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# FEASIBILITY STUDY

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## NORTHAMPTON COUNTY FOOD HUB PROJECT

Garysburg, North Carolina

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## EXECUTIVE SUMMARY

This feasibility study considers the issues associated with transforming a vacant elementary school in the Town of Garysburg, North Carolina, into a viable food aggregation and processing facility with an on-site farmers' market (hereafter referred to as a food hub.) This study focuses on the first two project phases: implementing the farmers' market and organizing farmers for vegetable production, aggregation, and distribution. Additional project phases (a grocery cooperative and fully operational processing and distribution facilities) are not considered in this study. The major findings of this study indicate that the project has the potential to significantly impact the economy, agriculture, and communities of the northeastern region of the state, and the study describes key challenges to be addressed.

### Phased Implementation.

1. Implementing the farmers' market and beginning aggregation activities (2-4 years):
  - transition farmers to vegetables and provide education and training;
  - assist individual farms with GAP certification;
  - build visibility and demand for community services through the farmers' market;
  - utilize facility as an aggregation center, distributing produce brought from GAP farms; and
  - identify and capture market demand in northeastern North Carolina and southeastern Virginia.
2. Organizing farmers for vegetable production, packing, processing, and distribution (1-4 years):
  - use initial profits and grant funding to gradually add packing and processing capabilities;
  - expand cool storage, cold storage and flash-freezing capabilities;
  - implement long-term improvements, such as assisting farmers with year-round growing techniques and equipment and expanding the retail and community elements of the project.

**Regulatory Challenges and Facility Design.** Key food safety regulations from USDA, FDA, and NCDA are highlighted, as well as pending legislation for the Food Safety Modernization Act (FSMA). Using expert guidance, the food hub can include those standards in its facility design.

**Organizational Structure.** It is recommended that the Town retain ownership of the food hub's physical infrastructure and property for at least the first three years. A hybrid cooperative model, in which farmers are paid directly by a nonprofit designed to manage the facility is recommended, with a commission for operational costs. Models of similar North Carolina food hubs are included.

**2015 Heritage Market.** The farmers' market should be implemented in a manner consistent with the heritage and culture of the region. Recommendations are provided for implementing the market and for improvements during subsequent seasons.

**Supply Evaluation and Financial Analysis.** An overwhelming majority of farmers in the region grow row crops, such as cotton, corn, and soybeans. The supply evaluation makes recommendations for phasing in the transition to vegetables through farmer education and training. We also identify high-value vegetable crops and analyze three to demonstrate volume thresholds. Various commission structures are considered and a minimum 25% commission rate is recommended.

This study concludes with recommendations for additional assessment work and a business plan. An appendix provides references, and other resources are included as hyperlinks throughout the document.

## INTRODUCTION AND PROJECT OVERVIEW

The Town of Garysburg owns a former elementary school building in Northampton County. The site consists of fourteen acres and the school building, part of which is being used as a community library, with the other buildings consisting of classrooms, gymnasium, and cafeteria. The building has been primarily vacant since 2009, and was built in the 1950s.



The Town wishes to develop the school site into an aggregation, processing, and distribution center for vegetables grown in the region. The facility's operator (a nonprofit or private entity) would also provide farmer organization and education, collaborative marketing, and farmer education services.

The Town and County are located in a USDA-designated food desert, and in addition to providing economic growth opportunities, the project meets a critical need for healthy food access and encompasses community needs such as library access, retail spaces for value-added products and supplemental income industries, and other shared facilities.

Four project phases are expected to occur:

1. **Immediate Food Access:** The Town will host a farmers' market, or heritage market, in the old school gym in the spring of 2015.
2. **Evaluation and Organization of Farm Supply:** Capacity and transition issues will be researched in the fall of 2014, and meetings with farmers will take place in 2015.
3. **Long-Term Food Access:** The establishment of a grocery cooperative located on-site will be researched and developed in late 2015.
4. **Aggregation, Processing, and Distribution Site:** The final element of the project is a fully operational processing, packing, aggregation, and distribution facility, co-owned by the Town, private partners, and farmers.

This feasibility study includes research and recommendations for the first two phases of the project, the market and the evaluation and organization of farm supply. In addition, this study includes research and recommendations for the organizational structure of the project; a limited financial and market synopsis, including a list of potential grant funders; and information about current food safety regulations that impact the way renovations are designed.

The Client's emphasis on innovative projects bringing agricultural development and food access opportunities to underserved areas has guided this research. All models and best practices are included as hyperlinks in the footnotes, with a full reference section included.

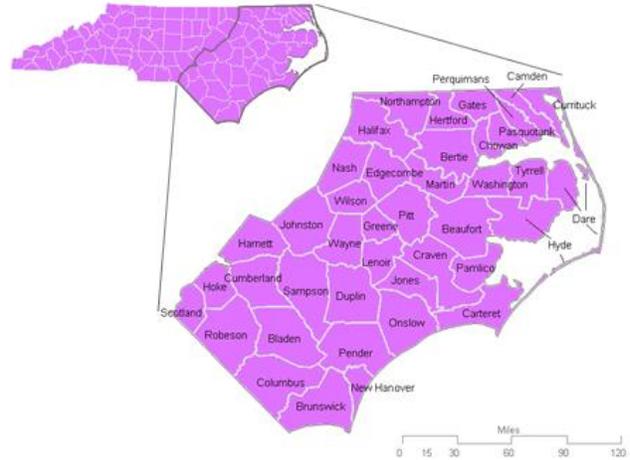
## THE TOWN OF GARYSBURG & NORTHAMPTON COUNTY

The Town of Garysburg has a population of just over 1,000 people, and is located in Northampton County, which has a population of just over 22,000 people. The county is located in the Northeast region of North Carolina, along the I-95 corridor and bordering the State of Virginia.

The County is a member of the Upper Coastal Plain Council of Governments. Other municipalities in the County include Conway, Jackson, Gaston, Lasker, Rich Square, Seaboard, Severn, and Woodland.

The County is bordered by Greenville, Brunswick and Southampton counties in Virginia and by Bertie, Hertford, Halifax, and

Warren counties in North Carolina. Northampton County is located within a two-hour drive to Raleigh and a 1 ½ hour drive to Chesapeake and Norfolk, VA.



According to 2010 Census data, the population in the Town of Garysburg is 96% African-American, 2% Caucasian, under 1% Native American, and 1% other races. Northampton County's population is 58% African-American, 39% Caucasian, 1.4% Hispanic or Latino, less than 1% Native American and less than 1% other races.

In 2010, residents in the Town of Garysburg had a household median income of \$22,604 and a per capita income of \$14,172. The poverty rate was over 28%, and rose to 35% among children under 18.

In 2010, Northampton County had a household median income of \$26,652 and a per capita income of \$15,413. The poverty rate was 21%, and rose to nearly 30% among children under 18.

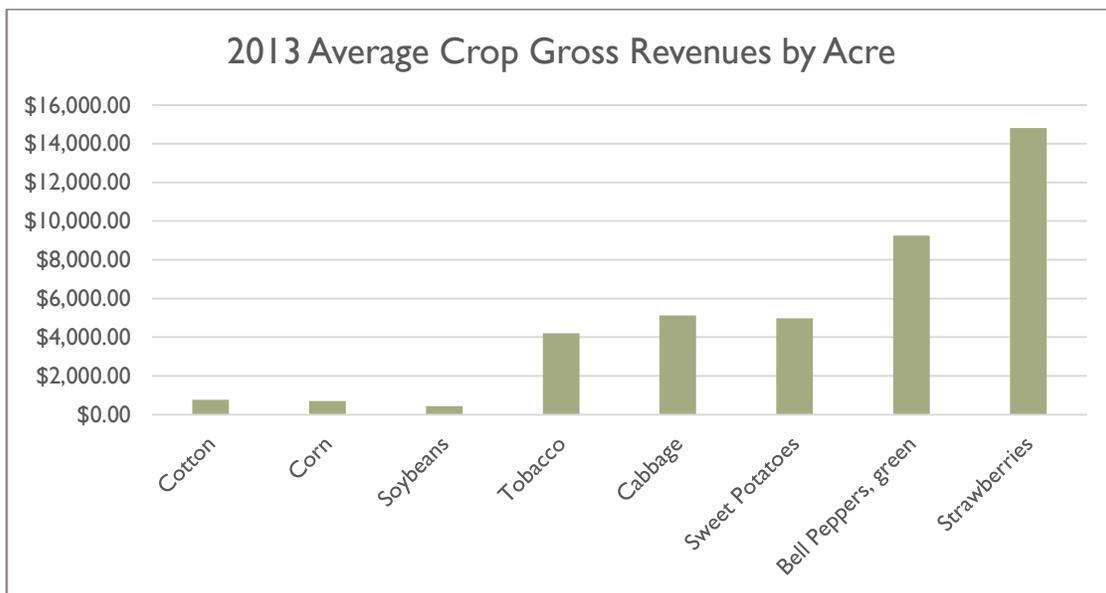
### Agricultural Demographics

The total production of the 340 farms in Northampton County rank 2nd in the state for production of cotton; 8th in the state for production of peanuts; and 13th in the state for soybeans. This places Northampton County high on the list of row crop producers in the state. However, cash receipts from livestock and crops totaled only \$142,046,000 in 2012, with an additional \$10,375,000 in government payments. Of that livestock, about 2/3 was in broilers and hogs, with no data available on turkeys or eggs. Cattle, calves, and other livestock made up only about 1/10 of that amount. For vegetables, fruits, nuts,

and berries and other field crops, the county only produced about \$1,232,000 in receipts – less than 1% of what the County produced in livestock and commodity crops.

About 95% of total crops grown were cotton / cottonseed and soybeans, with another 3% in corn. Cotton, soybeans, and corn are predominately low-value and low-labor-intensive crops, and generate gross revenues of typically less than \$700 per acre. However, their primary benefit is that they provide relatively consistent income through sale to regional cotton gins and other processors.

In contrast, vegetables tend to have a higher profit per acre, but are more labor-intensive, with higher investments up front. Vegetable crops provide an opportunity for crop diversification, but they will also require significant training and education for farmers, as well as soil regeneration, risk mitigation, and workforce development.



2013 Crop Gross Revenues per Acre in North Carolina, Selected Varietals, USDA National Statistics Services.

As an example, in the past year in North Carolina, green bell peppers have grossed nearly \$10,000 per acre, strawberries nearly \$15,000 per acre, and cabbage nearly \$5,000 per acre – compared to cotton’s \$700 per acre.

Most Northampton County farmers have not yet taken advantage of this opportunity for profit growth. The lack of crop diversification means that farm value per acre has only increased by about \$100 per acre from 2008 to 2013. During the same time frame, the overall amount of land and farms has decreased slightly. But possibly due to consolidation of smaller farms, the average size (and production

capacity) has increased to 458 acres in 2012. That farm size is a tremendous asset, especially compared to the state average of 170 acres and the national average of 421 acres.

Also, because of this farm size, Northampton County farmers have a higher average market value than most other farmers in the state, averaging \$1.15 million in land and buildings and another \$176,000 in equipment, with only \$247,212 in average total farm production expense. This further supports the unique opportunities in Northampton County for increased economic development around vegetable production.

Another asset for Northampton County farmers is the average farmer age, which was 57 in 2012. That average age is about seven years younger than the North Carolina average, and means that there is time to implement vegetable production under current ownership and shape succession planning around vegetable production for future farming generations.<sup>1</sup>

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<sup>1</sup> <http://www.ncagr.gov/stats/>

## ORGANIZATIONAL STRUCTURE AND PHASED IMPLEMENTATION

The organizational structure of a food hub has been shown to be an important foundational element of success.<sup>2</sup> There are three primary areas of consideration when deciding what formal structure is best for any collaborative agriculture project:

- Ensuring equitable distribution and pay for farmers;
- Securing ample capital for operations, insurance, and staffing; and
- Creating simplicity and efficiency in management and operations.

Typically, an LLC or nonprofit structure provides the maximum legal protection and most efficient structure for profit sharing.<sup>3</sup> The project group should carefully consider each of these issues when deciding on the most appropriate organizational structure. In the following section, the food hub model is explored from a variety of perspectives to give an overview of the facility's potential.

Once an overall business structure has been decided, the organization should set the following:

- commission rates (paid by farmers to food hub organization), if any;
- methods for organization of farmers, which should include cooperative crop management and production decisions; and
- liability, risk, and quality assurance standards and how those standards will be met.

### Definitions & Background of Food Hub Projects

According to the United States Department of Agriculture (USDA), “food hubs are the emerging infrastructure for the aggregation, processing and distribution of local foods.”

These hubs, according to traditional definitions, consist of one or more warehouses in central locations which include warehousing, packaging, and distribution facilities. These facilities often also include retail vending space, community kitchens, and processing space and equipment.

Data on food hub performance has only recently been tracked by national organizations in the United States. The Wallace Center at Winrock International and the Michigan State University Center for Regional Food Systems began collecting data on national food hub programs in 2013. In their first year survey, they found that more than 62% of food hubs began in the last five years, and 31% of existing

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<sup>2</sup> Mills, Smithson. “Economic Viability of Food Hubs.” Presented at NGFN Food Hub Conference, April 2014.

<sup>3</sup> Mills, Smithson. 2-3.

food hubs had \$1 million or more in revenues. Of those, the majority were supporting their businesses with little or no grant assistance.

However, survey findings also noted that most successful food hubs are for-profit operations that have been in operation for more than 10 years and work with a relatively large number of producers. The top issues identified in the survey, even for successful hubs, were implementing and funding trucking and distribution methods; managing growth; and appropriately staffing and funding operations.

### Defining Characteristics of a Regional Food Hub

Regional food hubs are defined less by a particular business or legal structure, and more by how their functions and outcomes affect producers and the wider communities they serve. Defining characteristics of a regional food hub include:

- **Carries out or coordinates the aggregation, distribution, and marketing of primarily locally/regionally produced foods from multiple producers to multiple markets.**
- **Considers producers as valued business partners** instead of interchangeable suppliers and is committed to buying from small to mid-sized local producers whenever possible.
- **Works closely with producers**, particularly small-scale operations, to ensure they can meet buyer requirements by either providing technical assistance or findings partners that can provide this technical assistance.
- **Uses product differentiation strategies to ensure that producers get a good price for their products.** Examples of product differentiation strategies include identity preservation (knowing who produced it and where it comes from), group branding, specialty product attributes (such as heirloom or unusual varieties), and sustainable production practices (such as certified organic, minimum pesticides, or "naturally" grown or raised).
- **Aims to be financially viable while also having positive economic, social, and environmental impacts within their communities**, as demonstrated by carrying out certain production, community, or environmental services and activities.

USDA Food Hub Resource Guide, 2012.

The USDA has found that food hubs are most effective when working with institutional and retail buyers when they are able to reduce transaction costs by providing a single point of purchase for source identified products from local and regional producers. In addition, these projects have the most impact on small- to mid-sized farms when they partner with regional food distributors and their national clients, offering regional products to a broader market than they may otherwise be able to access.

*Triple-Bottom-Line Benefits.* Food hubs have the potential to provide significant positive impact in communities, particularly those that may be economically and socially disadvantaged. Economic impacts arise from the unique business models developed in these food hubs, which typically respond to local and regional supplies and market demands for regionally-grown product. Social benefits arise from the development support that most food hubs provide to farmers and ranchers, and also from the community-building efforts that take place in disadvantaged food hub locations. Environmental impacts

can also result from improvements to the environmental conditions in which vegetable crops, as opposed to row crops, are grown.

The Garysburg proposal is unique because the project encompasses a number of goals outside the food hub itself, including farmer education, community building, food access, and economic development. For this reason, it may be best to name the project something that reflects the unique nature of the proposed center, such as the Garysburg Agricultural Center or the Garysburg Food Center.

### Overview of Organizational Options

When considering the best organizational structure for a food hub, it’s important to consider the question from both a legal perspective and an operational perspective. These concerns can include how to structure management, oversight, and governance; compliance with local, state, and federal laws; tax exemptions needed for initial funding; distribution of profit; and intellectual property created through marketing or branding initiatives.

Professor Stephen Virgil at the Wake Forest School of Law has [compiled a useful presentation on the various legal structures available to food hubs](#).<sup>4</sup> In it, he provides this overview of legal structures:

	Organization	Ownership	Profit Distribution	Governance	Activities	Tax Treatment
<b>For-profit Corporation</b>	Filing of Articles with State	Owned by shareholder	Profits Distributed based on ownership	Board of Directors	Any lawful activity	Taxed at shareholder level – Subchapt S
<b>For-profit LLC</b>	Filing of Articles with Sate	Owned by Members	Profits distributed based on agreement of members	Members; Managers; Board of Directors	Any lawful activity	Taxed at member level – as a partnership
<b>Producers Marketing Cooperative</b>	Organized by filing Articles of Association	Majority owned by producers	Distribution based on ‘patronage’	Governed by members through election	Restricted to marketing products from members	Tax exempt[ members taxed
<b>Nonprofit 501(c)(3) Corporation</b>	Organized by filing Articles of Incorporation	Not owned	No profits	Board of Directors	Only tax exempt purposes	Not taxed
<b>Nonprofit LLC</b>	Articles of Organization	Must be owned by 501(c)(3)	Profits, if any, go to 501(c)(3)	Appointed by the 501(c)(3)	Only activities related to exempt purpose	Taxed on unrelated income

<sup>4</sup> <http://www.ncgrowingtogether.org/news/nc-growing-together-and-partners-host-over-50-participants-at-nc-food-hub-info-exchange/>

The structure chosen will depend on what types of operations are being performed, especially whether sales are being conducted from farmers and to distributors, and on what legal protections the Town desires to maintain. Food hubs in the United States have typically organized in one of two ways if they are not fully owned by a government entity:

- *Private Company Models.* In this scenario, a private company, often an LLC or a cooperative, fully owns and operates the aggregation, packing, and distribution facilities. Typically, farmers are paid directly at a wholesale price by the private company, which then makes its profit from reselling at a slightly higher price to wholesale purchasers such as grocery chains, restaurants, and other large or institutional buyers.
- *Nonprofit Models.* These models claim a charitable tax exemption (501c3, 501c4, or 501c6 are the most prevalent). Typically, the nonprofit is assisted in development by the involved local government, and manages the facility's daily operations. A nonprofit board provides oversight and hiring supervision. The Appalachian Sustainable Agriculture Project organized a [study of the economic viability of non-profit food hubs](#) in 2012.<sup>5</sup>

Consultation with the Town's legal advisor is highly recommended during the organizational phases and at all points of contracting with the private entity partner.

## Recommendations for Organizational Structure

Because of the unique situation in Garysburg, the Town already has a significant real interest in the successful development of the unused property. This context is supplemented by the presence of a private group that is interested in being a project partner. This unique public-private partnership has the potential to provide significant benefits to the region while keeping the farmers and the public interest at the forefront. To accomplish this, it is suggested that the Town operate a *Nonprofit Model* in which the Town (acting in its nonprofit capacity) retains all property ownership. The private entity, if formed, should consider incorporating as an LLC and acting as a contracted operator of the facility, at least during the initial five years of operation, with the intention of transitioning to a Private Model if appropriate after five-year evaluations.

Under a Nonprofit Model, the Town should carefully consider and include the following items in any contract with the private company operator:

- a standard and fair price agreement to protect farmer investments;
- annual review and audit procedures to ensure responsible use of public facilities;

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<sup>5</sup> [http://www.wcu.edu/WebFiles/asap-summary-of-economic-viability-non-profit-food-hubs\(1\).pdf](http://www.wcu.edu/WebFiles/asap-summary-of-economic-viability-non-profit-food-hubs(1).pdf)

- a lease agreement that specifies the private company's uses of the facility, in alignment with North Carolina law, and sets either a monthly amount or percentage to be paid to the town in rent;
- clear proof of liability and risk coverage by all entities, including the farmers; and
- a clear financial structure that outlines the methods by which the private company, the farmers, and the town will all benefit from this arrangement (see sections VII and VIII).

The Town and its private sector partners can transition the project into an LLC after introductory project development, should they choose to do so.

The Town's ownership can be temporary, as in an incentivized lease agreement or short-term contract, if the private party is interested in purchasing the building for permanent use. However, we recommend retaining Town ownership during the first few years of operation, which may have significant benefits in:

- providing more stability and accountability to the project;
- assisting in securing grant funding; and
- ensuring strong fiscal sustainability and protections for farmers before any transfer of property takes place.

Further recommendations for financial structures are provided in the Supply Evaluation and Financial Analysis section of this document.

## Other Food Hub Models

Wholesome Wave, a national organization promoting local food system development, has created a [Structuring Guide](#) that walks readers through the various business structures available to food hubs.<sup>6</sup> In addition, two other North Carolina business models offer comparative lessons for selecting an organizational structure: Eastern Carolina Organics in Durham, NC and Pilot Mountain Pride in Surry County, NC.

[Eastern Carolina Organics](#) markets and distributes organic farm products.<sup>7</sup> ECO got its start in 2004 as a nonprofit, and transitioned to a private LLC structure in 2005. In their first year, they had \$240,000 in sales, and reached \$3.8 million in 2013, when they worked with over 100 farmers and had 13 full-time employees. ECO utilizes a 20% commission structure.

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<sup>6</sup> [http://www.wholesomewave.org/wp-content/uploads/2014/10/CLF\\_StructuringGuide\\_FINAL.pdf](http://www.wholesomewave.org/wp-content/uploads/2014/10/CLF_StructuringGuide_FINAL.pdf)

<sup>7</sup> <http://www.easterncarolinaorganics.com/>

Pilot Mountain Pride started in 2004 with the creation of the Pilot Agricultural Center, sponsored by Surry County.<sup>8</sup> PMP aggregates produce from GAP-certified farms, relying on 60 farms growing between ¼ acre to 40 acres of produce to provide wholesale products to grocers and distributors. Much like the Garysburg project, PMP is built on a partnership with the local government and is aiming for financial self-sufficiency in the next five years. PMP is a nonprofit model created in partnership with Surry County Economic Development.

**It is highly recommended that the project team contact other successful food hubs to receive guidance and advice from others.** In addition to ECO, other food hubs in North Carolina which can be individually contacted for references and feedback include SENC Foods Processing and Distribution in Pender County; TRACTOR in Yancey County; Firsthand Foods in Chatham County; Farm Fresh Ventures Cooperative in Anson County; Madison Family Farms in Madison County; and Polk Fresh Foods in Polk County.<sup>9</sup>

### Phased Implementation

It is highly recommended that the organizational structure and financial projections include a transitional period (years 1-3) during which farmers will transition land into vegetable production. Any financial analysis should also anticipate a reserve fund that helps allow for impacts from weather, pests, diseases, and other factors beyond the control of the farmers or the food hub.

This staged approach also allows for more time to build up relationships with wholesale purchasers and distributors, ensuring strong market demand once the facility reaches full capacity.



A phased organizational structure should implement four phases: basic organization; aggregation and distribution; processing; and long-term improvements such as year-round growing systems, flash freezing systems, and the purchase of facility-owned cold storage trucks for distribution.

<sup>8</sup> <http://pilotmountainpride.com/index.php/new-home>

<sup>99</sup> See Appendices for a full list of food hubs in North Carolina, from the NC Growing Together Project.

**Phase 1** should incorporate the organization of farmers into vegetable growers; seasonal and price-point-based selection of crops; and the facility rehabilitation, which should result in successful compliance with all state and federal food safety laws. The facility should be opened for use by the farmers' market and retail vendors as soon as the initial work is completed, to establish that revenue stream for future project phases.

**Phase 2** involves the opening of the aggregation facility, which will collect and store produce from multiple farms in order to meet large orders for wholesale customers. Prior to opening the facility for aggregation, all distribution channels should be reviewed and selected for profit and compatibility.

- *An aggregation center that is not certified by NCDA and USDA cannot accept produce from any farmer that does not hold GAP (Good Agricultural Practices) Certification.*
- *Once the center is certified for food handling, it can usually accept produce from non-GAP-certified farms.*
- *Typically, aggregation centers only provide cooling, cold storage, marketing, and distribution services – not washing and packing services.<sup>10</sup>*

**Phase 3** will likely come after the initial transition years of Phases 1 and 2, and involves the opening of a processing facility on-site that can wash, process, package, and store produce that has been modified from its original farm-grown state for distribution to larger markets.

**Phase 4** could include long-term goals, such as the addition of flash-freezing units; technologies and infrastructure to help farmers transition to year-round growing; diversification of crop offerings; new distribution systems; the addition of farmers beyond the region; and ventures into new markets. Each of these expansions of the food hub's role should be evaluated prior to implementation, to ensure that the project retains ease of operations and adequate profit margins.

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<sup>10</sup> <http://www.ncagr.gov/markets/NCgradesvc/>

## REGULATORY ISSUES

Food hub processing is regulated by local, state, and federal laws, which are enforced by the Northampton County Department of Public Health, the North Carolina Department of Agriculture (NCDA), and the United States Department of Agriculture (USDA). Additional regulations will be enforced by the Northampton County Planning Department and the Town of Garysburg to ensure that the facility is in compliance with all zoning and building inspection codes. Business licensing and registration must also occur with appropriate federal, state, and local agencies.

For food safety purposes, the key element to remember is *recordkeeping*. Stringent new food safety laws are currently being considered to address serious public health concerns about bacteria and contamination in the food supply. At every level, detailed recordkeeping will be a critical component of daily operations of any responsible food hub.

### Overview of Federal, State and Local Food Safety Laws

At the federal level, most fruit and vegetable producers choose to utilize the USDA Grading and Certification Process as a tool for marketing their products to wholesalers, although the only required inspection by USDA is for meat, poultry, and eggs. Full details on grading specifications can be found [here](#).<sup>11</sup> North Carolina has adopted federal requirements by reference in its own Food Law, and also has adopted grading standards for certain produce, such as apples, peaches, cucumbers, and pecans, which are subject to inspection by NCDA. While fresh, unprocessed fruits and vegetables can be sold in intrastate commerce without inspection, NCDA will commence inspections when the facility moves into processing those products.

In addition, although it is not required for fresh products, USDA encourages an HACCP (Hazard Analysis Critical Control Point) plan, which is a food safety management system used in the food processing industry. This plan assesses the risks of food contamination and helps provide records in the event of a food safety crisis.

It is highly recommended that the project team track the progress of regulations currently being written as part of the Food Safety Modernization Act (FSMA) enacted in 2011. Public comment on FSMA is wrapping up, and the new regulations are expected to impact a wide range of farms and food processing facilities. Interim guidance is [provided here by USDA](#).<sup>12</sup>

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<sup>11</sup> <http://www.ams.usda.gov/AMSv1.0/>

<sup>12</sup> <http://www.fda.gov/Food/GuidanceRegulation/FSMA/>

The federal Food and Drug Administration (FDA) places requirements on food processing facilities pursuant to the Federal Food, Drug and Cosmetic Act (Title 21 U.S.C. 301 et seq.; 52 Stat. 1040 et seq.). Beginning in 2003, most food processing facilities were required to complete annual registration with the FDA, which requires that “facilities engaged in manufacturing, processing, packing, or holding food for consumption in the United States submit additional registration information to FDA, including an assurance that FDA will be permitted to inspect the facility at the times and in the manner permitted by the FD&C Act.”<sup>13</sup> This requirement assists FDA in tracking down sources of contaminated foods. NCDA offers site-specific guidance on whether and when to complete FDA regulations. In addition, FDA publishes non-binding guidance on best practices for fresh fruit and vegetables here.<sup>14</sup>

NCDA oversees federal and state regulations for farms and food processors under the NC Food Law.<sup>15</sup> To determine what requirements the facility should meet in order to pass NCDA and USDA inspection, complete FDA registration, and maintain appropriate records in compliance with food safety laws, contact the Regulatory Programs Office of NCDA.<sup>16</sup> The full text of the NC Food Code can also be found online.<sup>17</sup>

It is important to note that the type, amount, distribution method, and quantity of food processed at the facility will determine the jurisdiction of each agency. Federal oversight generally covers the transportation, sale, and marketing of agricultural products across state lines, which is important to remember when considering Virginia markets. Any intent to market in Virginia should be accompanied by a consultation with federal agencies regarding additional rules that may apply.

## Recommendations for Structural Design and Methods to Ensure Compliance

The redevelopment of the site should be centered on making the necessary changes to bring the property into compliance with all of these regulations. Each of the above listed organizations should be asked to provide representatives to tour the site and provide suggestions or checklists for the redevelopment.

USDA provides a Wholesale Markets Facility Design Program in which regional food hubs can utilize USDA experts to create the facility design.<sup>18</sup> It is highly recommended that this program, or a similar

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<sup>13</sup> <http://www.fda.gov/food/guidanceregulation/foodfacilityregistration/default.htm>

<sup>14</sup> <http://www.fda.gov/Food/default.htm>

<sup>15</sup> <http://www.ncagr.gov/fooddrug/food/foodlaw.htm>

<sup>16</sup> <http://www.ncagr.gov/fooddrug/food/businesses.htm>

<sup>17</sup> <http://ehs.ncpublichealth.com/faf/docs/foodprot/NC-FoodCodeManual-2009-FINAL.pdf>

<sup>18</sup> <http://www.ams.usda.gov>

package of technical assistance from NCDA, be used in the creation of the site plan. This will eliminate unexpected costs for compliance with food safety laws.

The first area that should be addressed is lead paint and asbestos abatement. Most local public health departments assist with testing to determine whether such materials are present in the old building, which will then inform whether abatement should be performed. If it is needed, it is recommended that the Town contract with a licensed and experienced contractor who has performed such work in other projects and is bonded and insured.

Food safety compliance should be incorporated into the primary areas of a food hub: cold storage, cooling, wash lines, grading lines, packaging equipment stations, and truck unloading and loading. If the facility will be open for retail or public uses, it is critically important to arrange the facility in such a way that these areas are completely separate from one another.

To address these remaining areas of food safety compliance, initial project funding should be used to develop a site plan that addresses these issues and provides cost estimates for the work, preferably from a licensed and bonded general contractor or other firm that carries liability insurance. See the full Regulatory Contact List in the appendices.

For the purposes of this feasibility study, no facility specifications were collected; the consultant retained by the Town employs a structural engineer who will address facility needs. That engineer did provide quotes for energy-efficient HVAC and lighting systems for reference during this research, which she had secured during the initial scoping of the project.

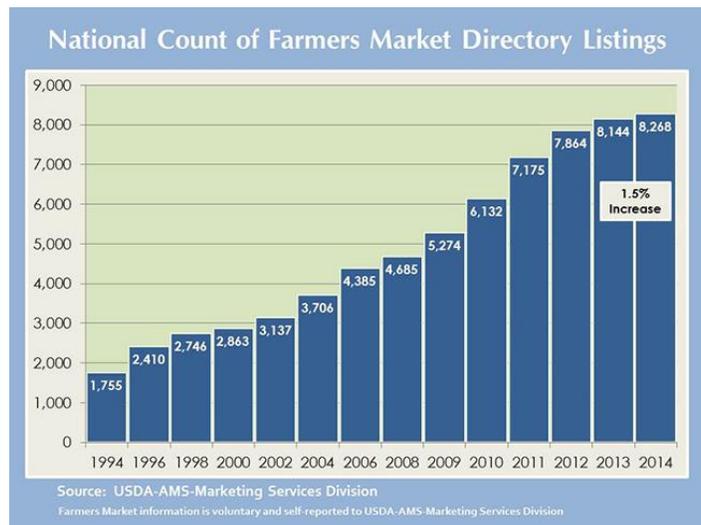
# FARMERS' MARKET RECOMMENDATIONS

## Overview of Best Practices

Farmers' markets are one of the fastest-growing small industries in the United States, with more than 7,000 new markets added in the past 14 years.

These markets, often called “direct-to-consumer” sales, tripled in growth between 1992-2007. Farmers' market sales grew twice as fast as total agricultural sales in that time period, increasing from \$400,000 to \$1.2 billion in just fifteen years.

These markets have the potential to significantly impact many people within a community, including: small and medium-sized producers, by easing the transition into commercial sales; consumers in food deserts, by providing a convenient source of fresh, healthy foods; and the community at large, by providing a central space for multiple activities such as education, events, and more.



Successful farmers' markets rely on many elements to ensure success:

- culturally appropriate, language-specific marketing and outreach;
- acceptance of federal nutrition benefits (SNAP / EBT);
- regular meeting schedules and locations;
- involvement of a representative group of farmers and growers;
- quality product that adheres to food safety guidelines;
- product pricing that is sensitive to both farmer needs and consumer limitations;
- partnerships and promotions with other community organizations and agencies;
- good organization and communications to ensure ease of participation;
- provision of collective tools, such as umbrellas, signage, coolers, or other items;
- exploration of additional tools to reach food-desert communities, such as mobile markets; and
- involvement with other community efforts and initiatives.

## Farmers' Markets in Low Income Communities and Food Deserts

Garysburg is located in a food desert that is surrounded by low-income communities. Few people have access to healthy food within a 20 mile radius, a fact that is demonstrated using the USDA Food Desert Locator Map:



Source: USDA Food Deserts Locator Map.<sup>19</sup>

In a 2012 North Carolina study by the Appalachian Sustainable Agriculture Project (ASAP), low-income consumers rated convenience, product pricing, language and cultural barriers, and a lack of acceptance of federal nutrition benefits as the top reasons that they don't participate in farmers' markets.<sup>20</sup>

Although farmers' markets themselves have seen tremendous growth, low- and moderate-income consumer participation in those markets has grown barely 10% in the same period.<sup>21</sup> Many communities across the United States have utilized solutions such as locating new markets in low-income neighborhoods or near social services offices; providing nutrition incentive programs; bringing nutrition education campaigns to the markets; and providing SNAP / EBT token machines at markets.<sup>22</sup>

In addition, markets have also framed their product availability and pricing to suit cultural needs in the communities where they are located; used signage to quickly and clearly lay out prices for items to eliminate confusion; and worked with local public transportation systems or other natural "gathering places" to increase the market's accessibility and visitation levels.

<sup>19</sup> <http://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.aspx>

<sup>20</sup> <http://asapconnections.org/downloads/asap-farmers-markets-for-all-full-report.pdf>

<sup>21</sup> <http://asapconnections.org/downloads/asap-farmers-markets-for-all-full-report.pdf>

<sup>22</sup> <http://fairfoodnetwork.org/connect/blog/new-nationwide-study-shows-snap-incentives-farmers-markets-boost-healthy-eating-support>

Allowing these successful models to shape the 2015 Heritage Market at the Garysburg facility will help ensure that low-income persons in the surrounding region are encouraged to attend the market.

## Recommendations for 2015 Heritage Market

The Town plans to launch a Heritage Market in the spring of 2015 at the elementary school site. In the process of forming this market, care has already been taken to ensure culturally appropriate naming, signage, and location for the market, which will help the market succeed in its first year.

Other recommendations for the market opening include successful best practices from other markets:

- Conduct a comprehensive marketing campaign throughout Garysburg and nearby towns, beginning in March 2015 and including both print and online media;
- Utilize nontraditional marketing opportunities, like inserts in church bulletins, talks with local clubs and groups, and billboard advertising;
- Purchase indoor and outdoor signage that is clear and easy to read, including directional signage;
- Offer incentives for shopping at the market in its opening weeks, such as free reusable shopping bags or double-dollar EBT programs, with grant funding;
- Offer farmer and grower incentives for participation, such as by providing folding tables and chairs or offering a cash incentive; and
- Take short surveys each week with consumers and farmers and incorporate feedback into market organization and processes.<sup>23</sup>

**Resources.** Eat Smart Move More NC has published a useful [guide to implementing EBT at farmers' markets](#).<sup>24</sup> North Carolina State University and NC Cooperative Extension maintain a website dedicated to [food access at local farmers' markets](#).<sup>25</sup> ASAP and RAFI-USA are partnering on a 2014 initiative to [increase direct farmer sales through use of SNAP/EBT](#).<sup>26</sup>

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<sup>23</sup> <http://fairfoodnetwork.org/connect/blog/new-nationwide-study-shows-snap-incentives-farmers-markets-boost-healthy-eating-support>

<sup>24</sup> [http://www.eatsmartmovemorenc.com/NCFarmersMarketsGuideSNAP\\_EBT/Texts/Guide to SNAPEBT at Farmers' Markets in North Carolina Steps, Best Practices and ResourcesKat Bawden\\_January 2013.pdf](http://www.eatsmartmovemorenc.com/NCFarmersMarketsGuideSNAP_EBT/Texts/Guide%20to%20SNAPEBT%20at%20Farmers'%20Markets%20in%20North%20Carolina%20Steps,%20Best%20Practices%20and%20ResourcesKat%20Bawden_January%202013.pdf)

<sup>25</sup> <http://localfood.ces.ncsu.edu/localfood-farmers-markets-and-food-access/>

<sup>26</sup> <http://asapconnections.org/connect2direct/>

## SUPPLY EVALUATION AND FINANCIAL ANALYSIS

The most critical elements for success in any food hub are volume and demand. Without the volume necessary to meet the demand of high-quantity wholesale markets, the entire viability of an aggregation center is in question. First we discuss the issues faced by regional farmers when transitioning to a diversified portfolio of crops. Then, we present a sampling of high-value vegetable crop prices. Lastly, three high-value crops are selected based on ease of growth during transition from row crops, handling sensitivity, and storage needs. These three crops – cabbage, green bell peppers, and sweet potatoes – are then used to demonstrate the relationship between volume thresholds and sales targets.

In any future financial analysis, a 5% emergency fund is recommended, along with accounting that covers produce shrinkage and other unforeseen impacts to volume levels.

**It should be noted that this financial analysis does not include start-up, operational, or overhead cost projections.** It is highly recommended that these projections are completed as soon as possible in the business planning stage or in future feasibility studies. Typical costs for food hubs include distribution (a highly capital-intensive activity); marketing; utilities, especially water and electricity; personnel; insurance; quality control; delivery and storage management; and building maintenance.

In his 2014 [“Economics of Food Hubs” presentation](#), consultant Smithson Mills provides these estimates for fixed and variable operational costs for food hubs. This model provides a useful starting point for future financial analyses, particularly in estimating overhead and operational costs for a food hub of similar size and range. The full presentation can be accessed [online](#).<sup>27</sup>

Fixed Costs	Annual Cost
Facility lease or debt service	\$0 to \$24,000 per year
General Manager	\$35,000 to \$50,000 per year
Warehouse Manager	\$25,000 to \$35,000 per year
Sales Agent	\$18,000 annual base salary
Truck Driver	\$12,000 base salary
Utilities	\$8,400 per year (\$700/month)
Workers Comp	5% of total wages
Unemployment Insurance	3% of total wages
SS and Medicaid	8.5% of total wages
Liability Insurance	\$5,000 per year
Estimated Fixed Costs	\$120,050 to \$174,825

Fixed Operational Costs for \$1 million in sales.

<sup>27</sup> <http://www.cefs.ncsu.edu/ncgt/economics-of-food-hubs.pdf>

Item Based on \$1,000,000 in Sales	Total Cost
Sales commissions (5%)	\$50,000
Truck Driver (.10 per mile, 30,000 miles)	\$3,000
Additional personnel overhead	\$10,335
Gas and Maintenance (30,000 miles)	\$16,500
COGS	\$840,000 (80% paid to growers)
Shrinkage of product	\$40,000
Packaging (boxes)	\$80,000
Utilities (over and above fixed minimum)	\$12,000
Facility supplies (towels, mops, cleaning)	\$2,000
<b>Total Variable Costs</b>	<b>\$1,053,835</b>

Variable Operational Costs for \$1 million in sales.

Additional financial tools for food hubs are available through [CEFS at NC State University](#),<sup>28</sup> [Wholesome Wave](#),<sup>29</sup> and [USDA’s Farmers’ Markets and Food Hubs Center](#).<sup>30</sup>

## Transition to Vegetables: Issues and Constraints

Currently, row crops such as cotton, soybeans, and corn comprise 95% of the production of the farms in Northampton County. Making the transition to vegetables provides many opportunities for farmers, increasing their profit potential, diversifying their production, and mitigating risk across several different crops. However, there are several issues and constraints to consider when preparing to transition farms to vegetable production.

**Soils and Environment.** The soils on these farms have been used almost exclusively for row crops over the past decade, with many also having been acreage used for experimental pesticide and varietal trials. Cover crops in between plantings and other soil cleaning techniques will be necessary to create viable vegetable soils. Working with NCDA and Cooperative Extension to create, implement, and monitor a Soil Transition Plan is highly recommended.

<sup>28</sup> <http://localfood.ces.ncsu.edu/local-food-hubs/>

<sup>29</sup> <http://www.wholesomewave.org/wp-content/uploads/2014/08/HFCI-Food-Hub-Business-Assessment-Toolkit.pdf>

<sup>30</sup> <http://www.ams.usda.gov/AMSV1.0/foodhubs>

**Farmer Education: Vegetable Production and Harvest.** Farmers will need to be educated about best practices and techniques for vegetable production; acreage selection; and differences in planting, maintaining, and harvesting vegetables as opposed to row crops.

**Farmer Education: GAP Certification.** GAP certification is an NCDA program which certifies independent farms of all sizes for proper handling techniques. Most large wholesale buyers will require that either the farmer or the food hub hold a current GAP certification. In the first phase of the project, while building repairs are underway, it is recommended that a small number of farms pursue GAP certification with the assistance of the food hub leadership, and utilize the facility as an aggregation center only (bringing GAP-certified produce to the center for aggregation and distribution).

Carolina Farm Stewardship Association's Guide to Good Agricultural Practices (GAP) for Small Diversified Farms is a good place to begin learning about GAP certification and sharing information with farmers.<sup>31</sup>

**Farmer Education: Insurance and Operations.** Vegetable production requires an entirely different approach to farm budgeting and cash management. New USDA guidelines may allow crop insurance for vegetables in 2015; if so, it's important to make farmers aware of this new provision.<sup>32</sup> In addition, operational costs, labor costs, insurance, and other factors may be different. Project leaders should rely on experts from state and local agencies and help conduct outreach and education programs for farmers during the first and second years of the project.

CFSA also published the 2012 guide to starting a farm business in North Carolina, with useful information on regulatory laws and oversight that will be helpful for individual farmers.<sup>33</sup>

**Introduction of Farmers' Market.** Bringing vegetable crops to the farmers' market will require some farmer assistance with tables, chairs, coolers, and money management. In addition, all farmers' markets are required to have a registered manager who vouches for the vendors with the NCDA and the NC Department of Revenue. Some market participants will need to register and declare sales tax with NCDOR (based on 2014 legislation that impacted farmers' markets). Assistance should be provided to farmers during the market's pilot year.

## High-Value Crops: Production and Volume Needs

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<sup>31</sup> <http://www.carolinafarmstewards.org/gaps-manual/>

<sup>32</sup> <http://rafiusa.org/blog/crop-insurance-to-be-more-cost-effective-for-diversified-and-specialty-crop-producers/>

<sup>33</sup> [http://www.carolinafarmstewards.org/wp-content/uploads/2012/10/CFSA\\_RegGuide-NC2012\\_webres4.pdf](http://www.carolinafarmstewards.org/wp-content/uploads/2012/10/CFSA_RegGuide-NC2012_webres4.pdf)

Typical high-value crops in North Carolina were determined using the NC Growing Together Project's database of historic price points, collected daily by NCDA for wholesale prices at the Raleigh Farmers' Market.

Crop, Type, Unit of Measurement	2013 Avg. Annual Price Per Unit	2012 Avg. Annual Price Per Unit
Beans, round green, 1 1/9 bushel carton	\$32.72	\$27.47
Beans, pole, 1 1/9 bushel carton	\$33.15	\$26.85
Broccoli, carton 14s	\$28.68	\$20.89
Cabbage, 50 lb. carton	\$18.31	\$15.30
Carrots, 50 lb. sack	\$24.57	\$21.63
Cucumbers, long green, 40 lb. carton	\$24.75	\$22.95
Greens, collard, loose 24s	\$10.51	\$10.00
Greens, kale, bunched 24s	\$13.75	\$13.75
Peppers, bell, green, 1 1/9 bushel carton	\$24.13	\$21.16
Potatoes, white, 50 lb. carton	\$23.32	\$18.41
Potatoes, red, 50 lb. carton	\$25.40	\$18.97
Squash, yellow crookneck, 3/4 bushel carton	\$23.94	\$20.06
Squash, zucchini, 1/2 bushel carton	\$19.99	\$18.30
Sweet potatoes, orange, 40 lb. carton	\$18.72	\$18.66
Tomatoes, xlg, not vine-ripened, 25 lb. carton	\$23.66	\$20.37

When considering which of these high-value crops could be used as a basis for the supply evaluation, several factors were considered:

- Is the crop an easy-to-grow and/or a financially feasible crop to utilize in the transition from row crops to vegetables?
- Does the crop have a low handling sensitivity during harvest?
- Does the crop have a long storage life, either on the shelf or in cool or cold storage?

Based on these criteria, **cabbage**, **green bell peppers**, and **sweet potatoes** were selected for the financial analysis.

*Historic Price Points for High Value Crops*

Historic price points were obtained from the North Carolina Growing Together Project's database of wholesale prices at the Raleigh Farmers' Market from 2009-2013.<sup>34</sup> For each product, the annual average price, annual high price, and annual low price were combined across all six years of data to create a single price estimate for annual average, annual high, and annual low.

<b>Cabbage, 50 lb. Carton, Round Green</b>	<b>Annual Average</b>	<b>Annual High</b>	<b>Annual Low</b>
<b>2008</b>	14.17	27.45	10.00
<b>2009</b>	14.86	21.45	11.50
<b>2010</b>	16.21	26.00	9.50
<b>2011</b>	17.97	32.95	11.95
<b>2012</b>	15.30	23.95	10.55
<b>2013</b>	18.31	32.50	11.55

<b>Peppers, Green Bell, 1 1/9 bushel carton</b>	<b>Annual Average</b>	<b>Annual High</b>	<b>Annual Low</b>
<b>2008</b>	23.07	43.25	13.55
<b>2009</b>	20.86	31.00	11.45
<b>2010</b>	27.58	70.15	12.95
<b>2011</b>	23.50	54.25	14.35
<b>2012</b>	21.16	34.00	13.45
<b>2013</b>	24.13	34.35	13.65

<b>Sweet Potatoes, 40 lb. Carton, Orange</b>	<b>Annual Average</b>	<b>Annual High</b>	<b>Annual Low</b>
<b>2008</b>	17.51	25.00	15.85
<b>2009</b>	16.63	19.00	16.00
<b>2010</b>	18.20	32.00	15.00
<b>2011</b>	18.71	29.45	16.00
<b>2012</b>	18.66	23.95	16.00
<b>2013</b>	18.72	22.95	12.95

For the purposes of the volume analysis, the following estimates were used for production per acre, with price per unit equaling the six-year average annual price (the high and low averages are provided

<sup>34</sup> <http://www.ncgrowingtogether.org/for-producers/>

for purposes of comparison only). The profit per acre data was first converted from hundredweight (CWT) measurements to carton equivalents per the price data above.<sup>35</sup>

Product	Six-Year Average Annual Price	Six-Year Average High Price	Six-Year Average Low Price
<b>Cabbage</b>	\$16.13	\$27.38	\$10.84
<b>Green Bell Peppers</b>	\$23.38*	\$44.50	\$13.23
<b>Sweet Potatoes</b>	\$18.07	\$25.39	\$15.30

*\*In the table below, the price of green bell peppers was adjusted to reflect an average of this price and the lower USDA estimated price.*

Then, each crop was evaluated for production and gross revenues per acre:

Product	Unit Measurement	CWT per Acre	Pounds per Acre	Cartons per Acre	Price per Carton	Gross Revenues per Acre
<b>Cabbage</b>	CWT (2 cartons / 100 lbs.)	270 CWT / acre	27,000 lbs.	540 cartons	\$16.13 per carton	\$8,710.20
<b>Green Bell Peppers</b>	CWT (3 cartons / 100 lbs.)	190 CWT / acre	19,000 lbs.	575 cartons	\$18.23 per carton*	\$10,482.25
<b>Sweet Potatoes</b>	CWT (2.5 cartons / 100 lbs.)	200 CWT / acre	20,000 lbs.	500 cartons	\$18.07 per carton	\$9,085.00

*\*Note: The original USDA data is given here in CWT (a hundredweight), used in commodities trading. Conversions are made to pounds and cartons per acre. For the purposes of these estimates, 11/9 bushel cartons were calculated at 33 lbs. per carton.*

## Volume Analysis for Wholesale Sales

To create the volume analysis to determine how many acres should be in production to reach a volume threshold, the profit per acre is multiplied across a range of acreage measurements. This is helpful when evaluating how many acres farmers can diversify at once, and in determining how many farmers will need to be brought into the project in order to create the volume needed for wholesale sales.

The first table shows production per acre in CWT (hundredweights) and pounds. The second table translates the production per acre into profit per acre.

Crop	Production Per Acre			
	in CWT and Pounds	Per 10 acres	Per 25 acres	Per 50 acres

<sup>35</sup> <http://www.nass.usda.gov/>

<b>Cabbage</b>	270 CWT 27,500 lbs.	2700 CWT 275,000 lbs.	6,750 CWT 687,500 lbs.	13,500 CWT 1,375,000 lbs.
<b>Green Bell Peppers</b>	190 CWT 19,000 lbs.	1,900 CWT 190,000 lbs.	4,750 CWT 475,000 lbs.	9,500 CWT 950,000.00
<b>Sweet Potatoes</b>	200 CWT 20,000 lbs.	2,000 CWT 200,000 lbs.	5,000 CWT 500,000 lbs.	10,000 CWT 1,000,000 lbs.

Crop	Gross Revenues			
	Per Acre	Per 10 acres	Per 25 acres	Per 50 acres
<b>Cabbage</b>	\$8,710.20	\$87,102.00	\$217,755.00	\$435,510.00
<b>Green Bell Peppers</b>	\$10,482.25	\$104,822.50	\$262,056.25	\$524,112.50
<b>Sweet Potatoes</b>	\$9,085.00	\$90,850.00	\$227,125.00	\$454,250.00

### Revenue Thresholds

Below, we estimate the number of acres needed to reach specific revenue thresholds, from \$250,000 to \$5,000,000 in gross sales (\$250,000 to \$500,000 is a realistic range for the first 3 years of operation). The “acres grown” measurement is calculated such that each crop grosses approximately 1/3 of the total sales. A 10% reserve for emergencies and/or unanticipated impacts to the harvest, such as crop failure, has also been included.

**Please note that these calculations do not include any crops other than the three identified here and does not reflect any costs of operation or overhead.**

Revenue Threshold	Cabbage		Green Bell Peppers		Sweet Potatoes	
	Acreage	Gross Sales	Acreage	Gross Sales	Acreage	Gross Sales
<b>\$250,000 in sales</b>	10 acres	\$87,000	10 acres	\$105,000	10 acres	\$90,000
<b>\$500,000 in sales</b>	20 acres	\$174,000	15 acres	\$157,000	20 acres	\$181,000
<b>\$1 million in sales</b>	40 acres	\$348,000	30 acres	\$314,000	35 acres	\$318,000
<b>\$3 million in sales</b>	115 acres	\$1 million	100 acres	\$1 million	115 acres	\$1 million
<b>\$5 million in sales</b>	190 acres	\$1.6 million	160 acres	\$1.7 million	185 acres	\$1.7 million

It is highly recommended that the client perform a full financial analysis, including acreage thresholds for sales targets based on realistic expectations of crops grown, during a future feasibility study or during the business planning.

### Analysis of Commission Structures, Percentage Fees, and Profit Sharing

Some successful food hub projects, like ECO in Durham, utilize an 80/20 commission structure. However, recent research suggests that in today’s competitive market, and given the overhead and operational costs faced by food hubs, less generous commission structures are necessary to ensure the financial viability of food hubs.<sup>36</sup> The table below explores various models for commission and percentage fees and profit sharing:

<b>Analysis of Commission Structures</b>				
<b>Annual Sales</b>	<b>20% Commission</b>	<b>25% Commission</b>	<b>30% Commission</b>	<b>35% Commission</b>
<b>\$250,000</b>	\$50,000	\$62,500	\$75,000	\$87,500
<b>\$500,000</b>	\$100,000	\$125,000	\$150,000	\$175,000
<b>\$1 million</b>	\$200,000	\$250,000	\$300,000	\$350,000
<b>\$3 million</b>	\$600,000	\$750,000	\$900,000	\$1,050,000
<b>\$5 million</b>	\$1,000,000	\$1,250,000	\$1,500,000	\$1,750,000

*It should be noted that none of these commission structures compare the profits earned with overhead or operational costs, which should be explored in a future feasibility study or during the business planning process.*

Although the 80/20 model has proven unsustainable for most food hubs, it does not automatically justify the use of unnecessarily high commission structures. This is especially important during the formative initial years of business, when a good farmer-aggregator relationship is critical to the success of the project. Revenue comparisons with ECO and PMP, the two other North Carolina food hub models referenced in this study, are recommended.

It’s important to note that the USDA Economic Research Service estimates that nationally, farmers get only 25-33% of the retail price of their fresh fruits and vegetables. Food hubs, by contrast, have the opportunity to increase farm income up to threefold with an 80/20 or 75/25 commission structure. This can have a significant impact on the regional agricultural economy and on the growth volume of those farmers, and is an important fact to highlight in any funding request or financial summary.

It is highly recommended that the project team conduct a full financial analysis, including both start-up and operational costs, before selecting a commission structure that closely matches the financial needs of the facility operator and still provides the maximum benefit to local farmers.

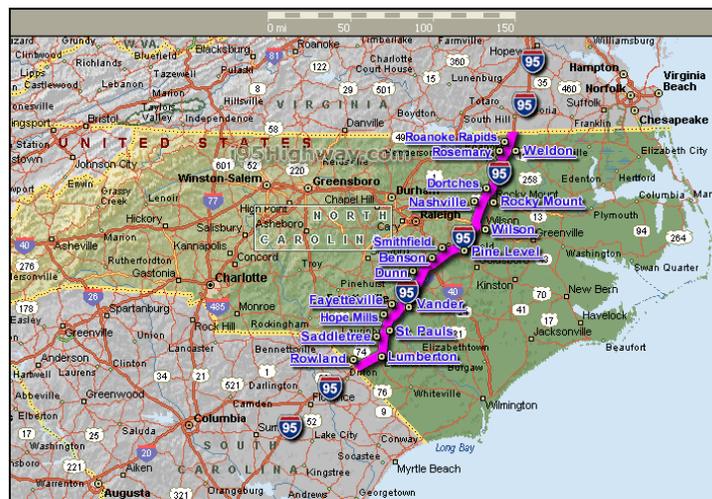
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<sup>36</sup> Mills, Smithson. 6-10.

## Market Analysis Synopsis for Region and I-95 Corridor

The Northeastern region of North Carolina has the dual benefit of being situated close to the Raleigh/Durham/Triangle region and to the southeastern Virginia markets of Hampton, Norfolk, Suffolk, and Virginia Beach. The I-95 Corridor, which is less than three miles from the facility, is one of the fastest-developing transportation corridors in the country, and serves markets as far south as Florida and as far north as the capital and New York City.

The corridor contains over 20% of federal highway miles, and the average daily commercial truck traffic surpasses 10,000 trucks per day.<sup>37</sup> In 2011, the North Carolina Department of Transportation (NCDOT) commissioned a study of the I-95 corridor in the state.<sup>38</sup> The study found that over 60% of the truck traffic into North Carolina originated from Florida, South Carolina, Virginia, and Pennsylvania, demonstrating that empty truck routes back to those destinations could be utilized for distribution purposes. The study also found that over a third of the commodities moved on the I-95 corridor in North Carolina are food and farm products.



I-95Corridor.com

<sup>37</sup> <http://www.i95coalition.org/i95/Home/I95CorridorFacts/tabid/173/Default.aspx>

<sup>38</sup> [http://www.driving95.com/assets/pdfs/\\_Task-6\\_Trucking\\_and\\_Shipping\\_Analysis.pdf](http://www.driving95.com/assets/pdfs/_Task-6_Trucking_and_Shipping_Analysis.pdf)

**Table 2.2 Population Projections for I-95 Counties**

	Population Projections						Percent Change 2010-2032
	2010	2015	2020	2025	2030	2032	
Northampton	22,063	21,361	20,756	20,152	19,490	19,241	-13%
Halifax	54,565	53,691	52,806	51,920	51,035	50,682	-7%
Nash	95,878	97,680	99,557	101,433	103,307	104,057	9%
Wilson	81,373	84,376	88,118	91,864	95,607	97,104	19%
Johnston	169,669	184,158	198,644	213,127	227,614	233,407	38%
Harnett	115,792	130,123	144,503	158,885	173,266	179,020	55%
Cumberland	327,348	336,378	340,797	342,553	343,253	343,394	5%
Robeson	134,489	135,356	136,237	137,116	137,994	138,348	3%
I-95 Corridor	1,001,177	1,043,123	1,081,418	1,117,050	1,151,566	1,165,253	16%
North Carolina	9,575,665	10,097,304	10,616,077	11,126,321	11,631,895	11,832,968	24%

NC Office of Budget and Management, 2011

Another study focused on the economic impact of I-95 analyzed its economic effects on the eight NC counties through which it moves. Unfortunately, Northampton was not expected to see significant benefits from I-95 due to its trend of population decrease; however, this project could provide a way to improve on those predictions.

Markets in the Raleigh-Durham area are already served by several food hubs, both in existence and in development. Although a full market study should confirm this decision, it is not initially recommended to reach into Raleigh markets. Rather, markets in Northeastern North Carolina and southeastern Virginia are recommended for initial outreach.

There are currently no other food hubs that offer significant competition in Northeastern North Carolina. Competition in the Virginia markets may come from Richmond-based virtual food hub Lulus Local Foods, Local Food Hub in Charlottesville, and other developing food hubs in the region.<sup>39</sup> The closest Virginia food hubs are based in Elkwood and Charlottesville.

A full directory of food brokers operating in North Carolina has been included in the appendices and should be referenced when making market decisions. Future market analysis should include specific data on key customer segments, the size of the potential markets, the regulatory climate, and market trends.

*This feasibility study is not intended to provide a comprehensive market analysis; it is recommended that a detailed market evaluation be conducted as part of the business planning or in a future feasibility study.*

<sup>39</sup> <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5091435>

## Grant Funding Summary

The project team has indicated that funding research is not required at this time; however, the following grant opportunities were collected as part of the research for this study and are included for reference.

Funding Source	Focus Area	Website
Conservation Fund	Land conservation and sustainable development	<a href="http://www.conservationfund.org/places-we-work/north-carolina/">http://www.conservationfund.org/places-we-work/north-carolina/</a>
Conservation Trust of NC	Land conservation	<a href="http://www.ctnc.org/">http://www.ctnc.org/</a>
RAFI-USA	Agricultural Reinvestment Fund	<a href="http://www.rafiusa.org/grants/">www.rafiusa.org/grants/</a>
USDA (20+ Funding Programs)	Facility Design, Marketing Grants	<a href="http://www.usda.gov">www.usda.gov</a>
NCDA	Architectural and building services assistance	<a href="http://www.ncagr.gov">www.ncagr.gov</a>
NCDA	Specialty Crop Block Grant Program	<a href="http://www.ncagr.gov/markets/scgrant/index.htm">www.ncagr.gov/markets/scgrant/index.htm</a>
Blue Moon Fund	Healthy Food Systems	<a href="http://www.bluemoonfund.org/">http://www.bluemoonfund.org/</a>
Cannon Foundation	Human Services	<a href="http://www.cannonfoundation.org/">http://www.cannonfoundation.org/</a>
Ford Foundation	Innovative Land-Use Program	<a href="http://www.fordfoundation.org/">http://www.fordfoundation.org/</a>
W.K. Kellogg Foundation	Healthy Food Systems	<a href="http://www.wkkf.org/">http://www.wkkf.org/</a>
KYF Directory of Funders	Provided by USDA	<a href="http://www.usda.gov/wps/portal/usda/usdahome?navid=KYF_GRANTS">www.usda.gov/wps/portal/usda/usdahome?navid=KYF_GRANTS</a>

## RECOMMENDATIONS FOR FUTURE RESEARCH

Although the feasibility study indicates that this facility has tremendous potential, food hubs are a difficult start-up business. In order to ensure the project is a success, these next steps are recommended.

### Organizational structure and initial funding

- Form a nonprofit or corporation to manage facility
- Sign binding contracts between Town and private partner for building use and ownership
- Consider grant funding for start-up costs
- Open Heritage Market and retail spaces as soon as possible in 2015 to generate rental income
- Determine Year 1 commission rates and volume projections with farmer input
- Establish farmer advisory group to participate in formative discussions

### Facility redesign plan

- Prepared with assistance of regulatory agencies to ensure compliance
- Include cost estimates for facility redesign and additions, based on phased implementation
- Include equipment and infrastructure estimates for cooling, cold storage, flash-freezing units, and other possible processing needs

### Completion of a full financial analysis and business plan

- A clear business justification
- Clearly defined revenue generation mechanisms *as agreed with farmers*
- An estimate of committed farms and acreage for vegetable production
- A full review of estimated operations and start-up expenses
- Data from the initial facility design plan
- Comparison of lease v. purchase distribution options
- Economic impact analysis
- Social impact analysis
- Income and balance sheet metrics
- Cash flow projections

### A comprehensive marketing study

- Analysis of market segments and size
- Key characteristics for North Carolina and Virginia markets
- Statement of value proposition
- Statement of competitive advantage

### **Risk mitigation planning<sup>40</sup>**

- Particularly important for agricultural operations subject to weather
- Includes risks faced by all start-up businesses
- Develop risk mitigation plans that are concise and clear
- Purchase insurance
- Prepare for natural cycles that affect product availability, like seasonal variations

### **Partnerships and outreach**

- Conduct outreach to farmers within county, and in other counties and region
- Work with NCDA, NC Cooperative Extension, and other agricultural public entities
- Establish relationship with USDA representatives
- Partner with county government and regional Council of Governments
- Establish successful initial farmers' market season and track needs and improvements

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<sup>40</sup> Risk Management Planning Guide, Northwestern Farm Services

## APPENDIX

National Good Food Network has an online reference center for all food hub issues, and compiles studies, hosts webinars, and provides up-to-date information on changes to national and state laws affecting food hubs: <http://www.ngfn.org/resources/food-hubs>.

The Wallace Center at Winrock International provides a central database of research and resources for food hubs at <http://www.wallacecenter.org/foodhubcollaboration/>.

Wholesome Wave provides several food hub business planning resources, including a Business Assessment Toolkit and Structuring Guide: <http://www.wholesomewave.org/wp-content/uploads/2014/08/HFCI-Food-Hub-Business-Assessment-Toolkit.pdf>.

Feeding Ten Billion, a global food agency, publishes a Positioning Guide to help food hubs determine their marketing strategy: <http://www.feeding10billion.com/entrepreneur-resources/>.

Regulatory information is hyperlinked throughout the document, but the best place to start is with the FDA Applicable Food Business Regulations page:

<http://www.fda.gov/downloads/Food/GuidanceRegulation/UCM113877.pdf>.

CEFS publishes a Supply Chain Infrastructure List and map at <http://www.cefs.ncsu.edu/statewide-infrastructure-map.html>; the list of food hubs in North Carolina is below.

	Business Type	Name	County	City	Address	Zip	Phone	Website / Email
1	Food Hub	Farm Fresh Ventures Cooperative	Anson	Wadesboro	1736 US Hwy 52 South	28170	(704) 694-0102	<a href="http://www.farmfreshventures.com">http://www.farmfreshventures.com</a>
2	Food Hub	TRACTOR	Mitchell/Yancey	Burnsville	10 Orchard Drive	28714	(828) 352-8323	
3	Food Hub	SENC Foods Processing and Distribution	Pender	Burgaw	115 S Dickerson Street	28425	(828) 506-5600	
4	Food Hub	Pilot Mountain Pride	Surry	Pilot Mountain	612 East Main Street	27041	(336) 401-7170	<a href="http://pilotmountainpride.com/index.php/new-home">http://pilotmountainpride.com/index.php/new-home</a>
5	Food Hub	Eastern Carolina Organics	Chatham	Pittsboro	2210 E. Pettigrew Street	27703	(919) 542-3264	
6	Food Hub	Firsthand Foods	Chatham	Pittsboro	2210 E. Pettigrew Street	27703		
7	Food Hub	Madison Family Farms	Madison	Marshall	258 Carolina Lane	28753	828-689-4586	<a href="http://www.buyappalachian.org/buyer/madison-family-farms">http://www.buyappalachian.org/buyer/madison-family-farms</a>
8	Food Hub	Polk Fresh Foods	Polk	Tryon	520 Pinefield Drive	28782	828-817-0959	<a href="http://www.polkfreshfoods.com">www.polkfreshfoods.com</a>

*NC Growing Together Supply Chain Infrastructure List of Food Hubs.*

### **Recommended Contacts List: Regulators and Partners**

The North Carolina Department of Agriculture offers a one-stop website for food safety information at [www.ncfoodsafety.com](http://www.ncfoodsafety.com).

USDA's Food Safety Inspection Service has a district office in Raleigh, North Carolina, that can be reached at 1-800-662-7608, or by contacting Mr. Steve Lalicker at [Steven.Lalicker@fsis.usda.gov](mailto:Steven.Lalicker@fsis.usda.gov).

NCDA's Assistant Director of Regulatory Programs, Jim Melvin, can be reached at 919.733.7366 or by email at [jim.melvin@ncagr.gov](mailto:jim.melvin@ncagr.gov).

NCDA's Agritourism Marketing Specialist, Annie Baggett, can assist with building place-based tourism around the agriculture center, and can be reached at 919.707.3120 or at [annie.baggett@ncagr.gov](mailto:annie.baggett@ncagr.gov).

NCSU Cooperative Extension Service is represented in the region by Anass Banna, Small Farms Extension Agent, who can be reached at [anassou\\_banna@ncsu.edu](mailto:anassou_banna@ncsu.edu) or at 252-358-7822 ext. 3705.

Northampton is represented by the [Upper Coastal Plain Council of Governments](#). Other potential COG partners include the [Mid-East Commission](#), the [Kerr-Tar Council of Governments](#), [Northampton County's Economic Development Office](#), and local and regional community groups.