM DEBT			
Senior debt			
Less current maturities of long-term debt			
MEMBERS' EQUITY			
Member Equity and equity equivalents	$ 436,499	$ 436,169	$ 485,105
Dispersed Member Equity			
Retained earnings (losses)	$ 1,414	$ 14,113	$ 46,204
TOTAL LIABILITIES AND MEMBERS' EQUITY	**$ 437,205**	**$ 449,343**	**$ 529,982**

SCENARIO ANALYSIS

The scenario analysis involves entering different sets of data into the baseline model and then determining how changes in the input data affect the model's output. This permits one to view how stable the critical assumptions in the baseline model are to changes. Also, the scenario analysis will give a more robust view of the potential for the project as a whole. Since it is hard to determine what the future will hold, it is likely that some of the assumptions in the model will turn out differently under real world conditions.

There were several assumptions that were perceived as key to the project's success or failure. The results of these different model scenarios are presented below.

For brevity in presentation, only the changes in operational profits (EBITDA) of the venture are shown for most of the scenarios.

Labor Costs

The largest line item affecting project profitability is labor costs. In the baseline scenario variable labor accounts for approximately 16% of the costs associated with the project. The fixed labor (cider maker, general manager, tasting room manager) account for another 16% of project costs. The following scenarios depict changes in operating profits as a result of changes to these assumptions.

The first scenario increases the wages of fixed and variable labor by 10%. This results in decreases of EBITDA throughout the three year period. In year one there is a decrease of 55% to $9,000, in year two there is a decrease of 39% to $20,000 and in year three there is a decrease of 25% to $53,000.

If labor wages increase by 25% the venture will experience net losses for the first two years of the study. Table 26 shows these results.

In the baseline scenario the tasting room manager is not hired until year two of the model. Scenario 3 show what would happen if this manager was hired part time in year one. EBITDA would be driven down significantly in year one. Years two and three would remain the same.

Table 26: Scenario Analysis for Variations in Labor Costs

Cidery Earnings (Loss) by Year			
	Year 1	Year 2	Year 3
	Earnings (Loss) EBITDA ($)		
Scenario: Baseline scenario	$20,000	$33,000	$71,000
Scenario 1: 10% increase	$9,000	$20,000	$53,000
Scenario 2: 25% increase	$(5,000)	$(2,500)	$20,000
Scenario 3: Tasting Room Manager Hired in Year 1	($1,700)	$35,000	$74,000
Scenario 4: General Mgr and Cider Maker: FT in Year 1	($6,000)	$35,000	$74,000

Currently the general manager and cider maker are employed part time during year one of the study and both receive annual salaries of $20,000. For scenario 4 these positions will be full time in year one and receive full time salaries of $30,000. This would result in losses of ($6,000) during year one.

Sales Quantity

Analysis shows (see Table 27 below) that project profitability is affected by the number of bottles sold. The table considers variations in volumes of bottles sales. The baseline scenario has cider sales increasing by 25% from year one to year two and 40% from year two to year three.

The first scenario has sales increasing by 25% each year. The number of bottles sold and the operating profits for years one and two would remain equal to the baseline scenario. Year three was the only year affected by this change, with sales growing by 25% instead of the baseline 40%. The reduced sales numbers in year three also resulted in labor being adjusted downward slightly. The decrease in growth for year three also lead to a decline in operating profits, which fell by 20% to $57,000.

Table 27: Scenario Analysis for Variations in Cider Sales Growth

Cider Sales Growth by Year (Bottles)			
	Year 1	Year 2	Year 3
	Bottles		
Scenario: Baseline scenario	23,000	29,000	41,000
Scenario 1: Grow of 25% each year	23,000	29,000	37,000
Scenario 2: Grow of 40% each year	23,000	32,000	46,000
Scenario 3: Loss of 10% in year two, growth of 25% in year three	23,000	21,000	27,000

Cidery Earnings (Loss) by Year (Dollars)			
	Year 1	Year 2	Year 3
	Earnings (Loss) EBITDA ($)		
Scenario: Baseline scenario	$20,000	$33,000	$71,000
Scenario 1: Grow by 25% Each Year	$20,000	$33,000	$57,000
Scenario 2: Grow by 40% Each Year	$20,000	$38,000	$80,000
Scenario 3: Loss of 10% in year two, growth of 25% in year three	$20,000	$26,000	$37,000

Another possibility would be that sales increase by 40% each year. The larger sales numbers in years two and three would require an increase in labor to accommodate more patrons in the tasting room and increased production.

The scenario 2 results listed in Table 27 show that the cidery would increase operational profits in years two and three if sales increase by 40% annually. In year two there would be a 13% growth from the baseline. Increasing sales in year three would result in a $9,000 increase to EBITDA which equals a 13% growth.

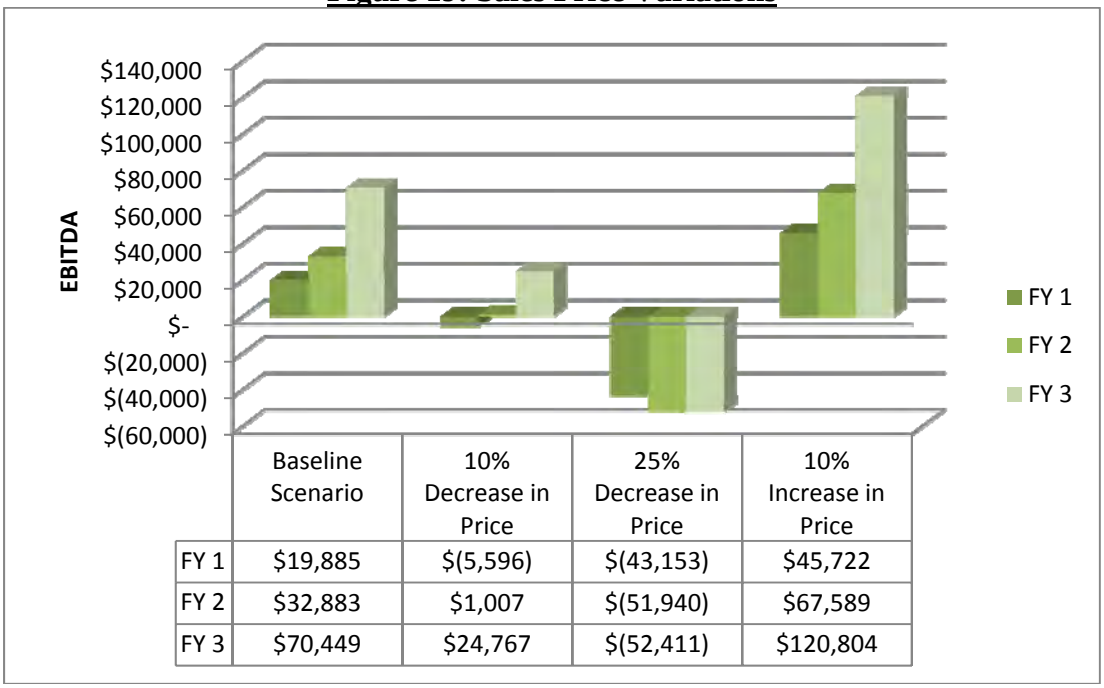
As expected, increases in sales lead to increased profits. Large sales growth may not always be beneficial though. There must be a demand for the product and the cidery needs to improve efficiency in meeting smaller demand numbers before it will have the ability to supply larger sales quantities.

Changes in sales growth may differ from year to year. In scenario 3 the cidery experiences a 10% decrease in sales from year one to year two and then a 25% growth in year three. Labor would be greatly affected by the decline in year two. The general manager and cider maker would remain at part time and the tasting room manager would not be hired until December of year two. Assistant Cidermakers and tasting room associates will also experience a reduction in hours. In year three work hours and earnings will rebound because of the increased sales.

Sale Price Variation

The offerings of the cidery are new to the market therefore it is adjusting its prices to the market. It may be the case that the venture needs to reduce its prices to achieve its sales volume goals. The following scenarios show the impact of reduced cider sales prices to the operating profit of the venture.

Figure 19: Sales Price Variations



	Baseline Scenario	10% Decrease in Price	25% Decrease in Price	10% Increase in Price
FY 1	$19,885	$(5,596)	$(43,153)	$45,722
FY 2	$32,883	$1,007	$(51,940)	$67,589
FY 3	$70,449	$24,767	$(52,411)	$120,804

In scenario 1 the cider sales prices have been decreased by 10% from the baseline for each year. This price reduction would result in operating losses of ($5,500) in year one, operating profits of $1,000 in year two and $25,000 in year three. If there were a price decrease of 25% from the baseline the venture would experience operating losses throughout the three year period. Figure 19 depicts these results.

A 10% increase in sales prices would positively affect operating profits. Year one profits would increase by 130%, year two would increase by 106% and year three would increase by 71%. These results are slightly skewed, as sales prices increase demand for the products would fall.

Percentage of Everyman and Premium Sold

The Cidery has fixed percentages sold of each type of cider produced. Of the total amount sold, 40% is Premium cider and 60% Everyman. Premium representing higher end, wine like cider and Everyman representing a more beer styled beverage. The following scenarios show the results of increasing or decreasing the sales percentages of each line.

If the cidery produces only 20% Premium cider and 80% Everyman the operating profits would be significantly affected. Table 28 present the results of such a change from the baseline scenario. Year one results in operational earnings of (1.16%) of revenue, year two would be 1.77% of revenue and year three 7.45%. The Premium line is the higher end cider and has higher retail and wholesale prices. By reducing the amount of Premium cider sold the operational profits suffer greatly.

Another possible scenario is for the cidery to focus more on high-end ciders during the project and produce 75% Premium, and 25% Everyman. An increase in production of higher end cider would lead to an increase in EBITDA throughout the model. By year three operational profits have grown by 90% over the baseline scenario.

Table 28: Scenario Analysis for Variations in Percentages of Cider Types

Cidery Earnings (Loss) by Year			
	Year 1	Year 2	Year 3
	Earnings (Loss) EBITDA ($)		
Scenario: Baseline scenario	$20,000	$33,000	$71,000
Scenario 1: 20% Premium 80% Everyman	($3,000)	($6,500)	($40,000)
Scenario 2: 75% Premium 25% Everyman	$60,000	$85,500	$135,000

Apple Varieties Percent of Use

Nelson County is utilizing three varieties of apples for the production process; heirloom, juicing and cull. Heirloom apples are the most expensive with a bushel price of $15.00; juicing and cull apples have bushel prices of $12.00 and 8.00 respectively. In the baseline scenario equal percentages of each type are used in production resulting in an average bushel price of $11.67.

The type of apple used directly affects the quality of the cider that is produced. If the cidery uses only cull apples in production, costs will be lower but demand may fall as well. Inversely, if only heirloom apples are used apple costs will be higher but more customers may be interested in purchasing a higher quality item. The following scenarios analyze the results of altering the amounts of each variety of apples used in production.

A higher quality cider may attract more customers because of its improved taste, aroma etc. Scenario one reviews the impacts on the cider if the percentage of heirloom apples used increases to 50% while the other two varieties decrease to 25%. Table 29 demonstrates that in this case the cidery will continue to operate with positive operating profits throughout the three years but earnings would be slightly less than the baseline.

Another scenario may be that the cidery uses only heirloom apples to produce cider. In this case the cidery continues to have positive earnings throughout the three years but the percent decrease is greater than the previous scenario. Earnings for year one would decrease by 35%, year two by 23% and year three by 18%. The scenario does not account for the fact that the cidery would be able to charger a higher price because of the increased quality of the product.

The cidery may choose to purchase only cull apples for production. Scenario 3 in Table 29 shows these results. In this case the EBITDA will increase each year. Although operating profits increase, the model does not account for a decrease in demand as a result of the reduced quality of the cider.

Using juicing apples will result in a more beer-style product at a mid-range price. Using 100% juicing apples would generate results slightly above the baseline scenario. The actually results of using 100% juicing apples would be slightly less to account for price variations. Scenario 4 in Table 29 depicts these results.

Table 29: Scenario Analysis for Variations in Percentages of Apple Types

Cidery Earnings (Loss) by Year			
	Year 1	Year 2	Year 3
	Earnings (Loss) EBITDA ($)		
Scenario: Baseline scenario	$20,000	$33,000	$71,000
Scenario 1: 50% Heirloom 25% Juicing and Cull	$18,000	$31,000	$67,000
Scenario 2: 100% Heirloom	$13,000	$27,000	$61,000
Scenario 3: 100% Cull	$28,000	$45,000	$89,000
Scenario 4: 100% Juicing	$19,000	$34,500	$73,000

Variations in Price of Apple Varieties

Table 30 shows the baseline prices for each type of apple used. There are several factors used to determine these prices including weather, disease and demand. Changes in these factors could result in higher or lower prices for the season. Table 31 shows these results.

Table 30: Baseline Bushel Cost of Apples

Apple Types	Cost Per Bushel
Heirloom Apples	$ 15.00
Juicing Apples	$ 12.00
Cull Apples	$ 8.00

Scenario 1 shows the results of apple prices increasing by 25%. The price increase would result in operational profits being reduced for each year. Income in year one would fall by 30%, year two decrease of 15% and year three decrease of 11%. Refer to Table 31 to view these results.

The same factors that negatively affected the apple crop could in turn cause positive results. If the winter was mild, or demand suddenly decreased for apples, then the prices would fall as a result of more apples being available in the market. Scenario 2 looks at the results of apple prices decreasing by 25%. If this occurred, EBITDA in year one would increase to $26,000 and by year three there would be an increase of 21% from the base scenario.

Scenario 3 analyzes the effect of a 50% spike in apple prices. If this occurs the cidery will continue to have positive operational profits, but earnings will be reduced from the baseline. Year one operational profits will fall by 63% to $7,500. Year three operational profits will decrease by 34% to $47,000.

If apple prices increase by 75%, the cidery will break even in year one of the study. This is a 90% decrease in EBITDA from the baseline scenario. By year three operational profits will increase to $36,000, falling below the baseline scenario by 50%.

If there is a 100% increase in apple prices, operational losses in year one would be equal to ($5,000) and by year three EBITDA would be 66% below the baseline scenario. Scenario 5 in Table 31 shows these results.

Table 31: Scenario Analysis for Variations in Cost of Apple Types

Cidery Earnings (Loss) by Year			
	Year 1	Year 2	Year 3
	Earnings (Loss) Net Income ($)		
Scenario: Baseline Scenario	$20,000	$33,000	$71,000
Scenario 1: 25% Increase In All Prices	$14,000	$28,000	$63,000
Scenario 2: 25% Decrease In All Prices	$26,000	$43,000	$86,000
Scenario 3: 50% Increase In All Price	$7,500	$18,000	$47,000
Scenario 4: 75% Increase In All Prices	$1,000	$11,000	$36,000
Scenario 5: 100% Increase In All Prices	($5,000)	$3,000	$24,000

The cost of apples is the third largest cost associated with the cidery following labor and bottling materials. As the scenarios have shown, increases in apple prices do negatively affect the operational profits of the cidery. Despite apples being the main ingredient in cider production, the costs of apples is not the largest risk associated with production. It is also unlikely that apple prices will spike and retain those inflated prices for a three year period. Based on the scenario results, the cidery should be able to maintain production even if an increase in apple prices does occur.

Sales Venue

The cidery has three types of venues though which they sell their cider; direct at events, tasting room sales, and indirect via wholesalers. The baseline for the model has sales being divided among these three venues. Table 32 shows the percentages. A majority of sales are conducted through the onsite tasting room. The following scenarios will analyze the results of varying the percent of sales through each venue.

Table 32: Baseline Sales % by Venue

	Year 1	Year 2	Year 3
Sales to Restaurants	0%	0%	0%
Sales direct at Events	15%	15%	15%
Sales direct at Tasting Room	55%	55%	55%
Sales indirect via Wholesalers	30%	30%	30%
	100%	100%	100%

The first scenario shows how income is affected if the amount of cider sold at the tasting room is reduced to 25% and the amount of wholesale sales increases to 60%. If tasting room sales decrease by nearly 50% from the baseline, the number of tasting room employees would also decrease. For scenario one the tasting room manager remains part time for years two and three and a second tasting room assistant is not hired until ht end year three.

In the first scenario years one and two will have negative operating profits of ($19,000) and ($17,000) respectively. Year three will have a positive net income of $26,000, a reduction of 65% from the baseline scenario. These results show the importance of tasting room sales. Table 33 depicts these results.

Some cideries rely on events to generate a majority of their income. Scenario two shows the results if the number of events, price of events as well as the percent of cider sales at events doubled. While the percent of sales increases at events, tasting room sales fall by 10% and wholesale sales fall by 5%. The tasting room manager, who is responsible for coordinating events, will be brought on as part time in year one and increase to full time in year two. All other positions will remain the same.

Table 33 shows the results of scenario 2. As the number of events double operating profits in year one fall to $15,000 and then increase to $48,000 and $105,000 in years 2 and 3 respectively. The decrease in year one is attributed to the hiring of the events manager. With the increase in the number of events the cidery would also need to purchase additional equipment, such as a stereo system and tents, to compete with other event hosting cideries in the area. Increased

investment into their promotional plan would be required in order to draw more events to the location. These improvements were not included in the scenario.

Wholesales sales are currently the second largest sales venue for the cidery. Scenario 3 analyzes the results of wholesale sales increasing to 50% while tasting room sales and event sales decrease to 25%. As wholesale sales increase the cidery will need to increase the number of work hours of the local delivery driver. For scenario three the driver hours have been increased to 20 hours per week from ten and a second driver was hired in the third year. Because of lower sales in the tasting room the manager would not be hired until the end of year two and the tasting room associates will remain at part time throughout the model. The model does not account for the increased price of shipping cider to wholesale vendors in other locations.

If wholesale sales increased to 50% of sales, the cidery would break even in year two of the model. By year three operating profits would be equal to $36,000, a 49% decrease from the baseline. If the cidery wanted to focus on wholesale sales they would need to sale more kegs instead of bottles as well as potentially increase their wholesale prices.

Table 33: Scenario Analysis for Variations % Sold Through Venue Types

Cidery Earnings (Loss) by Year			
	Year 1	Year 2	Year 3
	Earnings (Loss) EBITDA ($)		
Scenario: Baseline Scenario	$20,000	$33,000	$71,000
Scenario 1: 25% Tasting Room, 60% Wholesale, 15% Events	($19,000)	($17,000)	$26,000
Scenario 2: 45% Tasting Room, 25% Wholesale, 30% Events	$15,000	$48,000	$105,000
Scenario 3: 50% Wholesale, 25% Tasting Room, 25% Events	($16,000)	$13,000	$36,000

Everyman Wholesale Sold Only in Bottles or Only in Kegs

The cidery discussed in this feasibility study is prototypical. It is meant to encompass multiple cider industry components. Several decisions made for this cidery many not be included in an operational cidery. For example, a cidery many choose to sell wholesale cider entirely in either bottles or kegs. The following two scenarios show the results of selling Everyman cider wholesale only in bottles or entirely kegs.

For scenario 1 the Everyman line of cider wholesale sales are entirely comprised of bottle sales. As shown in Table 34, by year two the operating profits of scenario 1 surpass those of the baseline. By year three operating profits have grown by 14% over the baseline.

Operating profits are increasing because of the increased unit price of bottles compared to kegs. One wholesale bottle of Everyman retails for approximately $7.00, which the equivalent amount in kegs is equal to $4.00, this price different helps to offset the additional bottle costs.

If the cidery chose to use kegs for all of the Everyman wholesale sales, operational profits would fall slightly below the baseline scenario. Year one would remain equal to the baseline, year two and three would decrease by 6% and 4% respectively. One factor not represented in the results is that buyers may prefer bottles or kegs. If this is the case, sales may increase if the cider is sold in the preferred packaging.

Table 34: Scenario Analysis for Selling Everyman Only in Bottles or Kegs

Cidery Earnings (Loss) by Year			
	Year 1	Year 2	Year 3
	Earnings (Loss) EBITDA ($)		
Scenario: Baseline Scenario	$20,000	$33,000	$71,000
Scenario 1: Everyman Wholesale Sold Only in Bottles	$17,000	$34,000	$81,000
Scenario 2:Everyman Wholesale Sold Only in Kegs	$20,000	$31,000	$68,000

Variations in Apple Prices and Labor Costs

The previous scenarios have focused on changes to one aspect of the business. In reality these changes often coincide with one another. The following scenarios look at the results of rising apple prices as well as increases in labor prices throughout the three year period.

If apple prices and labor costs increase by 10% the cidery's operational profits would decrease but remain positive. Scenario 1 in Table 35 shows these results. In year one EBITDA would fall by 65% and by year three there would be 38% decrease.

A 25% increase in apple and labor costs would lead to the cidery breaking even in the 3rd year with an EBITDA of $5,000, a 93% decrease from the baseline. In the third scenario there is a 50% increase in the costs. If this occurs the business will experience operational losses each year.

The results of these scenarios show that two events occurring at the same time will affect the earnings more so than if only one event occurred. Even a 10% increase in apple prices, coinciding with a 10% increase in labor costs would decrease operational profits by 65% in the first year. The cidery must be aware of these challenges and attempt to minimize the effects of events such as these, be it through increased pricing, decreasing labor hours or any other tactic that will improve profitability.

Table 35: Variations in Apple Price and Labor Costs

Cidery Earnings (Loss) by Year			
	Year 1	Year 2	Year 3
	Earnings (Loss) EBITDA ($)		
Scenario: Baseline scenario	$20,000	$33,000	$71,000
Scenario 1: Apple & Labor Costs Increase by 10%	$7,000	$15,000	$44,000
Scenario 2: Apple & Labor Costs Increase by 25%	($11,500)	($12,500)	$5,000
Scenario 3: Apple& Labor Costs Increase by 50%	($17,000)	($19,000)	($15,000)

Scenario Analysis Conclusion

As shown in the scenarios presented, the profits of the cidery are quite susceptible to fairly small negative impacts of labor, quantity sold, apple prices and other income potential. Labor costs are the biggest factor affecting profits. Care should be taken in the first years of operations of the cidery by its management to closely monitor these variables and make the necessary adjustments quickly to resolve any problems as they arise.

The scenarios presented in this report represent a few of the possible scenarios that could be different in reality from the conditions presented in the baseline model. It is possible that results could be more optimistic than those presented in the model, but these were not reviewed as they probably would not cause failure of the venture.

OBSERVATIONS

The hard cider industry is not only growing in the U.S., but in Virginia as well. Because the industry itself is newly revitalized, there is a need for recent information on the industry in Virginia. This study, along with others produced as a result of the Specialty Crop Block Grant awarded to Nelson County Virginia, serve to address this critical need for information.

In conducting this feasibility study, the consultant has made numerous observations of the cider industry as a whole and how this impacts the industry in Central Virginia.

The proliferation of new cideries nationally as well as within the state means that a profitable market for cider products exists. Comparisons to mature cider markets in other countries indicate that the U.S. market has ample room for expansion.

Any cidery located within Virginia will have a significant history of apple growing to draw from, as well as resources at the university level that can provide assistance with a new venture. Apple production is already an established industry and can provide a ready supply of apples.

There is room for growth of the hard cider industry in the region. This is a niche product with room for market expansion. This growth can extend to all parts of the industry including market space for hard cider products and an increase in the production of cider apples. As growth is likely to continue, the ***Virginia hard cider industry will need a greater supply of quality apples from Virginia to continue to thrive***.

The model projections show that apple input prices only represent about 8 percent of costs on average. As a result, apple cost make up a small percentage of the total operational costs. Though it is a quite competitive industry, the cidery will have the ability to pay a higher premium for quality apples needed to produce a premium hard cider product.

The single most significant cost for a small scale hard cider business is labor. The profit or loss of a potential cidery must take into account the significant portion of costs that this category represents. While most startups may be able to utilize low cost and family labor, increases in production will eventually require an investment in knowledgeable personnel to continue to achieve growth.

While the funds necessary for marketing may be difficult to procure for a small cidery, **marketing is essential for the growth and long term success of the venture.** A marketing campaign may include traditional marketing strategies, or more guerilla-style marketing tactics such as the use of social media. Regardless of the method ultimately chosen, marketing will require significant time and money in order to be successful.

Higher price premiums of wine-styled cider products contribute significantly to the profitability of the venture. Lower price point, high volume beer style production requires economies of scale that may be beyond the reach of a small scale cidery. Industry research further bears out this observation.

In the U.S. hard cider industry, national, large-scale, commercial cider producers focus on volume production of beer-styled cider. Within the state, small-scale competitors have chosen to feature products similar in style to wine, utilizing upscale marketing and flavor profiles.

Research shows a potential for events at the cidery (weddings, showers, etc.). Equipment rental for events could also be explored as a potential new source of income.

The economic prototypical cider model projects little profitability differences when the product was packaged in bottles or kegs for the wholesale market. This result may only be true for operations of a smaller scale, such as those examined in this study. Any potential cidery should closely examine the cost and labor requirements for a packaging option before choosing how to focus their wholesale production.

The small-scale nature of the cidery means it will be more sensitive to changes in sales and input costs, and may face obstacles not foreseen in this study, thus requiring a greater period of time to achieve profitability.

The alcohol industry is highly regulated. Ensuring proper licensure and certification can be time consuming and costly. There are multiple taxes and permits that must be obtained before a potential cidery can even begin production. This process can take up to two years to complete.

RECOMMENDATIONS

Based on the assumptions used in this study's analysis, the establishment of a small scale prototypical cidery in Nelson County Virginia **appears to be both technically and economically feasible.** Because the cidery under consideration in this study is prototypical, it encompasses multiple factors within one business that may not normally coexist. The small scale of the cidery analyzed requires less capital outlay that would be required by medium to large scale operations. While the cidery is small scale and prototypical in nature, there are standard concerns that any business should address.

For the purposes of this study we did not address start up costs of the cidery. Instead, we assumed that the cidery had been in production for a minimum of two years by the beginning of the first fiscal year. When addressing a new cidery, losses during the start up period could be substantial. The new business should maintain sufficient cash reserves and access to capital to sustain losses during the start-up phase of the operations.

It is recommended that a percentage of sales dollars be retained by the business as a buffer to allow the business to survive slower periods of operation. Special care should be paid to labor costs, product type, and the potential for value added events at the tasting room.

It is recommended that any small-scale cidery considering startup focus their marketing and production resources on one style beverage, either wine or beer. The budget constraints of a small-scale cidery will likely not allow successful marketing to such diverse demographic groups at the same time.

Should the cidery choose to gear their product towards wine drinkers, a specialized distributor in premium wines should be identified and considered. Working with a distributor could be more cost effective for the cidery than trying to market the high-end wines alone. The owners should identify and attempt to work with key wine writers, sommeliers and the specialized press to promote the ciders, as well as focusing on events best linked to top quality wines, such as artists' expositions, tours, and special occasion meetings.

The owners will need to monitor and ensure adequate human resources for quality in service. Because labor is such a significant factor in the profitability of this venture, a balance will need to be achieved between affordable and quality labor.

The cidery should attempt to identify additional non-cider items that may be offered for sale, which may help attract cidery visitors. The cidery should consider offering guided tours. This strategy has proven successful at many wineries. Customer input should be gathered from these visitors through the use of evaluation sheets at the end of the tour. This customer satisfaction strategy can identify future improvements for the business.

The cidery's image is key during the early stages of business. Particularly, branding and promotion are two areas the cidery will need to be successful in. The cidery should advertise in the leading beverage, food, and tourist publications. Because of the small-scale nature of the cidery, social media advertising and other forms of non-traditional marketing should be utilized to realize a higher return per marketing dollar spent. Facebook, Twitter, and the cidery's website should be updated regularly with events, promotions, news, comments, and stories, among other elements.

The potential owners of a cidery should develop industry contacts within the university system, local tourism boards, and other cideries in an attempt to educate themselves as much as possible regarding the production, marketing, and sale of hard cider products. These contacts can also help identify outlets for the cideries products as well as opportunities to expand its customer base.

We recommend that the client continue to develop joint projects to further the hard cider industry in Virginia. Nelson County Virginia is well placed to develop a regional industry, similar to the winery industry within the state. Apple producers should be encouraged to add production of heirloom apple varieties, and the establishment of cideries should be promoted.

APPENDICES

APPENDIX A: VDABC COMPLIANCE AGENTS & ASSIGMENT AREA

SAC Roger D. Stevens Staunton Regional ABC Office 460 Commerce Square Staunton, VA 24401	(540) 332-7800, Ext. 110 (Office) (540) 332-7814 (Fax)
ABC Compliance Agent	**Assignment Area**
SSA O. Caraballo (Orlando) Roanoke Regional ABC Office 2943-D Peters Creek Road Roanoke, VA 24019 (540) 562-3604, Ext. 112 (Office) (540) 562-3612 (Fax)	**CITIES:** Bedford, Blacksburg, Bristol, Clifton Forge, Covington, Danville, Galax, Lynchburg, Martinsville, Norton, Radford, Roanoke, Salem. **COUNTIES:** Alleghany, Bath, Bedford, Bland, Botetourt, Buchanan, Campbell, Carroll, Charlotte, Craig, Dickenson, Floyd, Franklin, Giles, Grayson, Halifax, Henry, Lee, Montgomery, Patrick, Pittsylvania, Pulaski, Roanoke, Russell, Scott, Smyth, Tazewell, Washington, Wise, Wythe.
SSA Marc Haalman Richmond Central Office 2901 Hermitage Road Richmond, VA 23220 (804) 213-4626 (Office) (804) 213-4574 (Fax)	**CITIES:** Colonial Heights, Richmond. **COUNTIES:** Amelia, Appomattox, Buckingham, Caroline, Charles City, Chesterfield, Cumberland, Essex, Hanover, Henrico, King & Queen, King George, King William, Lancaster, Middlesex, New Kent, Northumberland, Nottoway, Powhatan, Prince Edward, Richmond, Westmoreland.
SSA G. W. Stockhowe (George) Chesapeake Regional ABC Office 1103 South Military Highway Chesapeake, VA 23320 (757) 424-6700, Ext. 218 (Office) (757) 424-6744 (Fax)	**CITIES:** Chesapeake, Emporia, Franklin, Hampton, Hopewell, Newport News, Norfolk, Petersburg, Poquoson, Portsmouth, Suffolk, Virginia Beach, Williamsburg. **COUNTIES:** Accomack, Brunswick, Dinwiddie, Gloucester, Isle of Wight, James City, Lunenburg, Mathews, Mecklenburg, Northampton, Prince George, Southampton, Surry, Sussex, York.
SSA J. K. Craft (John) Staunton Regional ABC Office 460 Commerce Square Staunton, VA 24401 (540) 332-7800, Ext. 103 (Office) (540) 332-7814 (Fax)	**CITIES:** Buena Vista, Charlottesville, Harrisonburg, Lexington, Staunton, Waynesboro, Winchester. **COUNTIES:** Albemarle, Amherst, Augusta, Clark, Culpeper, Fluvanna, Frederick, Goochland, Greene, Highland, Louisa, Madison, Nelson, Orange, Page, Rappahannock, Rockbridge, Rockingham, Shenandoah, Warren.
SSA K. E. Kelly (Katie) Alexandria Regional ABC Office 6308 Grovedale Drive Alexandria, VA 22310 (703) 313-4432 Ext. 306 (Office) (703) 313-4444 (Fax)	**CITIES:** Alexandria, Fairfax, Falls Church, Fredericksburg, Manassas, Manassas Park. **COUNTIES:** Arlington, Fairfax, Fauquier, Loudoun, Prince William, Spotsylvania, Stafford.

APPENDIX B: PROJECT LEADERSHIP

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Stephen Versen is a project manager with the Virginia Department of Agriculture and Consumer Services. Mr. Versen is actively involved in helping to bring jobs and investment to Virginia's Agriculture, Forestry and related businesses by assisting entrepreneurs and existing businesses start-up, relocate, or expand their operations in Virginia.

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Dr. Peck is the Assistant Professor of Horticulture at Virginia Tech University and extension agent at the Alson H. Smith, Jr. Agricultural Research and Extension Center. His research addresses the challenges of producing tree fruits sustainably and profitably within Virginia and crosses disciplinary fields, frequently collaborating with colleagues in soil science, entomology, food science, plant pathology, agricultural economics, and agricultural education. He has a strong interest in value-added products and niche crops, such as hard cider and perry, native fruits, and heirloom fruit varieties.

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Maureen Kelley is the Director of Economic Development and Tourism for Nelson County, Virginia. She is responsible for all County economic development activities, including business recruitment, retention and workforce development. Ms. Kelley has more than twenty years of business development experience, including director of a chamber of commerce, Virginia Main Street program manager, Virginia Tourism program development officer and a founding member of VDACS' VADO group (Virginia Ag Development Officers).

Nelson County Cider Roundtable
In 2011, Nelson County was awarded a $30,000 Specialty Crop Block Grant. As part of the project, a group of apple growers and hard cider producers was convened for discussion of the industry and to foster collaboration between these two essential parts of the industry.

APPENDIX C: WINE PRODUCTION & CONSUMPTION

Appendix C 1: Wine production and consumption for the main world producers

In million gal

		2002	2003	2004	2005	2006
Italy	Wine Production	1,122.9	1,104.4	1,319.1	1,335.8	1,374.6
	Wine Consumption	732.0	775.2	747.6	713.7	722.0
	Difference abs. value	390.9	329.3	571.5	622.1	652.6
	Difference in %	35%	30%	43%	47%	47%
France	Wine Production	1,330.2	1,224.7	1,516.0	1,376.5	1,377.0
	Wine Consumption	919.8	900.3	877.5	885.8	871.8
	Difference abs. value	410.3	324.4	638.5	490.7	505.2
	Difference in %	31%	26%	42%	36%	37%
Spain	Wine Production	884.4	1,105.4	1,135.6	998.8	1,007.5
	Wine Consumption	368.8	364.5	367.1	361.5	357.0
	Difference abs. value	515.6	740.9	768.5	637.2	650.5
	Difference in %	58%	67%	68%	64%	65%
South Africa	Wine Production	189.9	233.9	245.1	222.1	248.3
	Wine Consumption	102.5	91.4	91.9	89.8	90.0
	Difference abs. value	87.4	142.4	153.2	132.2	158.3
	Difference in %	46%	61%	63%	60%	64%
United States	Wine Production	536.3	515.1	531.2	604.6	513.6
	Wine Consumption	595.4	628.8	642.1	663.3	684.2
	Difference abs. value	(59.1)	(113.6)	(110.9)	(58.7)	(170.7)
	Difference in %	-11%	-22%	-21%	-10%	-33%
Argentina	Wine Production	335.4	349.4	408.5	402.1	406.7
	Wine Consumption	316.7	325.9	293.6	289.8	293.3
	Difference abs. value	18.7	23.4	114.9	112.3	113.4
	Difference in %	6%	7%	28%	28%	28%
Australia	Wine Production	321.4	286.2	387.8	377.8	376.8
	Wine Consumption	105.9	110.8	115.2	119.5	121.1
	Difference abs. value	215.6	175.4	272.6	258.3	255.7
	Difference in %	67%	61%	70%	68%	68%
Chile	Wine Production	148.5	176.5	166.5	208.3	223.2
	Wine Consumption	60.7	67.4	67.3	69.8	62.9
	Difference abs. value	87.9	109.1	99.2	138.5	160.3
	Difference in %	59%	62%	60%	66%	72%
China	Wine Production	295.9	306.4	309.1	317.0	317.0
	Wine Consumption	303.0	319.8	323.7	334.2	350.8
	Difference abs. value	(7.1)	(13.4)	(14.6)	(17.2)	(33.8)
	Difference in %	-2%	-4%	-5%	-5%	-11%
Germany	Wine Production	261.1	216.4	264.4	241.8	235.5
	Wine Consumption	535.5	521.3	524.2	524.3	533.9
	Difference abs. value	(274.4)	(305.0)	(259.9)	(282.5)	(298.4)
	Difference in %	-105%	-141%	-98%	-117%	-127%

Source: OIV, International Organization of Vine and Wine, September 2010

Appendix C 2: Main U.S. wine regions, wineries and production, 2011

Region	Wineries (%)	Production (%)
Northeast	10.2	4.1
South	13.3	1.2
Midwest	12.6	.8
Mountain	3.8	.2
California	44.1	89.5
Northwest	16.0	3.7
Total	100.0	99.5

Source: U.S. Department of Commerce, U.S. Wine Industry 2011.

Appendix C 3: Wine consumption in the U.S., 1980-2010

Reported Wine Consumption in the U.S. (1980-2010)

Year	Total wine per resident (gall.)	Total wine (million gall.)	Total table wine (million gall.)*
2010	2.54	784	678
2009	2.50	767	670
2008	2.48	753	658
2007	2.47	745	650
2006	2.39	717	628
2005	2.33	692	609
2004	2.26	665	589
2003	2.20	639	570
2002	2.14	617	552
2001	2.01	574	512
2000	2.01	568	507
1999	2.02	543	475
1998	1.95	526	466
1997	1.94	519	461
1996	1.89	500	439
1995	1.77	464	404
1994	1.77	459	395
1993	1.74	449	381
1992	1.87	476	405
1991	1.85	466	394
1990	2.05	509	423
1989	2.11	524	432
1988	2.24	551	457
1987	2.39	581	481
1986	2.43	587	487
1985	2.43	580	478
1984	2.34	555	401
1983	2.25	528	402
1982	2.22	514	397
1981	2.20	506	387
1980	2.11	480	360

* including all still wines not over 14% alcohol.

Source: The Wine Institute

Appendix C 4: Gallup Poll Survey 2010

Do you have occasion to use alcoholic beverages such as liquor, wine or beer, are you a total abstainer?	% Yes, drink
2010	67%
2009	64%
2008	62%
1999	64%
1989	56%
1979	69%
1969	64%
1959	61%
1949	58%
1939	58%

Appendix C 5: VA WINE SOLD BY VA WINERIES

in cases	Total Wines Sold In VA 2009	Total Wines Sold In VA 2010	Total Wines Sold In VA 2011	Percent of Sales	Total Wines Sold In VA 2012	2012 - 2011 Comparison	2012 - 2011 % Variance
January	614,213.2	608,922.59	651,962.4	6.5%	720,342.9	68,380.5	10.5%
February	638,834.6	671,585.61	771,510.6	7.7%	762,115.8	-9,394.8	-1.2%
March	716,186.4	795,034.08	825,478.9	8.3%	809,731.2	-15,747.6	-1.9%
April	734,998.0	793,463.19	803,906.1	8.1%	783,491.7	-20,414.4	-2.5%
May	726,858.7	749,017.25	825,509.6	8.3%			
June	742,712.5	793,225.49	819,897.0	8.2%			
July	743,783.0	757,543.30	768,185.0	7.7%			
August	671,042.8	735,000.24	809,756.9	8.1%			
September	730,108.2	775,441.9	831,706.2	8.3%			
October	818,979.3	839,221.2	855,686.3	8.6%			
November	832,313.9	922,688.5	967,956.2	9.7%			
December	987,027.9	1,028,286.6	1,040,243.0	10.4%			
Total	**8,957,058.4**	**9,469,429.9**	**9,971,798.0**	**100%**	**3,075,681.6**		

APPENDIX D: ALCOHOL AND TOBACCO TAX AND TRADE BUREAU HARD CIDER STATISTICS

Appendix D 1: Cider Market Statistics 2012 Q1

The Beer Institute

US Cider Market - Domestic and Import Volumes

CY Year 2005 to CY Year 2011 and YTD March 2012

Year	Domestic Bulk Gallons	Domestic Pack Gallons	Domestic Total Gallons	Import Total Gallons	Total Cider Gallons	Total Barrels	Total CE's	Domestic Share	Domestic growth	Import growth	Total growth
2005	972	4,881,592	4,882,564	2,145,906	7,028,470	226,725	3,123,764	69.5%			
2006	1,492	5,484,481	5,485,973	2,400,221	7,886,194	254,393	3,504,975	69.6%	12.4%	11.9%	12.2%
2007	558	6,128,993	6,129,551	2,711,404	8,840,955	285,192	3,929,313	69.3%	11.7%	13.0%	12.1%
2008	16,070	6,385,492	6,401,562	2,636,357	9,037,919	291,546	4,016,853	70.8%	4.4%	-2.8%	2.2%
2009	11,506	6,916,184	6,927,690	2,622,937	9,550,627	308,085	4,244,723	72.5%	8.2%	-0.5%	5.7%
2010	16,902	7,595,995	7,612,897	2,901,140	10,514,037	339,162	4,672,905	72.4%	9.9%	10.6%	10.1%
2011	117,175	9,272,387	9,389,562	3,213,360	12,602,922	406,546	5,601,299	74.5%	23.3%	10.8%	19.9%
YTD 2011 (Q1)	6,459	1,835,279	1,841,738	727,341	2,569,079	82,874	1,141,997				
YTD 2012 (Q1)	15	2,864,491	2,864,506	909,772	3,774,278	121,751	1,677,728	75.9%	55.5%	25.1%	46.9%

Sources: Beer Institute, TTB Wine Reports and US Commerce Department, 2012

Appendix D 2: Cider Producers by State and Year 2001-2011

	2001	***2002***	***2003***	***2004***	***2005***	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***
AL								1			
AK									1	1	1
CA	5	6	2	7	5	6	7	7	11	13	14
CO				1	1	1	1	1	1	1	4
CT			1	1		1	1	3	2	2	2
IA				1	1	1	2				1
ID									1		1
IN					1		1	1	1	2	2
KY			1	2	3	2	2	1	1	2	2
MA	1	2	3	3	4	5	6	6	6	6	6
MD										1	
ME									1	3	3
MI		2	2	4	6	5	7	10	15	17	22
MN									1	1	3
MO				1	1	1			1	1	2
MT						1					1
NC											1
NE									1	1	
NH							1	2	2	3	4
NY	3	3	4	7	5	8	5	8	12	10	13
OH										6	3
OK							1			1	1
OR	2	1	2	5	3	3	2	3	7	12	11
PA			1				1	1	2	2	3
RI	1	1	1	1	1	1	1	1	1	1	1
SD						1	1	1	1	1	
TX							1			1	1
VA						1	1	1	2	2	2
VT				1	1	1	1	2	2	4	6
WA	3	3	2	3	4	3	3	5	5	7	10
WI	1	1	1	2	2	3	3	4	5	4	3
TOTAL	16	19	20	39	38	44	48	57	81	104	122

Appendix D 3: Cider Production and Taxpaid Removals by Fiscal Year 2007-2011

	FY 2007	**FY 2008**	Increase/ Decrease	**FY 2009**	Increase/ Decrease	**FY 2010**	Increase/ Decrease	**FY 2011**	Increase/ Decrease
HARD CIDER PRODUCTION	549,539	425,520	*-23%*	556,522	*31%*	772,609	*39%*	1,094,821	*42%*
BULK CIDER TAXPAID REMOVALS	1,754	260	*-85%*	24,788	*9434%*	14,438	*-42%*	26,539	*84%*
BOTTLED CIDER TAXPAID REMOVALS	5,854,467	6,431,634	*10%*	6,720,304	*4%*	7,329,310	*9%*	8,555,889	*17%*

Appendix D 4: States Ranked by Hard Cider Production Financial Year 2007-2011

	TOP STATES HARD CIDER PRODUCTION											
	FY 2007		**FY 2008**		**FY 2009**		**FY 2010**		**FY 2011**	
1	CA	247,583	OH	170,506	OH	151,900	OH	173,600	CA	298,727
2	OH	151,900	MA	70,841	CA	112,335	CA	156,641	OH	253,785
3	NY	45,855	CA	46,530	MA	75,032	MI	76,738	FL	112,591
4	WA	32,595	NY	40,151	FL	50,573	FL	71,355	OR	100,314
5	OR	26,856	OR	25,064	NY	46,086	OR	70,953	WA	94,387
6	MI	17,294	WA	24,430	MI	38,652	MA	64,035	MA	81,848
7	MA	12,818	MI	18,497	WA	37,016	WA	52,099	NY	51,902
8	FL	6,624	VT	16,002	OR	26,006	NY	48,648	MI	44,342
9	WI	1,900	FL	6,389	VT	5,507	VT	28,189	VT	29,104
10	RI	1,620	RI	1,925	PA	4,230	PA	9,226	VA	10,196
11	IA	1,366	WI	1,563	WI	2,756	VA	6,437	ME	6,227
12	VA	800	IA	1,550	CT	2,718	WI	6,098	RI	3,780
13	PA	750	VA	691	VA	1,063	RI	2,060	WI	2,977
14	CT	510	NH	410	RI	1,050	CT	1,829	IN	1,479
15	CO	469	CT	347	NH	1,005	ME	1,500	CT	1,115
16	MO	409	AL	326	CO	250	NH	875	NH	538
17	KY	140	IN	164	SD	200	MN	856	OK	423
18	MT	50	PA	125	IN	143	NE	415	PA	400
19			CO	10			IN	400	MD	380
20							CO	300	NE	206
21							KY	250	MN	100
22							SD	100		
23							AK	5		
	total	*549,539*	*total*	*425,520*	*total*	*556,522*	*total*	*772,609*	*total*	*1,094,821*

APPENDIX E: STANDARD CIDERY AND TASTING ROOM EQUIPMENT

Item:	Price:	Description/Source
Processing		
Box Rollers/Pallet Jack	$ 500.00	Two Pallet Jacks $250/ea.
Inspection Table/Trash Eliminator	$ 300.00	Stainless Steel Table
Washer Scrubber/Rinsing System	$ 4,000.00	Core Equipment Estimate
Conveyer Elevator	$ 8,900.00	Goodnature Quote
Chopper Mixer/Mill/Scratter	$ 10,200.00	Goodnature Quote
Hopper		Goodnature Quote
Pump (for pomace)	$ 15,500.00	Goodnature Quote
Accumulator Bin (for pomace)		Goodnature Quote
Pump Lines (for pomace)		Goodnature Quote
Press	$ 36,000.00	Goodnature Quote
Juice Collector		Goodnature Quote
Pomace Bin (pommace removal/discharge)	$ 360.00	$180.00/bin. Tote with wheels and forklift access. Qty two.
Juice Pump	$ 1,500.00	Goodnature Quote (sanitary pump 2 for shop)
Filter Frame/Plate Frame Filter	$ 1,300.00	20x20 Ten plate filter
Screen/Filter	$ 130.00	2 packs $65.00/pk of 100 sheets.
Pump Lines (for juice)	$ 150.00	200ft @ $.65/ft
Clamps and Misc Accy	$ 100.00	General Use
10 Gallon Tubs/Trash Cans	$ 21.00	Food Grade
10gallon Tub/Trash Can Dolly	$ 50.00	General Use
Various Buckets	$ 40.00	5 Food Grade Buckets at $8.00/ea.
Processing Utensils & Supplies	$ 75.00	Food Grade Shovel for pommace/Apples/Etc.
Total Processing	**$ 79,126.00**	
Storage/Fermenting		
Pump (sanitary)	$ 1,500.00	Goodnature Quote
Fermentation Tank-500gallon	$ 28,000.00	Year One: 4 Tanks Prospero Quote $6,060/ea. Plus $500 for

		misc. fittings. 500 gallon
Storage Maturation Flex Tanks	$ 5,400.00	Year One: 6 FlexTanks: $875.00/each. 300 gallons capacity (pallet mount)
Bottling Holding Tanks	$ 14,000.00	Year One: 2 Tanks Prospero Quote $6,060/each plus $500 for misc. fittings. 500 gallon
Measuring Vessels	$ 30.00	General Use Graduated Cylinders-Qty3
Various Buckets	$ 40.00	5 Food Grade Buckets at $8.00/ea.
Tubing	$ 150.00	General use and for transfer of product between process steps.
Sterilizer	$ 100.00	Three each of Saniclean at $15/32 oz and Starsan at $8/8 oz Starsan (Rnd to 100.00)
Chemicals Misc/cleaning etc.	$ 100.00	General and Various (contingency)
Tank Cleaning Equipment	$ 100.00	Misc Brushes etc.
Total Storage/Fermenting	**$ 49,420.00**	
Bottling/Finishing		
Bottler/Filler	$ 8,700.00	G.W. Kent 4 spout sprarkling filling machine
Manual Capper	$ 20.00	General Backup
Alternate Pneumatic Capper	$ 900.00	G.W. Kent Capper
Small Air Compressor (for capper)	$ 200.00	
Bottle Labeler	$ 2,000.00	Bottle-Matic-II 2 labeler/applicator
Kegs	$ 10,000.00	$100/keg. Price is for 100 kegs for Years One to Three
Keg Washer	$ 200.00	
Cleaning Supplies	$ 000.00	Misc Cost
Utensils/Misc/Towels	$ 300.00	Misc Cost
Air Compressor	$ 300.00	Craftsman 20 gallon
Total Bottling/Finishing	**$ 22,620.00**	
General/Material Handling		
Pressure Washer	$ 300.00	
Misc. Supplies	$ 1,000.00	Misc Cost
Hand Cart	$ 150.00	Cosco

Storage Shelves/Rolling Metro Shelves	$ 1,200.00	2 rolling racks (24x48x69) $300/ea. 4 stationary (18x48) at $150/each.
Hydrometer	$ 40.00	
Titrator	$ 1,000.00	
Refractometer	$ 200.00	
Movable Stairs	$ 1,300.00	
Misc Lab Equipment	$ 800.00	Estimate Average
Wet/Dry Vacuum	$ 180.00	Lowes
Total General/Material Handling	**$ 6,170.00**	
Tasting Room		
Antique Tables/Chairs	$ 4,000.00	Estimated Cost
Spittoon	$ 60.00	3 at $20/each
Draft Apparatus (for serving on tap)	$ 1,000.00	Freestanding model $500-1000 average.
Display Cases/Wine Display Cases	$ 1,000.00	Display Cases 2 at $800/ea and wine racks 4 at $50 each
Bar	$ 12,500.00	Construction of Wooden Bar Area
Sink/Sump Pump & Plumbing	$ 600.00	Stainless Steel sink $400 and $200 for plumbing
Signage (indoors-tasting room) General	$ 200.00	Misc Cost
Fire Extinguisher	$ 100.00	5 at $20.00 each
Smoke Detector	$ 50.00	5 at $10.00 each
Exit Signs	$ 100.00	5 at $20.00 each
Wine Buckets 8.00/each see above.	$ 16.00	2 at $8.00 each
Wine Cooler	$ 300.00	Lowes 21 bottle freestanding wine cooler
Dishwasher	$ 900.00	2 Dishwashers at $450 each
Vacuum Cleaner	$ 150.00	Commercial Duty Vacuum
Beer Glasses/Pilsners	$ 220.00	Discountmugs.com 144-12 oz pilsner
Wine Glasses/Stemware	$ 200.00	Discountmugs.com 144-10.5oz wine glass
Total Tasting Room	**$ 21,396.00**	

Misc/Office		
Computers and scanners	$ 2,000.00	Two desktop computers and one scanner.
Desks	$ 400.00	2 Ikea desks at $200 each
Office Chairs	$ 150.00	2 Ikea chairs at $75 each
Misc Offic Eqpt.	$ 300.00	file cabinet, desktop, supplies, etc.
Work Tables	$ 600.00	2 tables at $300 each
Bags, Single Bottle U-line for Wine	$ 80.00	2,000 Single Bottle Bags for wine bottles. Qty 500 per bundle at $19/bundle
Total Misc/Office	**$ 3,530.00**	
Total All Categories (Year One & Two)	**$ 182,262.00**	
5% Shipping, Handling & Set up Fees	$ 9,113.10	
Total All Categories (Year One & Two)	**$191,375.10**	
Year Three Equipment Addition		
Bottling Holding Tanks	$ 8,500.00	Year Three: Prospero Quote $7,900 for one 750gal Var. Cap. Tank. $500 for misc. fittings
Fermentation Tank-500gallon	$ 28,000.00	Year Three: Prospero Quote two 500gal tanks at $6,060 each. $500 for misc fittings
Bulk Tank Various Use	$ 11,000.00	Year Three: Prospero Quote for one 1,500gal tank at $10,100. $500 for misc fittings
Total Year Three Expand	**$ 47,500.00**	
5% Shipping, Handling & Set up Fees	$ 2,375.00	
Total All Categories (Year Three)	**$ 49,875.00**	
Total All Categories (Year One - Three)	**$ 241,250.10**	

APPENDIX F: EQUIPMENT SOURCES

Goodnature

3860 California Rd.
Orchard Park, NY 14127
1-800-875-3381
www.goognature.com

Profile and Capabilities

Goodnature Products, Inc., is a leading supplier of food processing, extraction, solid/liquid separation, and dewatering equipment, turnkey plants, and engineering services, with over 37 years of industry experience and hundreds of successful installations worldwide. Based in Buffalo N.Y. Goodnature's product offerings include: pasteurizers, extraction presses, infused fruit systems, evaporators, shredders, and more.

The XT Pasteurizer

The XT Series Pasteurizer is an all stainless steel system available with PLC/Touch screen control for ease of operation. It can be custom designed to meet the specific process requirements. It is available with either plate or tubular heat exchangers. Incorporating many aspects of the U.S. Pasteurized Milk Ordinance, the Flash Pasteurizer is an economical and reliable method to destroy bacteria and extend the refrigerated shelf life of juices, soft drinks, and other products.

Maximizer Series Press

The Maximizer Series Press is the most economical and efficient juicing machine available. It represents years of innovative engineering and groundbreaking designs. Capacities range from 500 to over 2,000 U.S. gallons (1,892 - 7,570 liters) per hour. Unlike other machines of its capacity, it needs no settling tanks, press-aids, or enzyme pre-treatments. Comparable presses suffer from either an inferior yield, high solids content, excessive labor, or an expensive price tag. Rugged construction allows the Maximizer to withstand the abuses of industrial, around-the-clock operation, while still providing a high quality, untainted end product. Ideal applications include non-citrus fruit and vegetable juices, herbal and plant extracts.

Goodnature Evaporator

The Goodnature Evaporator is ideal for the small and medium scale processor. Designed with this size facility in mind, the Goodnature Evaporator is perfect for producing concentrate from low brix juices at low temperatures. Until now, evaporators have been custom built to each application, a lengthy and costly manner of production. Goodnature's evaporator, however, is packaged with everything that a small processor would need. But if you do need a custom unit, we'll combine your input with our years of expertise in the juice industry and build the machine you need.

Goodnature Infusion

The infusion method developed by Goodnature Products, is a natural process that maximizes the use of raw materials. It creates a product with an extended shelf life that has no additives or preservatives. Once implemented, Goodnature Products' infusion technology can allow any company to produce a higher quality infused fruit at a tremendous cost savings. This successful proprietary, "one-step" infusion method utilizes a low temperature, which results in larger, plumper, tastier fruit. Not to mention, it produces a 100% pure juice by-product too!

PEC AWS PROSPERO

WWW.PROSPEROCOMPANY.COM

Prospero Equipment Co. offers complete equipment sales, consultation and service to the wine, beverage and brewing industry. After careful selection, we can offer the industry the greatest selection of equipment.

Additionally providing our clientele with the utmost quality and customer service. Prospero Equipment Co. has built relationships with some of the world's most respected wineries in the United States, Canada, and Mexico due to our experienced staff and the cooperation of our vendors. This allows PEC to provide the highest level of quality for today's winery demands.

Our premier lines are:

• GAI Bottling equipment for wine, beer, olive oil and other beverages
The best selling monoblocs in the entire world with the latest technology for ease of sanitation and bottling procedures.
Monoblocs with Rinser/De-Aeration/Filler/Corker/Capper; Combinations Foil spinners/Labelers; Bottle washers/dryers.

• CMA Professional Grape processing equipment
Sorting tables, belt elevators, crushers/destemmers and must pumps.

• SK Stainless steel Tanks and Pneumatic Presses
Standard and Customized Tanks available with Automatic Punch Down, Pump Over and Seed Removal systems.
Pneumatic Presses with slotted drums or closed tank type available from 5hl to 130hl.

• WINUS Winery Glycol Refrigeration Systems

• LIVERANI Flexible Impeller pumps and OMAC Stainless steel Rotary Lobes pumps
with U.S. variable speed drives in 1.5" to 3" for must, wine and juice.

• APE automatic case packers and palletizers

• ITALFILTERS Plate&Frame, D.E., Rotary vacuum and Cross flow filters

• SECOMAK Heatshrink tunnels and air blowers

Plus a complete line of all other types of winery equipment for processing and packaging. Prospero has service centers on both coasts. Each has a complete stock of parts and is staffed by full-time factory-trained technicians. Consulting on all phases of winery operation is available including on-site training of your staff. For further information contact us at any of our offices.

Prospero Equipment Corporation and staff look forward to being your future winery equipment supplier.

APPENDIX G: GENERAL STAFF DESCRIPTIONS & DESIRED QUALIFICATIONS

General Manager
Full-time
Reports to the Board of Directors
Duties and responsibilities:
The general manager will be responsible for planning, directing, and coordinating all cidery operations. He will be responsible for developing policies, managing the daily operations of the business, and planning for the most efficient use of inputs and human resources. Also, the candidate shall be held accountable for the accuracy of financial reporting for the business.

The general manager will be part of an energetic and progressive team with a passion for quality and the environment. The manager believes in a commitment to customer service and exhibits a high level of professionalism and integrity.

Qualifications and experience:

- Bachelor´s degree (BA) or equivalent; MBA preferred.
- Must have a "hunter" attitude to generate new business and leads.
- Sales experience in specialty products in the food/beverage industry desired.
- Cider industry related experience desired.
- Well-developed negotiation, project, and account management skills.
- Good judgment and the ability to make timely and sound decisions.
- Strong organizational, problem-solving, and analytical skills.
- Excellent written and verbal communication skills.
- Ability to make successful presentations to individuals and/or groups at all levels of an organization.
- Ability to work independently and as a team member.
- Ability to calculate figures and amounts such as discounts, interest, commissions, and percentages.
- Proven ability to handle multiple projects and meet deadlines.
- Proficient on Microsoft Word, Excel, PowerPoint, and Outlook.
- Valid Virginia driver's license.

Cider Maker
Full-time
Reports to the general manager
Duties and responsibilities:
This person needs to be able to take on multiple tasks and projects simultaneously and see them through completion. He should have a "can do" attitude. He must have the ability to work independently, delegate tasks as needed, be discrete, and possess an excellent work ethic and attention to detail. To be considered for this new position the person must live in Nelson County, have strong cidermaking knowledge, wine sales experience, and computer proficiency.

The cidermaker's responsibilities will require oversight of harvesting and apple supply, crushing, maintenance, inventory management and ordering, and oversight of the fermentation process including control of the final product's taste and flavor profile.

Qualifications and experience:

- BA or equivalent.
- 5+ years of cidermaking/winemaking and sales experience; knowledge of wine distribution system.
- Knowledge of TTB and other regulations related to wine/cider production and sale.
- Superior organizational, time management and prioritization skills.
- Strong computer skills (MS Office).
- Strong analytical, written, and verbal reasoning skills.
- Ability to lift heavy boxes (50 lbs).
- Ability to travel.

Assistant Cider Maker
Full-time
Reports to the cider maker
Duties and responsibilities:
This employee will work directly with and for the cider maker. The right candidate will pay very close attention to detail and be able to accomplish a wide array of jobs over the course of the day. He will assist the cidermaking team in the development of cidermaking styles and be responsible for all day-to-day cidermaking activities, ensuring the highest quality, image, and productivity. Main duties will be as assigned by the Cider Maker.

Qualifications and experience:
- Minimum of three years of wine/cidermaking experience including responsibility for blend decision making, directing movement and finishing.
- Bachelor's degree in Enology/Fermentation Science/Viticulture or related sciences or equivalent education and experience.
- Computer skills with Microsoft Office required.
- Strong problem solving and reasoning skills
- Experience in apple/viticulture picking decisions.
- Demonstrated leadership ability in a production environment.
- Ability to lift 40 pounds on an occasional basis.
- Ability to work a variable schedule including extended hours especially during harvest.

Tasting Room & Events Manager
Full time.
Reports to the General Manager.
Duties and Responsibilities:
In this role, he/she develops and implements results-based marketing strategies that directly support the business' performance objectives. In addition, provides management for tasting room activities including festivals and tourism, promoting sale of cider and non-cider products through event organization and execution, evaluation and follow up. The quantity and characteristics of the events are defined in conjunction with the General Manager.

The ideal candidate has a strong marketing background in the wine/cider industry, is enthusiastic about the product, food and working with the public and would like to lead the growth of a boutique cidery. The duties of this position will include developing and implementing marketing and sales plans, providing reports, developing customer contacts, representing the cidery,

dissemination of written marketing materials, merchandising, stocking, and ordering of non-cider items, oversight of events at the cidery, and management of the website.

Qualifications and experience:

- B.A./B.S. degree is required.
- Experience with premium wine/cider company desirable.
- Extensive knowledge of wines/ciders and wine/cider production helpful.
- Financial and operations knowledge including comfort with financial reports and analysis.
- Excellent organization and time management skills; ability to work under pressure and to manage multiple projects.
- Outstanding ability in customer service and working with the public.
- Must be detail oriented with excellent organizational skills and the ability to follow through and report to the General Manager.
- Must be infectiously enthusiastic and full of energy.
- Valid Virginia Driver's license and must have reliable transportation.
- Fluent in English. Willingness to learn basic cidery vocabulary.
- Must be able to lift up to 50 pounds and stand for long periods of time.

Tasting Room Associates

Part time, seasonal positions.
Report to the Tasting Room & Events Manager.
Duties and responsibilities:
Under the direction of the Tasting Room & Events Manager, the Tasting Room Associate is responsible for efficiently and effectively promoting the sale of cider and non-cider products through customer service and tastings. Also provides assistance with event set-up and breakdown for the cidery festivals and events as needed.

Duties will include tasks in the tasting room, as well as receiving and stocking duties. Expected duties such as greeting visitors and pouring tastings, answering questions, selling cider and non-cider products, routine transactions, pricing and merchandising, and other duties as assigned.

Qualifications and experience:

- Ability in customer service and working with the public.
- Knowledge of ciders and cider production required.
- Knowledge of commonly used practices and procedures used in merchandising.
- Professional appearance and demeanor.
- Must be able to work weekends and holidays.
- Must be at least 21 years old.
- 1-2 years' related experience preferred.
- High school diploma or equivalent desired.
- Basic skills in Microsoft Office, including Word and Excel.
- Ability to stand and walk for long periods of time.
- Must be able to lift up to 50 pounds repeatedly.
- Must be able to effectively stock cider and non-cider merchandise, set-up and break down structures, tables, etc., and be able to utilize dolly cart and other equipment to assist in moving heavy objects.

Orchard Manager
Full-time
Reports to the general manager
Duties and responsibilities:
Should the cidery choose to be located on an orchard that will supply the apple inputs for production, an orchard manager may be necessary to implements farming functions, coordinates the farming plans, and performs/manage special projects. The individual would need to be a hands-on manager with strong viticulture, mechanical, and people skills with the goal of consistently producing world-class apples to make great cider.

The orchard manager will work in collaboration with the cider maker(s) to achieve the goals of producing the highest quality product. Besides monitoring the orchard daily, the orchard manager will plan and personally supervise all cultural operations from pruning through harvest, and will plan future plantings. In addition, the orchard manager will also supervise and train full-time and seasonal staff. The ability to work independently as well as collaborate with the cider maker is extremely important. The candidate should be available for work in the evenings and on weekends when necessary to achieve objectives set by the general manager.

Qualifications and experience:

- Minimum of five years orchard experience
- Must be computer literate with ability to work with the Internet efficiently. Experience with various computer programs such as Excel & Word is helpful but not required.
- Must have experience managing and motivating employees.
- The candidate must be organized and self motivated.
- Valid Virginia driver's license.
- Ability to lift 50 pounds.
- Requires work in indoor and outdoor conditions; may be subject to various weather conditions.

Sales Manager
Full-Time.
Reports to the General Manager.
Duties and Responsibilities:
The cidery will grow on sales not only from the tasting room but also from distributor's allocations for the existing and new products. The Sales Manager position would work to expand distributor sales and develop a new product area. He/she will be responsible for furthering the cidery's image and sales. The Sales Manager will be hands-on and responsible for all aspects of distributor sales, and will spend at least about one fourth of the time travelling to support the distributors and trade events. Other responsibilities will include new product management; special tours including VIP, Trade and others.

The ability to create sales plans, formulate wholesale pricing, evaluate distributor performance, manage compliance, construct promotional budgets, understand and evaluate market demographics, and make tactical sales decisions will all be necessary components of this positions job description.

Qualifications and experience:

- Formal training in wine, cider or similar practical demonstrated experience.

- BA in Business Administration, Sales, Marketing or related field preferred.
- Strong analytical, written and verbal reasoning skills.
- Proven negotiation & relationship building skills.
- Minimum 4 year supplier management experience.
- Minimum 2 year distributor management desired.
- Good familiarity with individual distributors in various states with 5 years minimum experience with distributor sales.
- Ability to lift heavy boxes (50 lbs)
- Ability to travel extensively with overnight stays

Marketing Manager
Full-time.
Report to the General Manager.
Duties and Responsibilities:
The marketing manager is responsible for preparing and executing the marketing plan according to the general manager's objectives. This position requires working with the rest of the staff and managers and, in particular, with the Cidermaker and Sales Manager. He/she will do marketing research and collaborate with the rest of the team to identify those ciders that best suit the customer's needs and tastes. The person will provide innovative marketing solutions to increase the overall profitability of the brands and cidery.

The essential functions of the position include implementation of brand direction, report writing, business trend analysis, development of long term and short term marketing plans, attending trade shows, and development of the overall brand “look and feel”.

Qualifications and experience:
- Degree in business/marketing or equivalent related experience
- 4 or more years experience in ‘brand’ marketing in package goods industry (food industry experience required, wine industry experience a plus)
- Advanced computer skills with MS Office Suite (Word, Excel, PowerPoint) Access desirable
- Excellent organizational and follow-up skills
- Excellent written and verbal communications skills
- Strong business and analytical skills
- Experience with project management
- Budget maintenance experience

Cidermaker Manager
Full-time.
Report to the General Manager.
Duties and Responsibilities:
The person needs to be able to take on multiple tasks and projects simultaneously and see them through completion and have a “can do” attitude. Must have the ability to work independently, delegate as needed, be discrete, and possess an excellent work ethic and attention to detail.

At some point in the growth of the operation, it may be necessary to employ oversight of multiple cidermakers producing multiple lines of product. Exceptional communication and

interpersonal skills are desired as there will be interaction with a wide variety of contacts. Must be certified to drive a forklift and some medium lifting (50 lbs) will be necessary from time to time.

Working with the Cidermakers, the duties of this position may include harvest/crush operations, post-harvest cider management, facility maintenance, inventory and compliance management, bottling, oversight of the in-house laboratory, management of Cidermakers and Assistant Cidermakers, budgetary accountability, order/inventory cidermaking supplies and working closely with Orchard Manager in maintenance activities.

Qualifications and experience:

- B.A. or equivalent
- 5+ years of cider/winemaking experience
- Superior organizational, time management and prioritization skills
- Knowledge of Orchard Management
- Strong computer skills (MS Office)

APPENDIX H: EMPLOYEE SCHEDULE AND LABOR EXPENSE

Year 1 **Labor Costs Estimates Hourly staff**

	Hourly wage	Ongoing	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
# of work hours		0	126	126	126	126	126	126	126	126	126	126	126	126	1512
Assistant Cider makers	$12.50	1	1	1	1	1	1	1	2	2	2	1	1	1	
Cost Assistant Cider makers		0	$1575	$1575	$1575	$1575	$1575	$1575	$3150	$3150	$3150	$1575	$1575	$1575	$23625
# of work hours		0	42	42	42	42	42	42	42	42	42	42	42	42	504
Delivery Drivers	$12	0	1	1	1	1	1	1	1	1	1	1	1	1	
Cost Drivers		0	$504	$504	$504	$504	$504	$504	$504	$504	$504	$504	$504	$504	$6048
# of work hours		40	20	20	150	150	150	150	150	150	150	150	150	150	1540
Tasting Room Associates	$10.5	1	1	1	1	1	1	1	1	1	1	1	2	2	
Cost Tasting Staff		$420	$210	$210	$1575	$1575	$1575	$1575	$1575	$1575	$1575	$1575	$3150	$3150	$19320
Total Cost		$420													$48993

Year 2 & Year 3				Labor Costs Estimates Hourly staff								
	Year 2						Year 3					
	Hourly wage	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	Hourly wage	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
# of work hours		378	378	378	378	1512		378	378	441	441	1,638
Assistant Cider makers	$12.7	1	1	2	2		13	2	2	2	2	
Cost Assistant Cider Makers		$4,800	$4,800	$9,601	$9,601	$28,803		$9,828	$9,828	$11,466	$11,466	$42,588
# of work hours		126	126	126	126	504		126	126	252	252	756
Delivery Drivers	$12.2	1	1	1	1		$12.5	1	1	1	1	
Cost Drivers		$1,537	$1,537	$1,537	$1,537	$6,148		$1,575	$1,575	$3,150	$3,150	$9,450
# of work hours		378	378	378	378	1,512		504	504	504	504	2,016
Tasting Room Manager	$12	1	1	1	1		$12.25	1	1	1	1	
Cost Manager		$4,536	$4,536	$4,536	$4,536	$18,144		$6,174	$6,174	$6,174	$6,174	$24,696
# of work hours		315	315	315	315	1260		441	441	441	441	1,764
Tasting Room Associates	$10.7	1	1	2	2		$11	2	2	3	3	
Cost tasting staff		$3,370	$3,370	$6,741	$6,741	$20,223		$9,702	$9,702	$14,553	$14,553	$48,510
Total Costs						$73,319						$125,244

APPENDIX I: PRO FORMA INCOME STATEMENT

PRO FORMA OPERATING STATEMENTS Fiscal Years 1-3		For New Product Lines Tasting Room and Tourism		
	Ongoing	**FY1**	**FY2**	**FY3**
Revenues [Sales]	12,131	295,965	403,055	569,788
Total Processing Costs	(1,430)	(130,906)	(154,987)	(244,783)
Total Marketing Costs	-	-	-	-
Variable Margin (Loss)	10,702	165,059	248,068	325,005
Total Equipment Costs	(1,724)	(9,776)	(11,167)	(12,964)
Total Facilities Costs	(6,152)	(36,790)	(47,905)	(49,026)
Total Selling and Marketing Costs	-	(20,190)	(43,175)	(54,728)
General and Administrative Expenses	(5,283)	(57,700)	(84,774)	(97,953)
Unforeseen and Contingency Expenses	(849)	(20,718)	(28,214)	(39,885)
New Product Lines Earnings EBITDA (Loss)	(3,307)	19,885	32,833	70,449
Tax Credits	-	-	-	-
Interest Expense	(28)	(689)	(939)	(1,327)
Depreciation Expense	(1,482)	(17,782)	(17,782)	(22,919)
Net New Product Lines Venture Income (Loss)	(4,817)	1,414	14,113	46,204

APPENDIX J: PRO FORMA BALANCE SHEET

New Product Lines Fiscal Years 2010-2012	Nelson County New Product Lines		
	FY 1	**FY 2**	**FY 3**
ASSETS			
Cash and Equivalents	221,688	215,019	257,961
Accounts Receivables	98,655	134,352	189,929
Inventories	813	1,705	1,606
TOTAL CURRENT ASSETS	321,156	351,076	449,496
BUILDINGS AND EQUIPMENT, net of depr.	116,049	98,267	80,485
OTHER ASSETS, net of amortization			
TOTAL ASSETS	437,205	449,343	529,982
LIABILITIES AND MEMBERS' EQUITY			
CURRENT LIABILITIES			
Accounts payable and accrued expenses			
Accrued interest	(709)	(939)	(1,327)
Current maturities of long-term debt			
TOTAL CURRENT LIABILITIES	(709)	(939)	(1,327)
LONG-TERM DEBT			
Senior debt			
Less current maturities of long-term debt			
MEMBERS' EQUITY			
Member Equity and equity equivalents	436,499	436,169	485,105
Dispersed Member Equity			
Retained earnings (losses)	1,414	14,113	46,204
TOTAL LIABILITIES AND MEMBERS' EQUITY	437,205	449,343	529,982

APPENDIX K: CASH FLOWS

Cash Flows
STARTUP AND YEAR 1

For New Product Lines

	Ongoing	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year 1
OPERATING ACTIVITIES														Annual
Net Income (Loss)	(4,817)	(21,268)	3,741	502	6,057	285	2,347	(1,978)	593	(3,280)	8,097	(2,263)	8,582	1,414
Non cash charges to net income (loss)														
Depreciation	1,482	1,482	1,482	1,482	1,482	1,482	1,482	1,482	1,482	1,482	1,482	1,482	1,482	17,782
Tax Credit	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(Increase) Decrease in current assets	(924)													0
Accounts receivable (Cider sales)	(4,044)	(9,472)	(2,441)	689	(2,549)	2,549	(689)	1,131	(2,173)	1,683	(3,431)	2,380	(3,310)	(15,632)
Inventories	(1,559)	(1,145)	(1,485)	(1,208)	(1,433)	(1,324)	(1,069)	(688)	(1,483)	(1,151)	(1,118)	(842)	(813)	(13,761)
Accrued interest	(38)	(55)	(50)	(68)	(50)	(55)	(47)	(62)	(50)	(74)	(58)	(81)	(57)	(709)
NET CASH PROVIDED BY (USED IN) OPERATING ACTIVITIES	(9,900)	(30,458)	1,246	1,398	3,506	2,937	2,023	(115)	(1,631)	(1,341)	4,972	676	5,884	(10,905)
Purchases of property and equipment	924													924
FINANCING ACTIVITIES														0
Member contributions (distributions)	95,146	0	0	0	0	0	0	0	0	0	0	0	0	0
Other contributions		55	50	68	50	55	47	62	50	74	58	81	57	709
Principal payments on long-term loans	(3,810)	(339)	(339)	(339)	(339)	(339)	(339)	(339)	(339)	(339)	(339)	(339)	(339)	(4,064)
Proceeds from long-term debt borrowings	153,588													0
NET CASH PROVIDED BY (USED IN) FINANCING ACTIVITIES	245,848	(284)	(288)	(271)	(288)	(284)	(292)	(276)	(288)	(264)	(281)	(258)	(281)	(3,355)
NET INCREASE IN CASH	235,948	(30,742)	957	1,127	3,218	2,653	1,732	(392)	(1,920)	(1,605)	4,691	418	5,602	(14,260)
CASH -beginning of period	0	235,948	205,206	206,163	207,290	210,508	213,161	214,893	214,501	212,582	210,977	215,667	216,085	235,948
CASH - end of period	235,948	205,206	206,163	207,290	210,508	213,161	214,893	214,501	212,582	210,977	215,667	216,085	221,688	221,688

Cash Flows

Year 2 and Year 3 Operations For New Product Lines

	1st quarter Jan/Feb/Mar Year2	2nd quarter Apr/May/Jun Year2	3rd quarter Jul/Aug/Sept Year2	4th quarter Oct/Nov/Dec Year2	1st quarter Jan/Feb/Mar Year 3	2nd quarter Apr/May/Jun Year 3	3rd quarter Jul/Aug/Sept Year3	4thquarter Oct/Nov/Dec Year 3	Annual Total Year 2	Annual Total Year 3
OPERATING ACTIVITIES										
Net Income (Loss)	(11373)	16092	(7692)	17086	(13047)	33208	(1936)	27979	14113	46204
Non cash charges to net income (loss)									0	0
Depreciation	4445	4445	4445	4445	5730	5730	5730	5730	17782	22919
Tax Credit	0	0	0	0	0	0	0	0	0	0
(Increase) decrease in current assets	0				54075				0	54075
Accounts receivable (Cider sales)	(16288)	(6035)	3126	(10994)	4158	(11789)	4988	(14051)	(30191)	(16695)
Inventories	(813)	(1232)	(871)	(1121)	(1705)	(1289)	(977)	(890)	(4037)	(4861)
Accrued interest	(195)	(237)	(215)	(292)	(263)	(345)	(310)	(409)	(939)	(1327)
NET CASH PROVIDED BY (USED IN) OPERATING ACTIVITIES	(24224)	13033	(1207)	9125	48947	25514	7494	18359	(3273)	100315
Purchases of property and equipment	0				(54075)				0	(54075)
FINANCING ACTIVITIES									0	0
Member contributions (distributions)	0	0	0	0	0	0	0	0	0	0
Other contributions	195	237	215	292	263	345	310	409	939	1327
Principal payments on long-term loans	(1084)	(1084)	(1084)	(1084)	(1156)	(1156)	(1156)	(1156)	(4335)	(4624)
NET CASH PROVIDED BY (USED IN) FINANCING ACTIVITIES	(889)	(847)	(869)	(792)	(54968)	(811)	(846)	(748)	(3396)	(57372)
NET INCREASE IN CASH	(25113)	12186	(2076)	8333	(6021)	24703	6648	17611	(6669)	42942
CASH -beginning of period	221688	196575	208762	206686	215019	208998	233701	240350	221688	215019
CASH - end of period	196575	208762	206686	215019	208998	233701	240350	257961	215019	257961

APPENDIX L: DEPRECIATION SCHEDULE NELSON COUNTY

DEPRECIATION			
Production Equipment Purchased Year 1			
Cost of Equipment	**$187,175**	**New Equipment, Monthly Depreciation**	**$1,482**
Equipment, useful life in years	10	**New Equipment, Annual Depreciation**	**$17,782**
Equipment, salvage value %	5%		
Equipment, salvage value	$9,359		
Production Equipment Purchased Year 3			
Cost of Equipment	**$54,075**	**New Equipment, Monthly Depreciation**	**$428**
Equipment, useful life in years	10	**New Equipment, Annual Depreciation**	**$5,137**
Equipment, salvage value %	5%		
Equipment, salvage value	$2,704		

APPENDIX M: PROJECT FINANCE

PROJECT FINANCE	
For New Product Lines	
Owner's Equity (CASH AT Ongoing)	
Contribution -- Third Party Equity as Cash	**$0**
Contribution -- Owner's Equity as Cash	**$95,146**
Initial Facility Financing	
Initial Purchase Cost	
Working Capital Loan	
Total capital cost	**$60,000**
Percent financed	100.0%
Total amount financed	$60,000
Interest rate, annual	7%
Terms, in Years	**15.0**
Annual payment	$6,588
Owner's contribution	$0
Facility Financing (Lease)	
Total lease amount	$0
Equipment and Building Financing	
Total capital cost of equipment (& building)	$187,175
Percent financed with term loan 1	50%
Percent financed with term loan 2	0.0%
Equipment Financing (Loans)	
Total purchase amount	$187,175
Percent financed	50.0%
Total amount financed with term loans	$93,588
Interest rate, annual	6.00%
Term, in years	30
Annual payment	$6,799
Owner's contribution-	$93,588
Equipment Financing (Lease)	
Total Lease amount	**$0**
Total Initial Financing	
Total amount financed through loans	$153,588
Total amount financed through leases	$0
Total owner's equity / third party equity	$95,146
TOTAL INITIAL CAPITAL BUDGET	**$248,734**
Percent of project financed	62%

APPENDIX N: REVENUE AND EXPENSE DETAILS YEAR 1

Year 1 Revenue and Expenses															
New Product Lines	Ongoing	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	First Year Monthly Avg.	First Year Annual Total
Premium	163	502	684	688	876	688	684	641	792	693	972	805	1,068	758	9,095
Everyman	186	648	907	894	1,166	894	907	832	1,052	901	1,296	1,048	1,426	998	11,972
Everyman Kegs (gallons)	100	22	20	29	26	29	20	27	23	29	29	33	31	26	317
Total 750 Ml Bottles	854	1262	1692	1726	2172	1726	1692	1609	1961	1739	2412	2018	2652	1,889	22,664
Total Gallons	169	250	335	342	430	342	335	319	389	345	478	400	526	374	4,490
Income															
Events	1,600	0	1,640	0	1,640	0	1,640	0	1,640	0	1,640	0	1,640	820	9,840
Merchandise	1,050	553	553	553	553	553	553	553	553	553	553	553	553	553	6,630
Premium	2,997	7,621	10,526	10,335	13,398	10,335	10,526	9,650	12,135	10,409	14,834	12,037	16,270	11,506	138,075
Everyman	1,844	6,368	9,092	8,785	11,690	8,786	9,092	8,176	10,548	8,852	12,989	10,302	14,288	9,914	118,966
Everyman Kegs	2,750	798	852	921	960	921	852	890	913	925	1,015	999	1,069	926	11,114
Tastings	1,890	945	945	945	945	945	945	945	945	945	945	945	945	945	11,340
Total Sales All Types	12,131	16,284	23,607	21,539	29,186	21,540	23,607	20,213	26,733	21,683	31,975	24,835	34,764	24,664	295,965
Variable Costs															
Apples Purchase Fee	0	(17,581)	0	0	0	0	0	0	(1,556)	(2,217)	0	(3,298)	0	(2,054)	(24,651)
Yeast Cost	0	(25)	(28)	(18)	(27)	(19)	(18)	(16)	(31)	(19)	(28)	(21)	(30)	(23)	(282)
Bottling Materials Cost 750 ml	0	(2,995)	(2,450)	(2,525)	(3,713)	(2,673)	(2,525)	(2,228)	(3,564)	(2,376)	(3,861)	(2,970)	(4,232)	(3,009)	(36,110)
Other Materials & lab Costs	0	(423)	(477)	(306)	(450)	(324)	(306)	(270)	(522)	(324)	(468)	(360)	(513)	(395)	(4,743)
Merchandise Costs	(525)	(276)	(276)	(276)	(276)	(276)	(276)	(276)	(276)	(276)	(276)	(276)	(276)	(276)	(3,315)
Electrical Utility Fees	(200)	(150)	(150)	(200)	(200)	(200)	(200)	(200)	(400)	(400)	(500)	(500)	(500)	(300)	(3,600)
Gasoline	0	(100)	(100)	(100)	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(138)	(1,650)
Variable Labor Contingency	(420)	(2,289)	(2,289)	(3,654)	(3,654)	(3,654)	(3,654)	(5,229)	(5,229)	(5,229)	(3,654)	(5,229)	(5,229)	(4,083)	(48,993)
State Excise Tax (Liter Tax)	(256)	(378)	(508)	(518)	(652)	(518)	(508)	(483)	(588)	(522)	(724)	(605)	(796)	(567)	(6,799)
Federal Excise Taxes	(29)	(42)	(57)	(58)	(73)	(58)	(57)	(54)	(66)	(59)	(81)	(68)	(89)	(64)	(763)
Total Variable Operations	(1,430)	(24,261)	(6,336)	(7,655)	(9,194)	(7,873)	(7,694)	(8,906)	(12,382)	(11,571)	(9,742)	(13,478)	(11,816)	(10,909)	(130,906)
Total Variable Costs	(1,430)	(24,261)	(6,336)	(7,655)	(9,194)	(7,873)	(7,694)	(8,906)	(12,382)	(11,571)	(9,742)	(13,478)	(11,816)	(10,909)	(130,906)
Variable Margin	10,702	(7,977)	17,272	13,884	19,991	13,667	15,914	11,308	14,350	10,112	22,233	11,357	22,948	13,755	165,059
Fixed Costs															

Equipment Lease & Loan Payments	(924)	(456)	(456)	(456)	(456)	(456)	(456)	(456)	(456)	(456)	(456)	(456)	(456)	(456)	(5,469)
Tools, Dies, Fixtures, tanks	(100)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(600)
Tool and Machinery Tax	0	0	0	0	0	0	(4)	0	0	0	0	0	(4)	(1)	(8)
Maintenance/Repairs	(600)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(3,600)
Keg Cleaning Cost	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(1,200)
Total Equipment Costs	(1,724)	(906)	(806)	(806)	(806)	(806)	(809)	(806)	(806)	(806)	(806)	(806)	(809)	(815)	(9,776)
Facilities															
Working Capital Loan interest	(672)	(321)	(321)	(321)	(321)	(321)	(321)	(321)	(321)	(321)	(321)	(321)	(321)	(321)	(3,854)
Rent	(5,000)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(2,500)	(30,000)
Pest Control	(40)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(240)
Computer Service	(100)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(600)
Property/Casualty Insurance	(340)	(170)	(170)	(170)	(170)	(170)	(170)	(170)	(170)	(170)	(170)	(170)	(170)	(170)	(2,040)
Property Taxes/Assessments	0	0	0	0	0	0	(32)	0	0	0	0	0	(24)	(5)	(56)
Total Facility Costs	(6,152)	(3,061)	(3,061)	(3,061)	(3,061)	(3,061)	(3,093)	(3,061)	(3,061)	(3,061)	(3,061)	(3,061)	(3,085)	(3,066)	(36,790)
Fixed Sales and Marketing															
Business License Tax	0	(30)	0	0	0	0	0	0	0	0	0	0	0	(3)	(30)
Shippers License	0	(160)	0	0	0	0	0	0	0	0	0	0	0	(13)	(160)
Promotional Costs	0	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(20,000)
Total Selling and Marketing Costs	0	(1,857)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,667)	(1,683)	(20,190)
General/Administrative															
Salaries (Mgmt./Admin. Support)	(3,333)	(3,333)	(3,333)	(3,333)	(3,333)	(3,333)	(3,333)	(3,333)	(3,333)	(3,333)	(3,333)	(3,333)	(3,333)	(3,333)	(40,000)
Fringe and Overhead (0.3)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(12,000)
Legal and Accounting	(600)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(3,600)
Telecommunications	(200)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(1,200)
Office Supplies and Miscellaneous	(150)	(75)	(75)	(75)	(75)	(75)	(75)	(75)	(75)	(75)	(75)	(75)	(75)	(75)	(900)
Total General/Administrative Costs	(5,283)	(4,808)	(4,808)	(4,808)	(4,808)	(4,808)	(4,808)	(4,808)	(4,808)	(4,808)	(4,808)	(4,808)	(4,808)	(4,808)	(57,700)
Unforeseen/Contingency															
Unforeseen Expenses (0.04)	(485)	(651)	(944)	(862)	(1,167)	(862)	(944)	(809)	(1,069)	(867)	(1,279)	(993)	(1,391)	(987)	(11,839)
Bad Debt (0.03) of Sales	(364)	(489)	(708)	(646)	(876)	(646)	(708)	(606)	(802)	(650)	(959)	(745)	(1,043)	(740)	(8,879)
Total Fixed Costs	(14,009)	(11,772)	(11,994)	(11,850)	(12,385)	(11,850)	(12,030)	(11,757)	(12,213)	(11,860)	(12,580)	(12,080)	(12,803)	(12,098)	(145,174)

New Product Lines EBITDA	(3,307)	(19,749)	5,277	2,034	7,606	1,817	3,884	(449)	2,137	(1,748)	9,653	(723)	10,145	1,657	19,885
Tax Credits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Equipment Depreciation	(1,482)	(1,482)	(1,482)	(1,482)	(1,482)	(1,482)	(1,482)	(1,482)	(1,482)	(1,482)	(1,482)	(1,482)	(1,482)	(1,482)	(17,782)
Receivables Interest (10 days @ 8.5%)	(28)	(38)	(55)	(50)	(68)	(50)	(55)	(47)	(62)	(50)	(74)	(58)	(81)	(57)	(689)
Net New Product Lines Income	(4,817)	(21,268)	3,741	502	6,057	285	2,347	(1,978)	593	(3,280)	8,097	(2,263)	8,582	118	1,414

Revenue and Expense Details Years 2 And 3

Years 2&3, Revenue and Expenses											
New Product Lines	1st quarter (Jan - Feb - Mar) Year 2	2nd quarter (Apr- May - Jun) Year 2	3rd quarter (Jul - Aug Sept) Year 2	4thquarter (Oct - Nov - Dec) Year 2	1st quarter (Jan - Feb - Mar) Year 3	2nd quarter (Apr- May - Jun) Year 3	3rd quarter (Jul - Aug Sept) Year 3	4thquarter (Oct - Nov - Dec) Year 3	quarterly averages Year 2&3	Annual Total FY 2	Annual Total Year 3
Premium	2,232	2,976	2,527	3,747	3,113	4,153	3,525	5,233	3,438	11,482	16,025
Everyman	2,873	3,933	3,262	4,975	4,022	5,506	5,481	6,964	4,627	15,042	21,973
Everyman Kegs (gallons)	86	91	86	91	121	141	141	173	116	354	576
Total 750 Ml Bottles	5539	7367	6223	9180	7747	10372	9716	13072	8,652	28,309	40,907
Total Gallons	1097	1460	1233	1819	1535	2055	1925	2590	1,714	5,609	8,105
Income											
Events	6,700	0	6,700	0	6,800	6,800	3,400	0	3,800	13,400	10,200
Merchandise	1,691	1,691	1,691	1,691	1,724	1,724	1,724	1,724	1,708	6,763	6,898
Premium	35,914	48,511	40,465	60,730	49,807	67,443	56,179	84,550	55,450	185,620	257,979
Everyman	30,794	43,002	34,971	54,388	44,009	61,457	61,169	77,730	50,940	163,155	244,365
Everyman Kegs	3,804	3,804	3,804	3,804	4,854	5,138	5,127	5,748	4,511	15,217	20,867
Tastings	4,725	4,725	4,725	4,725	5,670	5,670	5,670	5,670	5,198	18,900	22,680
Total Sales All Types	83,628	101,733	92,356	125,338	112,864	148,232	133,270	175,422	121,605	403,055	569,788
Variable Costs											
Apples Purchase Fee	(14,340)	0	(8,572)	(6,649)	(18,236)	0	(12,377)	(15,411)	(9,448)	(29,561)	(46,024)
Yeast Cost	(74)	(88)	(82)	(118)	(94)	(131)	(120)	(170)	(110)	(362)	(515)
Bottling Materials Cost 750 ml	(8,780)	(11,472)	(9,789)	(15,296)	(11,990)	(16,135)	(15,550)	(21,513)	(13,816)	(45,336)	(65,189)
Other Materials & lab Costs	(1,250)	(1,483)	(1,372)	(1,984)	(1,585)	(2,196)	(2,024)	(2,864)	(1,845)	(6,089)	(8,670)

Merchandise Costs	(871)	(871)	(871)	(871)	(915)	(915)	(915)	(915)	(893)	(3,483)	(3,659)
Electrical Utility Fees	(515)	(618)	(1,030)	(1,545)	(530)	(637)	(1,061)	(1,591)	(941)	(3,708)	(3,819)
Gasoline	(309)	(309)	(464)	(464)	(318)	(318)	(477)	(477)	(392)	(1,545)	(1,591)
Variable Labor Contingency	(9,708)	(9,708)	(17,879)	(17,879)	(21,105)	(21,105)	(29,169)	(29,169)	(19,465)	(55,175)	(100,548)
State Excise Tax (Liter Tax)	(1,711)	(2,276)	(1,923)	(2,836)	(3,301)	(3,092)	(4,160)	(2,753)	(2,757)	(8,746)	(13,306)
Federal Excise Taxes	(192)	(256)	(216)	(318)	(277)	(371)	(347)	(467)	(305)	(982)	(1,462)
Total Variable Costs	(37,750)	(27,081)	(42,197)	(47,960)	(58,351)	(44,899)	(66,201)	(75,332)	(49,971)	(154,987)	(244,783)
Variable Margin	45,878	74,652	50,160	77,378	54,513	103,334	67,068	100,090	71,634	248,068	325,005
Fixed Costs											
Equipment Lease & Loan Payments	(1,347)	(1,347)	(1,347)	(1,347)	(1,326)	(1,326)	(1,326)	(1,326)	(1,337)	(5,389)	(5,305)
Tools, Dies, Fixtures, tanks	(206)	(206)	(206)	(206)	(424)	(424)	(424)	(424)	(315)	(824)	(1,697)
Tool and Machinery Tax	0	(5)	0	(5)	0	(11)	0	(11)	(4)	(10)	(21)
Maintenance/Repairs	(1,236)	(1,236)	(1,236)	(1,236)	(1,485)	(1,485)	(1,485)	(1,485)	(1,361)	(4,944)	(5,941)
Keg Cleaning Cost	(412)	(412)	(412)	(412)	(637)	(637)	(637)	(637)	(524)	(1,648)	(2,546)
Total Equipment Costs	(2,789)	(2,794)	(2,789)	(2,794)	(3,236)	(3,246)	(3,236)	(3,246)	(3,016)	(11,167)	(12,964)
Facilities											
Working Capital Loan interest	(916)	(916)	(916)	(916)	(864)	(864)	(864)	(864)	(890)	(3,663)	(3,458)
Rent	(10,300)	(10,300)	(10,300)	(10,300)	(10,609)	(10,609)	(10,609)	(10,609)	(10,455)	(41,200)	(42,436)
Pest Control	(62)	(62)	(62)	(62)	(64)	(64)	(64)	(64)	(63)	(247)	(255)
Computer Service	(155)	(155)	(155)	(155)	(159)	(159)	(159)	(159)	(157)	(618)	(637)
Property/Casualty Insurance	(525)	(525)	(525)	(525)	(541)	(541)	(541)	(541)	(533)	(2,101)	(2,164)
Property Taxes/Assessments	0	(26)	0	(50)	0	(29)	0	(47)	(19)	(76)	(76)
Total Facility Costs	(11,957)	(11,983)	(11,957)	(12,008)	(12,237)	(12,266)	(12,237)	(12,285)	(12,116)	(47,905)	(49,026)
Fixed Sales and Marketing											
Tasting Room, Marketing and Sales Labor	(4,536)	(4,536)	(4,536)	(4,536)	(6,174)	(6,174)	(6,174)	(6,174)	(5,355)	(18,144)	(24,696)
Business License Tax	(31)	0	0	0	(32)	0	0	0	(8)	(31)	(32)
Promotional Costs	(6,250)	(6,250)	(6,250)	(6,250)	(7,500)	(7,500)	(7,500)	(7,500)	(7,500)	(25,000)	(30,000)
Total Selling and Marketing	(10,817)	(10,786)	(10,786)	(10,786)	(13,706)	(13,674)	(13,674)	(13,674)	(12,238)	(43,175)	(54,728)
General/Administrative											
Salaries (Mgmt./Admin. Support)	(15,000)	(15,000)	(15,000)	(15,000)	(17,500)	(17,500)	(17,500)	(17,500)	(16,250)	(60,000)	(70,000)
Fringe and Overhead (0.3)	(4,500)	(4,500)	(4,500)	(4,500)	(5,250)	(5,250)	(5,250)	(5,250)	(4,875)	(18,000)	(21,000)
Legal and Accounting	(973)	(973)	(973)	(973)	(996)	(996)	(996)	(996)	(984)	(3,890)	(3,983)

Telecommunications	(412)	(412)	(412)	(412)	(424)	(424)	(424)	(424)	(418)	(1,648)	(1,697)
Office Supplies and Miscellaneous	(309)	(309)	(309)	(309)	(318)	(318)	(318)	(318)	(314)	(1,236)	(1,273)
Total General/Administrative Costs	(21,194)	(21,194)	(21,194)	(21,194)	(24,488)	(24,488)	(24,488)	(24,488)	(22,841)	(84,774)	(97,953)
Unforeseen/Contingency											
Unforeseen Expenses (0.04)	(3,345)	(4,069)	(3,694)	(5,014)	(4,515)	(5,929)	(5,331)	(7,017)	(4,864)	(16,122)	(22,792)
Bad Debt (0.03) of Sales	(2,509)	(3,052)	(2,771)	(3,760)	(3,386)	(4,447)	(3,998)	(5,263)	(3,648)	(12,092)	(17,094)
Total Fixed Costs	(52,611)	(53,878)	(53,191)	(55,555)	(61,568)	(64,051)	(62,964)	(65,973)	(58,724)	(215,235)	(254,556)
New Product Lines EBITDA	(6,733)	20,774	(3,031)	21,823	(7,054)	39,283	4,104	34,117	12,910	32,833	70,449
Tax Credits (may not be applicable)	0	0	0	0	0	0	0	0	0	0	0
Equipment Depreciation	(4,445)	(4,445)	(4,445)	(4,445)	(5,730)	(5,730)	(5,730)	(5,730)	(5,088)	(17,782)	(22,919)
Building Depreciation	0	0	0	0	0	0	0	0	0	0	0
Receivables Interest (10 days @ 8.5%)	(195)	(237)	(215)	(292)	(263)	(345)	(310)	(409)	(283)	(939)	(1,327)
Net New Product Lines Income	(11,373)	16,092	(7,692)	17,086	(13,047)	33,208	(1,936)	27,979	7,540	14,113	46,204

APPENDIX O: REVENUE AND EXPENSE DETAIL PERCENTAGES

	Percent of Revenue FY 1	Revenue/ (Cost) per sold 750 ml bottle	Percent of Revenue FY 2	Revenue/ (Cost) per sold 750 ml bottle FY 2	Percent of Revenue FY 3	Revenue/ (Cost) per sold 750 ml bottle FY 3
Income						
Events	3.32%	0.43	3.32%	2.39	1.79%	1.26
Merchandise	2.24%	0.29	1.68%	1.21	1.21%	0.85
Premium	46.65%	6.09	46.05%	33.09	45.28%	31.83
Everyman	40.20%	5.25	40.48%	29.09	42.89%	30.15
Everyman Kegs	3.76%	0.49	3.78%	2.71	3.66%	2.57
Tastings	3.83%	0.50	4.69%	3.37	3.98%	2.80
Total Sales All Types	**100.00%**	**13.06**	**100.00%**	**71.86**	**100.00%**	**70.30**
Variable Costs						
Apples Purchase Fee	(8.33%)	(1.09)	(7.33%)	(5.27)	(8.08%)	(5.68)
Yeast Cost	(0.10%)	(0.01)	(0.09%)	(0.06)	(0.09%)	(0.06)
Bottling Materials Cost 750 ml	(12.20%)	(1.59)	(11.25%)	(8.08)	(11.44%)	(8.04)
Other Materials & lab Costs	(1.60%)	(0.21)	(1.51%)	(1.09)	(1.52%)	(1.07)
Merchandise Costs	(1.12%)	(0.15)	(0.86%)	(0.62)	(0.64%)	(0.45)
Electrical Utility Fees	(1.22%)	(0.16)	(0.92%)	(0.66)	(0.67%)	(0.47)
Gasoline	(0.56%)	(0.07)	(0.38%)	(0.28)	(0.28%)	(0.20)
Variable Labor Contingency	(16.55%)	(2.16)	(13.69%)	(9.84)	(17.65%)	(12.41)
State Excise Tax (Liter Tax)	(2.30%)	(0.30)	(2.17%)	(1.56)	(2.34%)	(1.64)
Federal Excise Taxes	(0.26%)	(0.03)	(0.24%)	(0.18)	(0.26%)	(0.18)
Total Variable Operations	**(44.23%)**	**(5.78)**	**(38.45%)**	**(27.63)**	**(42.96%)**	**(30.20)**
Variable Marketing Costs	0.00%	0.00	0.00%	0.00	0.00%	0.00
Total Variable Marketing	**0.00%**	**0.00**	**0.00%**	**0.00**	**0.00%**	**0.00**
Total Variable Costs	**(44.23%)**	**(5.78)**	**(38.45%)**	**(27.63)**	**(42.96%)**	**(30.20)**
Variable Margin	**55.77%**	**7.28**	**61.55%**	**44.23**	**57.04%**	**40.10**
Fixed Costs						
Processing Machinery (inc mat. hdlg)						
Equipment Lease & Loan Payments	(1.85%)	(0.24)	(1.34%)	(0.96)	(0.93%)	(0.65)
Tools, Dies, Fixtures, tanks	(0.20%)	(0.03)	(0.20%)	(0.15)	(0.30%)	(0.21)
Tool and Machinery Tax	(0.00%)	(0.00)	(0.00%)	(0.00)	(0.00%)	(0.00)
Maintenance/Repairs	(1.22%)	(0.16)	(1.23%)	(0.88)	(1.04%)	(0.73)
Keg Cleaning Cost	(0.41%)	(0.05)	(0.41%)	(0.29)	(0.45%)	(0.31)
Total Equipment Costs	**(3.30%)**	**(0.43)**	**(2.77%)**	**(1.99)**	**(2.28%)**	**(1.60)**
Facilities						
Working Capital Loan interest	(1.30%)	(0.17)	(0.91%)	(0.65)	(0.61%)	(0.43)
Rent	(10.14%)	(1.32)	(10.22%)	(7.35)	(7.45%)	(5.24)
Pest Control	(0.08%)	(0.01)	(0.06%)	(0.04)	(0.04%)	(0.03)
Computer Service	(0.20%)	(0.03)	(0.15%)	(0.11)	(0.11%)	(0.08)
Property/Casualty Insurance	(0.69%)	(0.09)	(0.52%)	(0)	(0)	(0)
Property Taxes/Assessments	(0.02%)	(0.00)	(0.02%)	(0.01)	(0.01%)	(0.01)

Total Facility Costs	**(12.43%)**	**(1.62)**	**(11.89%)**	**(8.54)**	**(8.60%)**	**(6.05)**
Fixed Sales and Marketing						
Tasting Room, Marketing and Sales Labor	0.00%	0.00	(4.50%)	(3.23)	(4.33%)	(3.05)
Business License Tax	(0.01%)	(0.00)	(0.01%)	(0.01)	(0.01%)	(0.00)
Promotional Costs	(6.76%)	(0.88)	(6.20%)	(4.46)	(5.27%)	(3.70)
Total Selling and Marketing	**(6.82%)**	**(0.89)**	**(10.71%)**	**(7.70)**	**(9.60%)**	**(6.75)**
General/Administrative						
Salaries (Mgmt./Admin. Support)	(13.52%)	(1.76)	(14.89%)	(10.70)	(12.29%)	(8.64)
Fringe and Overhead (0.3)	(4.05%)	(0.53)	(4.47%)	(3.21)	(3.69%)	(2.59)
Legal and Accounting	(1.22%)	(0.16)	(0.97%)	(0.69)	(0.70%)	(0.49)
Telecommunications	(0.41%)	(0.05)	(0.41%)	(0.29)	(0.30%)	(0.21)
Office Supplies and Miscellaneous	(0.30%)	(0.04)	(0.31%)	(0.22)	(0.22%)	(0.16)
Total General/Administrative Costs	**(19.50%)**	**(2.55)**	**(21.03%)**	**(15.11)**	**(17.19%)**	**(12.09)**
Unforeseen/Contingency						
Unforeseen Expenses (0.04)	(4.00%)	(0.52)	(4.00%)	(2.87)	(4.00%)	(2.81)
Bad Debt (0.03) of Sales	(3.00%)	(0.39)	(3.00%)	(2.16)	(3.00%)	(2.11)
Total Fixed Costs	**(49.05%)**	**(6.41)**	**(53.40%)**	**(38.37)**	**(44.68%)**	**(31.41)**
New Product Lines EBITDA	**6.72%**	**0.88**	**8.15%**	**5.85**	**12.36%**	**8.69**
Tax Credits (may not be applicable)	0.00%	0.00	0.00%	0.00	0.00%	0.00
Depreciation						
Equipment Depreciation	(6.01%)	(0.78)	(4.41%)	(3.17)	(4.02%)	(2.83)
Building Depreciation	0.00%	0.00	0.00%	0.00	0.00%	0.00
Receivables Interest (10 days @ 8.5%)	(0.23%)	(0.03)	(0.23%)	(0.17)	(0.23%)	(0.16)
Net New Product Lines Income	**0.48%**	**0.06**	**3.50%**	**2.52**	**8.11%**	**5.70**

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APPENDIX Q: DESCRIPTION OF CONSULTANTS

Virginia FAIRS, the Virginia Foundation for Agriculture, Innovation and Rural Sustainability, a 501 (c) (5) corporation organized in Virginia, as a business Development Center. With the assistance and support from partners such as the Virginia Farm Bureau Federation (VFBF), the Virginia Department of Agriculture and Consumer Services (VDACS), the Virginia Department of Business Assistance (VDBA) and Virginia Cooperative Extension (VCE), Virginia FAIRS intends to offer assistance to individuals, Cooperatives, small businesses and other similar entities in rural areas to enable and assist cooperative and business development.

The mission of Virginia Fairs is to assist rural Virginians in developing and advancing their agricultural, economic and social interests to enhance their quality of life. The main goals of the Center that is being created will be to facilitate and coordinate technical and financial assistance to provide traditional and innovative solutions that will allow farmers in Virginia to:

1) explore and develop opportunities using existing production and market resources and risk management techniques;
2) transition from traditional production and marketing into more financially rewarding agricultural enterprises;
3) develop value-added and high-value agricultural product and enhanced market opportunities;
4) address challenges facing farmer's production and marketing resources;
5) address issues affecting the sustainability of rural Virginia;
6) establish a centralized resource for farmers to easily access cooperative development and value-added information; and,
7) Better utilize and coordinate the wide-ranging expertise available in Virginia and as such better facilitate and enhance current and future efforts and programs in these areas.

Christopher I. Cook, functions as the Center's Executive Director. He is as an agricultural enterprise development advisor with a broad range of planning, business creation and development skills, as well as strategic expertise. Mr. Cook has twenty five years agricultural experience including organizing and developing farmer-owned start-up businesses, with a strong background in facilitating agricultural value added entitles through strategic planning. He has completed a feasibility study looking at the viability of ethanol production in Virginia His work experience covers two continents. He farmed in the United Kingdom and was Managing Director of a 1,000-acre farm producing beef and small grains. His education includes the Certified Economic Development Financial Professional from the National Development Council, KY a Masters Business Administration from the College of William & Mary and a. BS in Agricultural Education from London City & Guilds, United Kingdom.

Services Offered:

Feasibility Studies - We evaluate your proposed project to help to determine whether or not it could be feasible for your organization to continue.

Business Planning - We assist your project with the creation and implementation of a business plan.

Technical Assistance - We help you prevent and overcome difficulties you encounter throughout development stages.

Grant Facilitation - We help through the entire grant process -- from identification of funding sources, through development of the grant application, to grant management.

Board Training - Our specialists provide direction regarding the selection, governance, and training of board members to help advance your business.

Business Structure - We assist your organization to determine which structural forms best fit your business needs.

Market Identification - We work with you to help identify target markets and focus your marketing plan to reach those buyers.

Survey Preparation - We design, execute, compile and analyze membership and marketing surveys for your organization.

Management Consulting - Our specialists assist your team with project implementation.

James Matson is the founder and principal of Matson Consulting, an agribusiness consulting firm. Mr. Matson has twenty years of experience in marketing, developing, researching, writing, and teaching for government, private, and non-profit organizations. He has assisted more than 400 rural businesses during the span of his career, including authoring over 125 feasibility studies and the creation of 100-plus business and marketing plans. He has authored more than 20 works for scholarly, industry, and popular publications including USDA's *"A Cooperative Feasibility Study Guide"*. Mr. Matson has a long history of creating marketing solutions through the creation of business and marketing plans that have resulted in millions of dollars of sales.

Mr. Matson has worked on agricultural business development throughout the US and in 19 countries on four continents. He has a M.S. degree in Agricultural Economics from the University of California, Davis and a B.S degree in Agricultural Business Management and B.A. degrees in Economics and Spanish from North Carolina State University.