



## ACORN Wholesale Collaborative

# Final Report



June 2011

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## Table of Contents

<b>A. Executive Summary .....</b>	<b>2</b>
<b>B. Planning Study Overview and Goals .....</b>	<b>4</b>
<b>C. Process.....</b>	<b>5</b>
<b>Appendix 1: Research Participants .....</b>	<b>19</b>
<b>Appendix 2: Matchmaker Participants .....</b>	<b>19</b>
<b>Appendix 3: Crop Interest Summary Worksheet.....</b>	<b>20</b>
<b>Appendix 4: Buyers' Cumulative Data .....</b>	<b>21</b>
<b>Appendix 5: Growers' Cumulative Dollar Volume.....</b>	<b>22</b>
<b>Appendix 6: Farm-gate Prices by Crop.....</b>	<b>23</b>
<b>Appendix 7: Buyers' Maximum Prices Compared to Growers' Minimum Prices.....</b>	<b>24</b>
<b>Appendix 7: Volumes Demand Supply Data .....</b>	<b>24</b>
<b>Appendix 8: Growers' Crop Interest Summary .....</b>	<b>25</b>
<b>Appendix 9: Middlebury College Top Rated Crops .....</b>	<b>27</b>
<b>Appendix 10: Storage Crop Summary .....</b>	<b>28</b>
<b>Appendix 11: Optimal Storage Conditions by Crop .....</b>	<b>30</b>
<b>Appendix 12: Matchmaker Template.....</b>	<b>31</b>
<b>Appendix 14: Online Summary .....</b>	<b>32</b>
<b>Appendix 15: Online Research Template.....</b>	<b>33</b>
<b>Appendix 16: General Online Requirements .....</b>	<b>34</b>
<b>Appendix 17: Considerations for the Online Platform .....</b>	<b>35</b>
<b>Appendix 18: Resources and References .....</b>	<b>36</b>

## A) Executive Summary

**I) THE OBJECTIVE:** The ACORN Wholesale Collaborative (AWC) was funded in December 2010 to conduct a planning study to determine the feasibility and economic viability of a low-cost, online wholesale brokerage and delivery service linking Addison County produce growers and institutional buyers.

**II) THE GOAL:** To verify whether a critical market volume (\$150,000) could be reached in year one that would justify the launch of the wholesale brokerage and delivery service in June 2011.

### III) ASSUMPTIONS TO TEST AND KEY QUESTIONS TO ANSWER:

a) Institutional interest in increasing purchasing of local produce exists and is ready to move if supply can be made more convenient and affordable.

b) With direct markets getting saturated, mid-scale growers with on-farm capacity are exploring new wholesale markets that will allow them to specialize and focus on production.

c) Growers need incentives to plant this spring. Are institutions interested in contracting and pre-buying production?

d) What influence will short or long-term storage have on supply and demand?

e) Delivery can be piggy-backed on existing delivery routes.

f) An online platform with bundled services will improve efficiencies and leverage more produce flows in the county.

g) What role might exports to out-of-state markets play?

**IV) THE PROJECT PERIOD:** January 15 -May 31, 2011

### V) THE PARTICIPANTS:

a) Market Consultant: Annie Harlow

b) ACORN Management Team: Jonathan Corcoran and Rich Carpenter

c) AWC Advisory Board of Buyers & Growers

#### Advisory Board:

Kathy Alexander, *Addison Northeast Foodservice*

Matthew Biette, *Middlebury College Dining Services*

Hank Bissell, *Lewis Creek Farm*

Spencer Blackwell, *Elmer Farm*

Laura Brace, *Porter Medical Center*

David Dolginow, *VT Refrigerated Storage*

Barney Hodges, *Sunrise Orchards and VT Refrigerated Storage*

Sam Lester and Maura Lester, *Lester Farm*

Bart Litvin, *Greg's Meat Market*

Glenn Lower, *Middlebury Natural Foods Co-op*

Jon Satz, *Wood's Market Garden*

Bill Suhr, *Champlain Orchards*

Dave Zuckerman, *Full Moon Farm*

**VI) THE PROCESS:** The planning study was built from the ground up and evolved organically through three dynamic, iterative phases that accelerated learning, feedback and revision.

The first phase was focused on taking inventory of the growers and buyers and collecting supply and demand data about crops, pricing and volumes directly from them. Annie Harlow spearheaded this research and compilation of data. Much of the groundwork to identify key stakeholders was already available from ACORN's Strategic Plan for the Addison County Local Foods Collaborative which was published in June 2010.

In the second phase, the AWC team analyzed and interpreted the data collected. The team sharpened its focus and occasionally revised its assumptions. They then identified the key issues and questions for deliberation and feedback from

the Advisory Board. These questions became the stepping-stones through the process.

The third phase included the participation of the Advisory Board which served as an Addison County food system roundtable. Once-a-month, these key stakeholders, some of whom compete with each other, came together and were presented with a unique problem the team needed help with. They served as a sounding board to test the team's thinking and assumptions: they reacted, disagreed, gave suggestions and often offered new direction.

The findings are based on a series of twelve questions that drove the process:

- 1) Who are the key buyers and growers who might use the brokerage service?
- 2) What key Addison County crops are available for wholesale distribution?
- 3) Are growers and buyers interested in entering into advance production commitments or contracts?
- 4) Is there sufficient volume to launch a wholesale brokerage?
- 5) What crops would benefit most from long-term storage?
- 6) Would long-term storage leverage supply and demand?
- 7) Is there sufficient volume to make long-term storage viable?
- 8) How can new business relationships between growers and buyers be developed?
- 9) Might an online market platform stimulate wholesale market growth?
- 10) What are the key features and capabilities of an online platform?
- 11) What other standards and guidelines, branding and marketing will facilitate use of the online platform and build value for users?

- 12) What aggregation and export opportunities might the online platform enable?

## **VII) CONCLUSIONS:** The key conclusions are:

- a) There is not sufficient volume at this time to launch a wholesale brokerage service in Addison County. The team calculated that a minimum of \$50,000 of institutional purchasing commitments was needed to support the launch.
- b) Institutional demand is cautious, budget-constrained and reluctant to make sufficient commitments to grow supply in the short term. That said, there are ample opportunities for increasing seasonal spot purchases.
- c) Positive crop matches for wholesale distribution were identified and included carrots, tomatoes (all types), squash (summer, zucchini and butternut), cabbage, cantaloupe, lettuces (red and green leaf but not romaine).
- d) Growers are seeking opportunities to capture retail pricing and are selective about which crops they will grow for wholesale distribution.
- e) Both growers and buyers are reluctant to contract pre-buy or advance production agreements or commitments at this time. Production and market risks are perceived as challenges.
- f) Cost-benefit analysis of long-term storage crops indicate that carrots, cabbage, beets, onions and winter squash offer potential opportunities. Current local production volume of storage crops, however, cannot support the costs of storage unless commingled with regional

supply. Further cost analysis is required once VT Refrigerated Storage completes its study in June.

- g) The first Addison County Matchmaker was organized with the collaboration of VT Fresh Network at Middlebury College on March 30. Twenty-five growers and buyers participated in a 2-hour speed-dating format which was a resounding success.
- h) Development of an online platform is strongly supported by the Advisory Board and Matchmaker participants to facilitate and stimulate markets.

#### VIII) NEXT STEPS – REMAINDER OF 2011:

- a) Identify capabilities and features (marketing, ordering, sorting and filters, billing, payments processing, product tracking etc.) of a scalable online platform with input from the Advisory Board and key users. Review ownership and membership options. Beta test platform in July with five growers and buyers for launch in September.
- b) Explore local distribution flows and distribution options to find efficiencies
- c) Promote the second *Addison County Matchmaker* scheduled for October 24<sup>th</sup> at Middlebury College.

#### *Goals for the ACORN Wholesale Collaborative*

- *Dramatically increase local food production*
- *Develop new markets across categories*
- *Catalyze infrastructure investment*
- *Scale-up mid size growers*
- *Aggregate orders, minimize supply-chain logistics*
- *Self-sustaining operation in three years*

- d) Assist in the exploration of a multi-farm workplace CSA at Middlebury College.
- e) Coordinate with NOFA, UVM Extension and Farm Viability Program to develop Addison County workshops for mid-scale growers offering technical assistance with crops, business planning, enterprise analysis, management and food safety plans.
- f) Evaluate aggregation and export opportunities as a transitional strategy to support mid-scale growers to scale up.
- g) Analysis, management and food safety plans.
- h) Evaluate aggregation and export opportunities as a transitional strategy to support mid-scale growers to scale up.

## B) AWC Planning Study Overview and Goals

In 2010, the Addison County Relocalization Network (ACORN) set out to increase the production and purchase of local food through the development of a collaborative, county-wide wholesale brokerage. The

ACORN Wholesale Collaborative (AWC) project was envisioned as an online brokerage and direct delivery service that would distribute produce from local farms to local institutions in Addison County.

ACORN's non-profit status would allow the AWC to serve as a low-cost, fair-trade broker between growers and buyers. The fee-based brokerage was projected to become a self-sustaining business in three years.



The AWC explored existing distribution infrastructure to minimize costs and investment in assets while also incorporating the efficiencies of an online ordering platform.

The planning study goal was to verify whether a critical market volume (\$150,000) could be reached in year one that would justify the launch of the wholesale brokerage and delivery service in June 2011.

Our bottom-up approach to building a collaborative, wholesale distribution network was based on the groundwork of ACORN's June 2010 *Strategic Plan for the Addison County Local Food Collaborative*. The strategic plan identified key stakeholders in the local food system, estimated preliminary distribution costs, evaluated geographic barriers, transportation and aggregating facilities, and explored the utility of an online ordering system.

Local food sales are at a crossroads. Both the Middlebury Natural Foods Co-op and the Middlebury Farmers' Market are not taking on any more growers. On the other hand, local institutions, including the college, hospital and schools are willing to purchase more local food but lack the time and resources to develop the market. A matchmaker is needed to bridge the cultural gap between purchasing agents and local growers and to broker a commercial wholesale market relationship.

Challenges for institutional buyers include: inconsistent availabilities and quality, perceived high price points, limited time to coordinate multiple small suppliers, inefficient ordering and deliveries. Growers, on the other hand, want to focus on production and profitability. They are discouraged by low wholesale prices and risks associated with expansion. Obstacles include limited knowledge of buyers' needs, limited capacity to meet packaging and food safety specifications, and challenges of coordinating logistics, deliveries and payments. These variables hinder penetration of institutional outlets.

In developing the community brokerage model, the AWC took a mutual-benefit approach to building

participation. Partners in this research and planning stage included an Advisory Board made up of key local growers and buyers. Trucking and product aggregating partners were Champlain Orchards and Vermont Refrigerated Storage. The Intervale Food Hub and the Windham Food Network provided online wholesale brokerage and distribution models.

Another key objective of the AWC model was to facilitate and enhance *relationship marketing*. A comprehensive online marketing system might more directly match growers' and buyers' needs. The online platform might also offer customers efficiencies in ordering, billing, product tracking and logistics.

An ongoing challenge was to match the scale of growers and buyers. As we identified available crop volumes and pricing, it was important to also match trucking and product aggregation costs in order to meet the needs of both parties. Our research also explored the scaling needed to make distribution, storage and secondary processing economically feasible. Matching became a foundational concept of the AWC's work.

A bottleneck in Addison County, and elsewhere in the state, is the expense of distributing small amounts of produce to and from isolated and dispersed locations. AWC continues to explore ways to maximize our geographic, collaborative and infrastructure variables to increase cost-effective distribution options for growers.

## C) Process

Our process was simple. Utilize key ACORN staff, hire a consultant, and create an Advisory Board. Ask questions then follow the answers. We developed a series of twelve questions over the course of the planning study. They were our stepping-stones through the process.

The planning study was built from the ground up with three dynamic, iterative phases that accelerated learning, feedback and revision.

The first phase focused on taking inventory of the growers and buyers and collecting supply and demand data about crops, pricing and volumes directly from them. Annie Harlow spearheaded this research and compilation of data.

In the second phase, the AWC team analyzed and interpreted the data collected. The team sharpened its focus and occasionally revised its assumptions. They then identified the key issues and questions for deliberation and feedback from the Advisory Board.

The third phase included the participation of the Advisory Board which served as an Addison County food system roundtable. Once-a-month, these key stakeholders, some of whom compete with each other, came together and were presented with a unique problem the team needed help with. They served as a sounding board to test the team's thinking and assumptions: they reacted, disagreed, gave suggestions and offered new direction.

Our advisory team of growers and buyers was instrumental in offering a variety of perspectives on navigating bottlenecks. These brainstorming sessions also included empirical data from our research. The Advisory Board became an effective steering committee and assisted in the direction of further research. Each member was also a primary source in our data collection.

Using the *Addison County Guide to Local Food and Farms*, we first identified all the potential vegetable and berry growers in the county. Data collection initially targeted growers familiar with local wholesale distribution. These tended to be larger-scale growers. Our conundrum was, and perhaps remains, how to best categorize growers in a manner that reflects the data we collected rather than our assumptions about how farms grow and distribute their produce. *Small, medium, and large* did not accurately describe our population of growers.

Our findings align with the *Farm and Food Enterprise Framework* developed and presented in **Appendix C** of the **Farm-to-Plate** report published by the Vermont Sustainable Jobs Fund. This strategic framework helps

growers identify their stage of business development and scale of their operations with the most appropriate markets.

A '*Crop Interest Summary*' worksheet was filled out by both buyers and growers to gather primary data. The following information was gathered: target prices, interest level in growing or purchasing locally, the estimated units to be grown or purchased by each account in season. Through phone and personal interviews, additional information was collected, including bottlenecks in distribution, packing, food safety and handling, online ordering, invoicing and credit processing. (SEE APPENDIX 3 for worksheet)

Twenty-five crops grown in the county were identified as potential candidates for distribution. These crops became the basis for our working template. The levels of interest from both buyers and growers were scored. Analysis of the data focused on targeting crop prices that were close enough to bridge other supply and demand factors. We further refined and modified our probe with a series of tactical questions to better match crop volumes and usage.

## 1. Who are the key buyers and growers who might use the brokerage service?

**Background:** 'How do we identify the crops and volumes that will support a local brokerage operation' and 'what does it take to support trucking operations?' Our goal: to identify key growers and institutional buyers. In January 2011, we began the process of gathering data by simultaneously interviewing growers and buyers.

We initially identified growers already adept at growing, harvesting and shipping to scale for institutional markets. The scaled-up growers included Rockville Market Farm, Lester Farm, Woods Market Garden, Lewis Creek, Lalumiere, Norris and Foggy Meadow. Institutions that provided purchasing information (in dollars and unit volumes) included but were not limited to Middlebury College, Porter Medical

Center, Middlebury Natural Foods Co-op, Abbey Group, Greg's Meat Market and the public school system.

**Findings:** Gathering primary information generally was not difficult. There were the expected challenges associated with contacting growers and buyers by both phone and email. Our findings included:

- Some targeted growers were too large and were not a match for some of our buyers based on the scale of their operations
- We needed to add smaller-scale growers to our data collection
- Not all growers wanted to participate in a local distribution network
- Wholesale prices were not of interest to many growers
- We needed to revisit our initial assumptions about the participation of certain buyers and the buy-in of certain growers

**Conclusion:** Each buyer and farmer is a distinct business that operates with unique characteristics, marketing plans, values and culture. The AWC brokerage concept was appealing to many but not all participants. Growers often commented on the challenges of competing with low wholesale prices. Buyers were very interested in exploring options that might expand their local food purchases. The work of the AWC was very attractive to a variety of users who see it as an opportunity to build an alliance to grow the local food economy. We were surprised that some of the growers we assumed would be on board had a number of reasons for not wanting to participate. These included:

- Grower's desire to keep prices at retail levels
- Farm-direct sales allow growers to control distribution
- Operating costs and pricing of the AWC brokerage were not known
- New grower not ready to commit to an unfamiliar market
- GAP certification standards
- Too small to open another distribution channel
- *Branding:* growers have built a brand and do not want it diluted through third-party handling

## 2. What key Addison County crops are available for wholesale distribution?

**Background:** Our research data was organized in a number of ways. First, we compared farm-gate prices with buyers' target prices. Then we projected dollar volumes based on farm-gate prices, calculated median farm-gate prices and the variances between the highest buyer price and the lowest grower price. We estimated potential market value by multiplying the lowest farm price times the projected buyer volumes by crop. Finally, we identified the price variances between growers, and the variances between the buyers' target prices and the growers' lowest prices. (SEE APPENDIX 1 for participants; APPENDIX 3 for worksheet).

Demand and pricing fell short on some crops. Since Middlebury College prepares 7,000 of the 10,000 institutional meals served daily in Addison County, we focused on the college's purchasing to evaluate whether we could secure the dollar volume needed to cover the operations of the wholesale brokerage.

Apples are readily available within the county and shipped direct to the college from Sunrise and Champlain Orchards. The \$36,000 in direct apple sales was removed from our projections.

We found a number of crops where prices did not meet the grower's average price and/or grower volume. These included: asparagus, red peppers, turnips, strawberries, potatoes, and black beans. We also identified potential opportunities for growers to increase sales to Middlebury College: cucumbers, sweet potatoes, cauliflower, and green beans.

**Conclusion:** The survey data, based only on the growers we interviewed, indicates a current potential volume for the AWC wholesale brokerage of approximately \$296,000 per year excluding apples. The estimated value of Middlebury College's demand for fresh produce is nearly \$106,000. However, based on what is currently available locally at acceptable prices, this demand drops to only \$30,000. Many items



evaluated in our study were high-volume summer crops from a number of growers with low-volume demand. This led us to explore the viability of different storage crops to increase institutional out-of-season purchases. (SEE APPENDICES 5-8 for supporting data)

### 3. Are growers and buyers interested in entering into advance production commitments or contracts?

**Background:** For the AWC to succeed, the College and other significant buyers would have to commit to purchasing significant volumes of local crops. Volume was the key to grower prices and to competitive rates for storage and trucking. Obtaining volume commitments and contracts became a decisive variable in assessing the feasibility of the brokerage model.

**Findings:** We estimated that the AWC would require production commitments in the neighborhood of \$50 – \$75,000 to launch. We asked the Advisory Board to discuss whether contract buying might be a strategy to increase institutional purchases. We discovered that our group of growers and buyers had little interest in contracting use and production agreements.

The growers surveyed were not interested in establishing formal commitments. Contracts are frequently not written in the best interest of growers due to the seasonal variability of weather, crops and spot pricing. Price guarantees are only made with a production commitment. Many growers who have delved into contract arrangements have discontinued them after incurring losses. Buyers in our survey have limited exposure to formal local foods contracting.

**Conclusions:** Both growers and buyers are reluctant to contract pre-buy or advance production agreements or commitments at this time. Production and market risks are perceived as challenges. The lack of formal contracts and agreements was noted to be a national trend, and not limited to Addison County, Vermont.

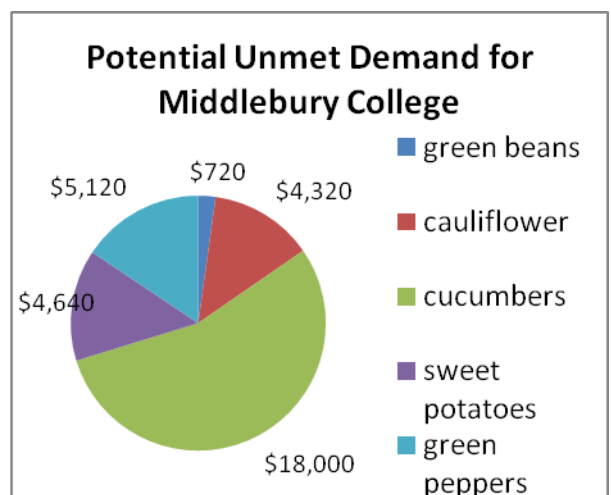
### 4. Is there sufficient volume to launch a wholesale brokerage?

**Background:** Data was formatted to identify crop volumes, interest levels among growers and buyers, price variances, median and average costs per crop. All the proprietary information submitted to the AWC has been kept confidential.

Two data summaries focused on the top ten crops: 1) a volume analysis comparing buyers’ needs and growers’ availabilities by crop and 2) a comparison of buyers’ maximum price and growers’ minimum farm-gate prices by crop. (See APPENDIX 7)

**Findings:** Supporting a brokerage requires that supply and demand variables like crop selection, volume and prices are in alignment. Optimizing the price and volume between growers and buyers is necessary to create a viable local distribution system. There are certain crops that meet buyers’ demands; however the prices the buyers are willing to pay are not a match with growers’ needs for profitability.

There is significant unmet demand on certain crops and frequently growers are not aware of these gaps. We are addressing this issue and seeking ways to create crop matches and opportunities. Middlebury College expressed interest in purchasing local crops currently not in sufficient supply.



The data suggest that there are opportunities for tomatoes, lettuce, green peppers, sweet corn and strawberries. Cauliflower showed up as a desired crop but without the necessary growers to meet the demand. Some of these are high-volume crops but may be of low-dollar market value.

Though price is often stated to be the driver in a deal, it is NOT always the primary factor; *quality matters*. Interestingly, not all buyers are seeking the highest quality grade. When ‘seconds’ are available, product can be utilized at a lower price, and can serve the needs of a buyer. Many institutions noted that they are willing to use their labor force to process lesser-grade produce. Adding value to culled products that cannot be sold at retail (such as pureeing winter squash) may increase sales opportunities for local growers.

The data suggests that the potential institutional demand for locally-grown fresh produce is limited at this time. Each crop has unique volume, pricing and production characteristics. (SEE APPENDICES 4 -7)

**Conclusions:** Sales of seasonal produce cannot generate sufficient revenue to support the brokerage. We lack the critical crop volumes and commensurate pricing to support wholesale distribution. Institutional demand fell short of our assumptions.

One option, as stated earlier, is to explore storage opportunities that might extend the flow of cash from produce through the fall, winter and spring months. Another option for building brokerage volume is researching potential value-added products that might contribute cash flow year-round.

Buyers *do* want to purchase local foods through the convenience of a local wholesale brokerage and distribution network. However, areas of concern were consistent supply, food safety and handling certifications, standard shipping containers, delivery windows and receiving policies, invoicing and product traceability, credits and time spent ordering.

NOTE: The pricing information gathered in our study

from buyers assumes *delivery to their door*. The farm-gate pricing from growers does NOT include AWC’s costs of operations, shipping, and handling. These additional costs include:

- Delivery surcharges
- Invoicing
- Credit management
- “Hub” warehousing costs
- Storage room costs

## 5. What crops could benefit most from long-term storage?

**Background:** Our next step was to explore the feasibility of a regional storage facility. We focused on crops that: 1) are currently grown in significant volumes or that have the potential for increased production in the county, 2) store well, and 3) are desired by buyers. The simple question had a complex answer.

**Findings:** Carrots, cabbage, beets, and winter squash were the top candidates. However, to better evaluate the benefits of long-term storage, we needed to delve deeper into the operating risks involved in storage and the management of variables like temperature, relative humidity and estimated shrink or loss for each crop.

Each crop is unique and stores differently. Annie conducted extensive interviews with New England

Crop	Harvest Price	End of Season Storage Price	Differential / percentage between beginning & end storage	Storage Shrink rate
Beets	24.00	18.00	6.00 / 25%	32%
Cabbage	24.00	12.00	12.00/ 50%	33%
Carrots	22.00	22.00	0 / 0	25%
Winter Squash	21.00	18.00	3.00 /14%	18%
Onions	37.00	30.00	7.00/ 19%	15%

growers and shippers who manage storage facilities. Cornell University provides a comprehensive database on storage crops as do state extension services. Research was also obtained from Deep Root Growers Coop about local storage crops, room efficiencies and crop decomposition rates. We also read The Intervale Community Farm's 2010 report on their new winter storage facility. (SEE APPENDICES 10-11 for comprehensive storage research data and information)

Vermont Refrigerated Storage (VRS) provided us with a room rental rate that was assumed to be the cost for the storage period from the early fall through winter. Unfortunately, we found out after the work was completed, that the rate they quoted was actually a short-term storage rate for their 'off-season' (summer). When their long-term storage rates are finalized we will re-evaluate our assumptions.

Storage challenges that were addressed included the co-mingling of product between several growers and decomposition rates, and warehouse management of quality assurance based on *best-practices* for product handling. Optimizing the quality of product coming from the farm into the storage facility is the key to minimizing product breakdown while in storage. Concerns expressed included:

- Product ownership throughout the storage period
- Liability
- Waste management
- Changes in market pricing and inventory holding costs
- Decrease in product quality with length of storage period
- Variability in pricing from early season price when the market is flush with good quality product vs. end of storage period

Storage analysis initially focused on carrots, cabbage, beets, parsnips, onions, winter squashes, sweet potatoes and potatoes. We evaluated storage costs for each crop (per unit) per month and calculated the volume needed to cover rent for three specific rooms. The estimates did NOT include the cost to retrofit the

existing rooms. Estimates were based on the quoted rental rate and the storage characteristics of each crop.

Institutional buyers indicate that there are opportunities for increased production volumes if storage were available. For instance, sweet potato usage would increase with adequate storage capacity and a suitable market price. Onion production does not currently match use and there are large pricing discrepancies. If the production price could be lowered, sales would increase. However, with storage capacity factored into the formula, a local onion crop does not have high potential. The delivered cost of a stored onion exceeds what the market will pay. (SEE APPENDIX 10 for more information on storage crop variables)

Some large-scale county growers of cabbage, carrots, and winter squash have expressed interest in potentially expanding production for wholesale distribution; Rockville, Scott, and Lalumiere.

**Conclusions:** Cost-benefit analysis of long-term storage crops indicate that carrots, cabbage, beets, onions and winter squash offer potential opportunities. Current local production volume of storage crops cannot support the costs of storage unless commingled with regional supply. Product ownership, branding and storage costs were concerns to growers.

Vermont Refrigerated Storage has received a USDA Rural Business Enterprise Grant and is currently conducting an economic feasibility study of bulk processing, freezing and storage for institutional outlets. VRS has a facility that can potentially be retrofitted for expanded storage use for select produce. Long-term storage rates are yet to be determined. The storage cost and shrink associated with out-of season handling would add another layer of cost to the farm-gate price. Crops suitable for storage are not within Addison County grown at the volume to support VRS. The facility would require regional supply from growers in southern Vermont and New York to create a viable storage business.

## 6. Would long-term storage leverage supply and demand?

**Background:** Analysis of the institutional data suggests there is potential for increasing crop production through long-term storage. On a crop-by-crop basis, we estimated the potential for increased purchasing by specific buyers.

**Findings:** Middlebury College is interested in exploring storage options at Vermont Refrigerated Storage, currently one of the largest apple storage facilities in the state. Dining Services is required to deliver its *cost per plate*. Any local product they buy has to fit the overall pricing in place *per plate*.

In the past 3 years there has been a decrease in local foods purchases. The College has expressed interest in expanding purchases of black beans, onions, grains and winter storage crops. They want to incorporate more seasonal produce into their menus but are concerned that they not buy too much of any one item when it becomes abundant locally. The narrow range of available crops leads to over-use on menus. They would like to expand the range of local crops it can buy to serve more diverse dishes. Storage might potentially expand product availabilities.

Storage benefits to buyers:

- Menu adaptation and increased purchases of a wider range of local items
- Smaller institutional buyers need spilt case access to enable small purchases
- Availability of local crops over a longer period of time

The primary crops with the highest potential for distribution through storage at VRS are currently broken into two categories *according to their specific storage requirements*:

*Category 1:* carrots, beets, cabbage, parsnips, turnips

*Category 2:* winter squash, onions, potatoes, and sweet potatoes.

(SEE APPENDICES 10-11 for storage information)

*Consideration should also be given to building new storage capacity to increase the year-round availability of local food for all types of markets (including processing markets), as an interim step in the development of additional multipurpose aggregation centers.” - Vermont F2P*

**Conclusions:** Farm-gate retail prices are currently more advantageous to our grower community than wholesale pricing. Middlebury College would like to leverage its buying power to expand the local foods economy by purchasing large quantities of product in season and storing it for later use. However, prices must be competitive with current market prices averaged over the course of the year.

There is currently not enough combined institutional buyer demand to make efficient use of the available capacity at VRS. Nor is there sufficient supply of storage crops in Addison County. As stated above, viability would be dependent on tapping regional growers to operate at full storage capacity at a favorable per unit storage cost.

## 7. Is there sufficient volume to make long-term storage viable?

**Background:** To answer this question, three VRS storage rooms were hypothetically filled with crops produced by Addison County growers. Storage costs per crop, market pricing and storage volumes are all factors that drive the economics of scale in storage operations. The crops we evaluated were carrots, beets, cabbage, winter squash and onions.

**Findings:** Once again, pricing is a key driver. Wholesale pricing is based on volume. Growing and distributing food efficiently at commodity scale expands throughput and dramatically lowers unit costs. Many local growers seek retail over wholesale pricing which, in turn, reduces the potential production volume for crops that might be stored at a local facility. This was

true of our Advisory Board members and growers of all sizes.

The costs associated with managing stored inventory over the course of the season need to be offset by end-of-season market prices. For instance, some have suggested that cabbage might be a great storage crop for Addison County. Cabbage is not a high-return value crop for growers and the market is prone to strong regional and national pricing competition.

**Conclusions:** At this time, there is neither the volume of product, nor the interest from enough producers to support local storage at VRS. Further study will be required when VRS completes its analysis of long-term storage rates.

## 8. How can new business relationships between growers and buyers be developed?

**Background:** We had expected that the launch of the AWC brokerage would drive ACORN's goal of increasing food sales in Addison County. But the data from the planning study indicated that there was not sufficient volume to support a brokerage. We reviewed past successes in relationship building and looked for other ways to advance our work.

We have grown our community network over the years through *Farm-to-School*, the local food guide, conferences and events. What other opportunities might there be to develop and deepen business relationships between growers and buyers? Matchmaking events, based on the Vermont Fresh Network model, and online markets made sense to us as complementary ways to build new relationships.

**Findings:** Farmers and buyers want to know each other. Creating opportunities is vital. As we learned in our Advisory Board meetings, the geography of the county plays a deciding role in matching particular growers and buyers. There are many growers who need support developing new accounts with potential buyers. In our

interviews, a number of buyers expressed frustration not knowing how to find growers who could supply their needs.

Developing relationships between growers and buyers has been a key element in ACORN's work in the last couple of years.

**Stone Soup** is a county-wide local food summit attended by foodservice providers, teachers, farmers and school administrators.

This **Farm to School** networking and problem-solving forum addresses the obstacles and best-practice opportunities to develop food curriculum, create gardens, and foster relationships between foodservice and growers.

ACORN produces an award-winning **Addison County Guide to Local Food and Farms** in collaboration with the Addison Independent, a local newspaper, and the advertising support of local food and farm businesses. Over 10,000 copies were distributed in the county our first year. In March 2011, we released our second edition with topical articles, grower profiles, recipes, a grower directory and GIS map of local producers.

The first **Addison County Matchmaker** for local buyers and growers was held on March 30<sup>th</sup> at Middlebury College. We had 25 attendees who were each delighted to make 2-3 new business connections. It was such a success that a second Matchmaker will be held on October 24<sup>th</sup>. Designed like a speed-dating event, the Matchmaker helped bridge perspectives between buyers and sellers and permitted us to match pairs of growers and buyers of a similar scale of business. Unlike other matchmaker events, ours was geared only

### Relationship Building

*Stone Soup F2S Forum*

*Matchmaker Event*

*Local Food Guide*

*Online Marketplace*



to local buyers and sellers and did not include processors or distributors.

Both parties had pre-arranged matches based on the data we had collected and on Annie Harlow's knowledge of the local market. The two-hour, fast-paced format allowed for 7-minute one-on-one meetings with plenty of time built into the schedule for participants to network and 'work the room'. Both buyers and growers found this format helpful in growing their relationships and businesses. We also received favorable feedback and support for developing the online market platform. (See APPENDIX 3 for list of attendees; APPENDIX 12 for template)

There is significant interest from buyers and growers to expand transactions through a local, **online market platform**. We are currently researching the first phase of a comprehensive online ordering system that will easily link growers and buyers. We hope to identify the features our growers and buyers want from the online market and match them with the best features available from existing web-based platforms.

**Conclusions:** ACORN has developed a strong network in Addison County; an online ordering platform is a cost-effective way to accelerate connectivity and business opportunities between buyers and growers.

## 9. Might an online market stimulate wholesale market growth?

**Background:** There is enormous interest nationally right now in leveraging information technology to connect growers and access markets. Many farms have developed websites, blogs and even offer limited online ordering directly from their farm websites. The trend we have observed over the last 18 months in Vermont is that growers are seeking to expand their markets; both within the state and through a variety of distribution channels to reach new, untapped markets out-of-state.

Most of the current online platforms for local foods are designed to serve growers and tend to overlook the needs of buyers. Our premise is that both stakeholders are equal in their contribution to growing a successful local food system

**Findings:** Farmers' markets in Addison County are saturated and are not generating increased sales for established growers. In the past five years, there has been an increase of new growers in the county at a rate that has not been supported entirely by the 'localvore' movement. Declining receipts at farmers' markets has forced many truck farmers to eliminate or reduce their presence at these markets. The business of growing, harvesting, washing, and packing produce, trucking, setting-up, selling and taking down has not been financially viable. The actual *hourly* rate has decreased—despite the perception of vibrant farmers' markets.

### Key Questions for Online Platform:

- *Are we increasing total sales throughout the county or are we just shifting existing sales.*
- *Is growth due to out-of-state sales?*
- *Are new farms meeting unmet demand?*

Similar scenarios, an over-supply of producers competing for limited outlets and customers, are seen at the Co-op and seasonal farm stands.

Distribution out-of-state is an increasingly appealing option for Vermont growers, including some in Addison County. Pre-paid online "farmers markets," CSAs and buying clubs in NY, MA and CT have become viable markets for local growers. These partnerships support Vermont farms, and play to tech-savvy, busy consumers who desire connections to the land and to growers through quality food. For the farmer, they are able to capture *retail pricing* or a price that is at least higher than wholesale. The goal is to find markets that are financially favorable to the grower and that are supported by values-driven consumers.

Marketing through online platforms helps to expand sales to otherwise difficult-to-penetrate markets. *Farmers to You* and *Graze Delivered* are partnering with local growers for participation in online ordering and out-of-state delivery. The cost-effectiveness of these new models has not yet been determined.

ACORN is working with several institutions to track their current local food sales on a quarterly basis. A transactional online platform would give us the empirical data to actually measure and track sales and growth throughout the food system.

We anticipate actively contributing to on-farm profitability by providing opportunities by offering online costing tools. Many growers operate without a keen understanding of the actual cost to produce each crop. It is not uncommon for vegetable growers to share pricing information on list serves. What pricing the market will bear is rarely relevant to a grower's actual cost of production. Growers often do not consider indirect costs when pricing products. A lack of clarity about cost leads to uncertainty reducing opportunities for profitability.

Lester Farm, a new arrival to Addison County, saw this scenario played out first-hand when they compared in-season retail and direct-market prices for tomatoes. When they farmed back on Long Island, their price was \$1.75 per pound for excellent first-quality tomatoes. This price included their production costs and provided a healthy margin. In Vermont, \$3.50 to \$4.00 per pound was the norm for *all* growers regardless of their size or operations.

We believe that the availability of online options to market and sell produce will naturally benefit most growers by facilitating access to new markets. Online sales may also accelerate the shift to more favorable pricing and production efficiencies. (SEE APPENDICES 13-16 for details on online research and findings)

**Conclusion:** ACORN will continue to develop an online platform as an important tool to build markets for produce grown and distributed in Addison County and

regionally. According to the USDA, Food Hub in Oregon, Foothills Direct in North Carolina, and the Wallace Center at Winrock International, local food sales are increasing through the creation and expansion of web-based systems. The AWC sees the online platform as an opportunity for our growers and buyers to build more profitable operations based on our local food economy.

Addison County growers and buyers are interested in participating in an online marketplace. Further research is needed to determine if sales can be increased through buyers and sellers utilizing an on-line platform.

## 10. What are the key features of an online platform?

**Background:** An eight-person working group comprised of four local growers and four buyers has been formed to assist the team's next development efforts to design an online platform based on users' needs. The ACORN team has also been researching online platforms that support local and regional food systems. Our investigation reveals a dynamic and fast-changing marketplace of ideas and initiatives at varying stages of development. We have identified a variety of platforms from which we are gleaning key features and functionalities that might be tailored to our needs. We have yet to determine whether we will purchase existing software or build a custom platform.

**Findings:** The design of the online platform will incorporate the best features from a variety of web-based systems. Key design attributes the team has identified include:

- Simple, easy-to-use, and user-centered design
- Equal weighting to the needs of growers and buyers
- Meets the scale and needs of different users
- Supports and streamlines transactional relationships
- Offers administrative efficiencies for buyers and growers
- Local management and ownership
- Replicable and scalable for statewide and regional application

The layout of this website will be simple, easy-to-use, and will prominently feature the farmer and buyer as equal partners. The landing page of the website will be two-fold, depending on who is accessing it. The farmers will login and immediately see fields for adding and editing their product list. The buyers will see an aggregated list of all of the products available for sale.

Each registrant will have a biographic section for promotional purposes. A buyer may choose to feature sample menus and website so growers understand their needs and to build the relationship. Growers will have the same opportunities to share “*What’s Up Down on the Farm*” updates along with photos and farm events. The marketplace will be the real driver: if price and quality do not match the needs of buyers, they will choose to purchase from other growers in our system. (SEE APPENDICES 14-17 for more details)

**Conclusion:** ACORN will design a simple-to-use, easy-to-access platform that streamlines operations and increases local food transactions in the region. Some of the platforms we have found most interesting include:

- <http://www.farmigo.com/>
- <http://www.localorb.it>
- [sourceforge.net/projects/foodcoop/](http://sourceforge.net/projects/foodcoop/)
- <http://harvesttomarket.com/>

Continual feedback from users and from the Advisory Board will be vital to the design process. ACORN will roll out an online platform primarily geared to serve the needs of growers and buyers in Addison County. We are leaving open the option to expand the platform statewide throughout Vermont and to be able to transact out-of-state sales in the future.

## 11. What standards and guidelines, branding and marketing will facilitate use of an online platform and build value for users?

**Background:** Creating a successful online platform requires an understanding of local market dynamics. Through online networking, smaller growers can not only reach a much larger number of accounts but their small orders might be potentially aggregated into a larger order and sold to a larger buyer. The larger the farm,, the greater the need to develop new markets for distribution. We anticipate that the online platform will enable both small and large growers to expand their distribution options.

Market forces will ultimately dictate what buyers are looking for and which sellers offer the best fit. In order to open new channels for the local distribution of produce, compliance with existing standards and guidelines will be necessary.

### Online Features to Consider

- Product availability and farm origin
- Member profiles for buyers and growers
- Pricing visible to buyers only
- Link to Quickbooks
- Security as a login-member service
- Home page publicly accessible
- Production criteria: GAP, Certified Organic, Organic not certified etc.
- Traceability back to farm
- Scalable for distribution component
- Credit tracking and administrative reports
- Multiple search criteria
- Payment options: prepay, “ACORN Bucks”
- Promotional opportunities
- Links to ACORN workshops
- Transaction fee and membership fee
- Email confirmation of orders

**Findings: Marketing Matters!** It is clear that both user groups want recognition and increased exposure for their farm or business, their products or services and their brands. Online marketing opportunities include:

- Links to each farm’s website
- Comprehensive listing of where each farm sells their food
- Links to the Middlebury farmers’ market
- County-wide calendar of events with tie-ins to the agricultural community
- *New Members* listed weekly
- Weekly email updates of new products
- Specialized filtering functions to categorize products and services
- Crop updates

Each buyer has unique purchasing parameters and each grower offers distinct products and features. Through online ordering, the scale of growers can be less of a driver if efficient distribution is in place. For some buyers at medical centers and for recipients of federal operating funds, for example, there are mandates to buy only from growers whose farms have been certified by the USDA’s GAP (Good Agricultural Practices) program. Growers adhering to GAP guidelines will have access to these buyers. The online platform will provide links to food safety plans for farms. Voluntary participation by growers allows buyers to transact business according to values important to them. The AWC will take the lead in notifying growers about scheduled GAP trainings.

Promotion and branding are two-fold: *from the inside out* (push) and *from the outside in* (pull). The ACORN Network will have ample opportunities to promote the online platform through its organization. Our database, website, newsletter and contacts with local media offer a variety of ways we can influence public opinion and market the benefits of the platform. Periodic matchmaking events will offer significant opportunities for marketing and recruitment of new users.

Most farms have signature items or distinct branding in place. Our intention is to maintain brand identities as we promote a collaborative effort online. Our

promotions for members need to address the perspectives of each group to answer the questions:

- Are we complementing their current marketing efforts to increase sales?
- Can we get feedback from users for improving the interface exchange?
- Can each farm be promoted in such a way to maintain farm brands?

Buyers look at many variables to build operational efficiencies. In our interviews with buyers, we consistently found that pricing matters. However, delivery and packaging were also mentioned as substantive factors in their decision-making.

AWC will strive to assure product quality through the implementation of a grading system. Grading levels establish quality on a crop-by-crop basis by taking into consideration appearance, size, weight, blemishes etc. Produce industry standards have evolved to ensure product integrity and traceability which offer important efficiencies and benefits to the end user. AWC will also develop product labeling and traceability standards to track every product moving through the system. These features can influence buyers’ decisions as much as price and quality.

Standard operating procedures vary from farm to farm so AWC must ensure uniformity in packing. To ship through AWC, the final product will have to meet standards that uphold the values of our customers. Several options are available to standardize packaging including using new standard produce boxes or collapsible, washable reusable bins.

Cultivating an ACORN brand and logo could help build county-wide awareness and recognition for local produce and value-added products. The idea is similar to the Vermont Fresh Network’s branding campaign using window stickers, signage and a logo that can be downloaded by members. Branding and promotional programs conducted by regional organizations have met with success across the country.

Weekly email updates as well as linking and networking with other local resource groups will also help promote the platform and increase the user base. For example, apps such as Local Orbit's LOCAVORE might publicize what local products are in season in Addison County.

**Conclusion:** We intend to create a marketing system where product integrity, shipping standards, and traceability support the development of a robust local foods market. That said, we are not regulators - it will be difficult, for example, to micro-manage harvest and post-harvest practices. Product traveling through our system will ultimately have to compete with national and international produce.

The learning curve will be steep. A simple online platform design must have a broad enough appeal to address and meet the evolving needs of users. Once implemented, the design will require continuous improvement and adjustments in response to the feedback from users.

## 12. What aggregation and export opportunities might the online platform enable?

**Background:** Research into food hubs reveals that opportunity exists for growers to aggregate products for local distribution. AWC research is in the initial stage of review of current national practices. Based on the experience of online platforms in operation, an increase in sales by growers of all scales can be expected over a three to five year period.

**Findings:** There are multiple models available to develop new market opportunities:

- Direct deliveries from farm to distribution centers
- Food Hub picks up product at farms and delivers to buyers
- Small-scale growers work cooperatively to move product to aggregation sites
- CSA delivery models: both local and regional
- Prepay: direct ordering and aggregation of local products for future delivery.

- Institutional CSA at workplaces
- Institutions can purchase product from several farms but which is consolidated into one order
- Buying clubs
- Increase product availability: scaling up of product selection across all categories of locally-produced foods
- Promotion of Addison County products to target buyers beyond the county

**Conclusion:** Early stage research indicates that there is great potential for online platforms to increase opportunities for delivery to regional markets. Based on USDA's survey of Food Hubs, we expect the AWC to reach operational viability in a three- to five-year time frame. Local and regional food purchasing is increasing significantly nationwide and efficiencies in accounting, bookkeeping and promotion offer users ancillary benefits. As an example, an online platform can expose new opportunities for small and large scale growers to modify their crop mix and better respond to changing local needs.

## D) Looking ahead

AWC will continue to work with various collaborators. Here are some of our next steps:

- Conduct beta-test of our online ordering platform August 2011
- Host Matchmaker event at Middlebury College on October 24, 2011
- Support the development of a workplace CSA at Middlebury College
- Sponsor GAP certification, technical assistance and food safety workshops for buyers and growers
- Evaluate micro-distribution options tailored to Addison County's geography and needs of existing farmers
- Explore food-centered business opportunities based on profitability
- Serve as a food systems clearinghouse
- Networking and alliance-building for food processors and production kitchens in the county



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## E) Closing Thoughts

Over the past five months, the AWC has networked with Addison County stakeholders and with state, regional and national organizations to learn how we can better serve the needs of our growers and buyers.

We have fostered new relationships and gathered new market data about our local food economy. The AWC has brought together growers and buyers as community partners and advisors, and grown a bottom-up model for local food development. We believe that one of the keys to rebuilding a viable food system is to understand and to integrate the needs of both growers and buyers.

Increasing local food production and sales is a complex undertaking. One of the biggest challenges is to achieve the needed volume and efficiency in the distribution of food from the farm to the end user in the condition they expect to be competitive.

While our initial focus has been on fresh produce, we recognize that we will also need to incorporate other product categories like meat and dairy, and other value-added foods to build market volume.

The long-term goal of this work is to grow profitable farm business enterprises. The statewide *Farm-to-Plate* initiative is a 10-year plan to create viable small agriculture-based businesses. The work that we have undertaken is providing vital information and data that speaks directly to the goal of creating a dynamic, farm-based economy in Vermont.

We would like to thank our advisors who were integral to our process and to our results. We are grateful to everybody who gave their time and attention to furthering this important work on behalf of our county. We hope that our efforts will not only benefit Addison County growers and buyers but our entire regional food system.

## **Appendix 1 Research Participants**

### **Buyers:**

#### **Buyers:**

Abbey Group  
Addison Northeast Supervisory Union  
Greg's Meat Market  
Middlebury Natural Foods Co-op  
Porter Medical Center  
Patricia A. Hannaford Career Center  
Middlebury College

#### **Growers:**

Champlain Orchards  
Elmer Farm  
Gildrien Farm  
Golden Russet  
Lalumiere Farm  
Last Resort  
Lewis Creek  
Norris Berry  
Rockville Market Farm  
Scott Farm  
Sweet Hill  
Woods Market Garden

#### **Secondary sources:**

Full Moon Farm  
Foggy Meadow  
Lester Farm  
Otter Creek Farm  
Vermont Refrigerated Storage

## **Appendix 2 Matchmaker Participants**

### **Buyers:**

Abbey Group  
Addison Central Supervisory Union  
Addison Northeast Supervisory Union  
Basin Harbor Club  
Café Services  
Greg's Meat Market  
Patricia A. Hannaford Career Center  
Middlebury College  
Middlebury Natural Foods Coop  
Mountain Greens  
Northland Job Corps  
Vermont Refrigerated Storage

### **Growers:**

Brookside  
Champlain Orchards  
Elmer  
Gildrien  
Golden Russet  
Groundworks  
Lalumiere  
Lewis Creek  
Norris Berry  
Otter Creek  
Sunrise Orchards

# Appendix 3 Crop Interest Summary Worksheet

**AWC Crop Interest Summary - Growers**

Crops	Price Target	Price Floor	Grower:		
			Interest	Units	# of units
<b>Apples</b>	<b>example 30.00</b>	<b>\$23.00</b>	<b>4</b>	<b>40#</b>	<b>100</b>
Asparagus				10#	
Beets				25#	
Blueberries				12 pints	
Broccoli				20#	
Brussel Sprouts				10#	
Cabbage				40#	
Carrots				25#	
Cauliflower				each	
Green Beans				10#	
Green Peppers				10#/25#	
Kale				24 ct	
Lettuce				24 ct	
Mesclun				3#	
Onions				25#/50#	
Parsnips				25#	
Potatoes				25#/50#	
Red Peppers				10#/25#	
Spinach				20#	
Strawberries				8 qt	
Summer Squash				20#	
Sweet Corn				5 dozen	
Sweet Potatoes				40#	
Tomatoes				10#/20#	
Turnips				25#	
Winter squash				40#	
Zucchini				20#	
Black Beans Dry				25#	

**DATA COLLECTION**

This worksheet became the basis for data collection for our county-wide study. Through email, mail, phone calls and personal interviews, Annie Harlow addressed pricing, crop and purchasing volumes or to simply clarify ACORN’s mission. Her institutional and market knowledge was critical to the project, identifying data gaps, inconsistencies and redirecting the approach where necessary.

We sought crop information that would determine the efficacy of a local wholesale distribution network. Growers chose the crops that they would be interested in distributing through the network and indicated their relative interest on a scale of 1 to 5. Many farms have developed retail brands that capture higher margins and generate high revenue making wholesale less attractive. Some did indicate that selling wholesale through the AWC could be of interest if the demand were. This form was modified for use by buyers. Participants were encouraged to add products not listed. Additions resulted in incomplete data, but did provide crop interest in cucumbers, melons, potatoes, and raspberries.

## Buyer Data

Crops	Units	Size	Target Price	Highest Price Max	Projected Total Units Needed	Projected Sales based on Max Price	cumulative total sales
Apples	lbs	40	\$15.00	\$23.00	1,824	\$41,952.00	\$41,952.00
Broccoli	lbs	20	\$12.50	\$30.00	1,208	\$36,240.00	\$78,192.00
Spinach	lbs	20	\$25.00	\$60.00	600	\$36,000.00	\$114,192.00
Green Peppers	lbs	10	\$9.00	\$24.00	1,100	\$26,400.00	\$140,592.00
Mesclun	lbs	3	\$8.20	\$10.00	1,800	\$18,000.00	\$158,592.00
Tomatoes	lbs	10	\$11.15	\$27.00	615	\$16,605.00	\$175,197.00
Potatoes lb	lbs	50	\$13.00	\$17.00	860	\$14,620.00	\$189,817.00
Lettuce	ea	24	\$12.00	\$26.00	458	\$11,908.00	\$201,725.00
Carrots	lbs	25	\$12.50	\$18.00	591	\$10,638.00	\$212,363.00
Onions	lbs	50	\$15.50	\$22.00	390	\$8,580.00	\$220,943.00
Cauliflower	ea	1	\$1.25	\$3.50	1,800	\$6,300.00	\$227,243.00
Winter squash	lbs	40	\$18.00	\$40.00	120	\$4,800.00	\$232,043.00
Potato B	lbs	50	\$17.00	\$19.00	245	\$4,655.00	\$236,698.00
Sweet Potatoes	lbs	40	\$28.00	\$28.00	160	\$4,480.00	\$241,178.00
Summer Squash	lbs	20	\$10.00	\$18.00	242	\$4,356.00	\$245,534.00
Zucchini	lbs	20	\$11.50	\$17.00	255	\$4,335.00	\$249,869.00
Blueberries	pints	12	\$24.00	\$32.00	110	\$3,520.00	\$253,389.00
Potato Russet	lbs	50	\$16.50	\$20.00	152	\$3,040.00	\$256,429.00
Cabbage	lbs	40	\$9.00	\$25.00	95	\$2,375.00	\$258,804.00
Sweet Corn	ea	60	\$13.75	\$25.00	70	\$1,750.00	\$260,554.00
Cantaloupe	ea	1	\$1.15	\$1.45	1000	\$1,450.00	\$262,004.00
Cucumbers	lbs	25	\$23.00	\$29.00	50	\$1,450.00	\$263,454.00
Turnips	lbs	25	\$18.50	\$30.00	39	\$1,170.00	\$264,624.00
Asparagus	lbs	10	\$24.00	\$28.00	40	\$1,120.00	\$265,744.00
Red Peppers	lbs	25	\$24.00	\$31.00	31	\$961.00	\$266,705.00
Brussels Sprouts	lbs	10	\$14.50	\$30.00	30	\$900.00	\$267,605.00
Parsnips	lbs	25	\$24.80	\$30.00	28	\$840.00	\$268,445.00
Green Beans	lbs	10	\$18.00	\$25.00	30	\$750.00	\$269,195.00
Strawberries	ea	8	\$17.00	\$24.00	30	\$720.00	\$269,915.00
Black Beans	lbs	25	\$18.45	\$18.45	35	\$645.75	\$270,560.75
Beets	lbs	25	\$10.63	\$12.00	40	\$480.00	\$271,040.75
Potatoes red A	lbs	50	\$15.00	\$22.00	20	\$440.00	\$271,480.75
Kale	ea	24	\$14.70	\$20.00	22	\$440.00	\$271,920.75
Raspberries pints	ea	1	\$2.25	\$2.75	96	\$264.00	\$272,184.75
Tomatoes	lbs	20	\$20.00	\$25.00	6	\$150.00	\$272,334.75
Onions	lbs	25	\$12.50	\$12.50	1	\$12.50	\$272,347.25
<b>TOTAL</b>						<b>\$272,347.25</b>	

## Appendix 4 Cumulative Buyer Data: Dollar Volume Projections of Market Demand

This data was generated from the compiled data of the Crop Interest Summaries of buyers. It represents potential market demand.

## Grower Data

Crops	Highest Price Target	Lowest Price Floor	Projected Total Units Available	Median	Projected Farm-gate Dollars Based on Price Min
Apples	\$36.00	\$22.00	88,000	\$29.00	\$1,936,000.00
Asparagus				#NUM	\$0.00
Beets	\$50.00	\$21.00	240	\$35.50	\$5,040.00
Black Beans	\$50.00	\$44.00	80	\$47.00	\$3,520.00
Blueberries	\$60.00	\$60.00	50	\$60.00	\$3,000.00
Broccoli	\$35.00	\$22.00	130	\$28.50	\$2,860.00
Brussels Sprouts	\$25.00	\$22.00	140	\$23.50	\$3,080.00
Cabbage	\$28.00	\$14.00	780	\$21.00	\$10,920.00
Cantaloupe	\$3.50	\$1.25	1240	\$2.38	\$1,550.00
Carrots	\$25.00	\$20.00	200	\$22.50	\$4,000.00
Cauliflower	\$2.00	\$1.00	200	\$1.50	\$200.00
Cucumbers	\$18.75	18.75	360	\$18.75	\$6,750.00
Green Beans	\$20.00	\$17.00	120	\$18.50	\$2,040.00
Green Peppers	\$25.00	\$15.00	96	\$20.00	\$1,440.00
Kale	\$48.00	\$22.00	402	\$35.00	\$8,844.00
Lettuce	\$60.00	\$20.00	453	\$40.00	\$9,060.00
Mesclun	\$19.50	\$16.50	1000	\$18.00	\$16,500.00
Onions	\$50.00	\$25.00	590	\$37.50	\$14,750.00
Onions	\$70.00	\$25.00		\$47.50	\$0.00
Parsnips	\$50.00	\$20.00	190	\$35.00	\$3,800.00
Potato B					\$0.00
Potato Russet					\$0.00
Potatoes lb	\$40.00	\$22.00	100	\$31.00	\$2,200.00
Potatoes red A					\$0.00
Pumpkins	\$0.12	\$0.12	1000	\$0.12	\$120.00
Raspberries pints	\$4.00	\$3.35	100	\$3.68	\$335.00
Red Peppers	\$62.50	\$22.00	95	\$42.25	\$2,090.00
Spinach	\$80.00	\$80.00	75	\$80.00	\$6,000.00
Spinach	\$0.00	\$0.00	0	\$0.00	\$0.00
Strawberries	\$40.00	\$24.00	1200	\$32.00	\$28,800.00
Summer Squash	\$30.00	\$14.00	634	\$22.00	\$8,876.00
Sweet Corn	\$20.00	\$12.50	2200	\$16.25	\$27,500.00
Sweet Potatoes	\$30.00	\$27.00	50	\$28.50	\$1,350.00
Tomatoes	\$28.00	\$20.00	5100	\$24.00	\$102,000.00
Tomatoes	\$35.00	\$18.00	100	\$26.50	\$1,800.00
Tomatoes	\$20.00	\$16.00	50		\$800.00
Turnips	\$25.00	\$22.00	70	\$23.50	\$1,540.00
Winter squash	\$40.00	\$16.00	420	\$28.00	\$6,720.00
Zucchini	\$30.00	\$14.00	634	\$22.00	\$8,876.00
				<b>Cumulative Total</b>	<b>\$296,361.00</b>

## Appendix 5 Cumulative Grower Data: Dollar Volume Projections of Market Supply

This data is from growers and represents the price ranges and cumulative total of area produce, excluding apples. It represents current potential market supply.



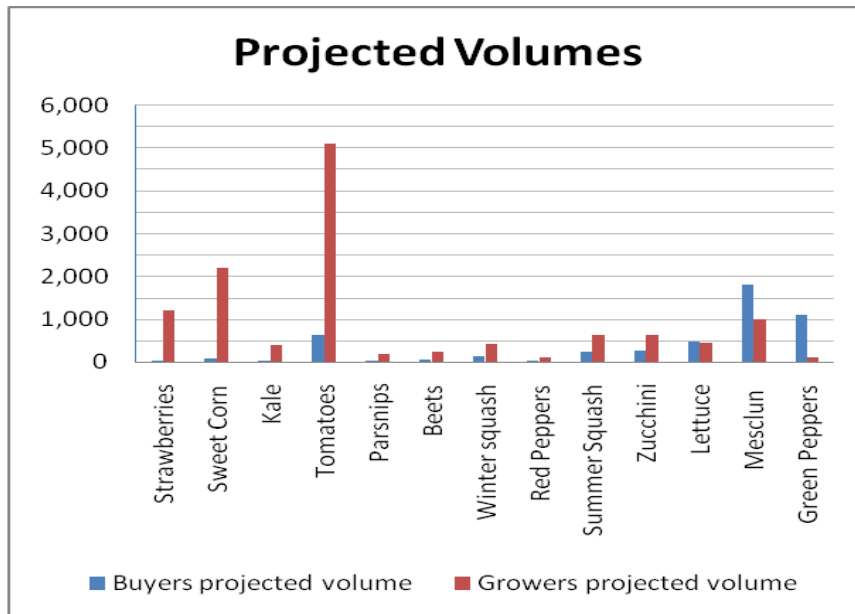
## Appendix 6 Grower Farm-Gate Pricing by Crop

This was generated from the Crop Interest Summary worksheet of growers. This represents the range of target prices per crop.

	target price	minimum price	average price
Apples	\$22.00	\$22.00	\$22.00
Asparagus	\$0.00	\$0.00	
Beets	\$37.50	\$21.00	\$26.10
Blueberries	\$60.00	\$60.00	\$60.00
Broccoli	\$35.00	\$14.00	\$23.67
Brussels Sprouts	\$22.00	\$20.00	\$21.00
Cabbage	\$28.00	\$14.00	\$22.40
Carrots	\$25.00	\$20.00	\$22.33
Cauliflower	\$2.00	\$2.00	\$2.00
Green Beans	\$25.00	\$17.00	\$21.00
Green Peppers	\$20.00	\$15.00	\$17.33
Kale	\$72.00	\$22.00	\$42.00
Lettuce	\$48.00	\$20.00	\$30.00
Mesclun	\$16.50	\$16.50	\$16.50
Onions	\$1.80		\$1.33
Onions	\$40.00	\$40.00	\$40.00
Parsnips	\$40.00	\$20.00	\$28.75
Potatoes lb	\$40.00	\$22.00	\$31.00
Red Peppers	\$62.50	\$50.00	\$29.83
Spinach	\$80.00	\$80.00	\$80.00
Strawberries	\$35.00	\$24.00	\$29.96
Summer Squash	\$25.00	\$14.00	\$17.13
Sweet Corn	\$20.00	\$12.50	\$17.63
Sweet Potatoes	\$27.00	\$27.00	\$27.00
Tomatoes	\$24.00	\$19.00	\$20.75
Tomatoes	\$35.00	\$18.00	\$24.25
Turnips	\$25.00	\$22.00	\$23.50
Winter squash	\$28.00	\$16.00	\$22.29
Zucchini	\$25.00	\$14.00	\$17.17
Black Beans	\$50.00	\$44.00	\$44.00
Cucumber	\$0.75	\$0.75	\$0.75

## Appendix 7 Buyer Maximum Price Compared to Grower Minimum Price on Select Crops

Crops	Units	Number of Growers 4-5 Interest Level	Buyers interest	Minimum Farm-Gate Price	Maximum Buyer Price	Differential
Strawberries	8 qt	3	2	\$24.00	\$25.00	\$1.00
Sweet Corn	5 dozen	3	1	\$12.50	\$25.00	\$12.50
Kale	24 cnt	5	2	\$22.00	\$20.00	-\$2.00
Tomatoes	10#/20#	4	2	\$19.00	\$25.00	\$6.00
Parsnips	25#	2	2	\$20.00	\$30.00	\$10.00
Beets	25#	3	2	\$21.00	\$12.00	-\$9.00
Winter squash	40#	6	2	\$16.00	\$40.00	\$24.00
Red Peppers	10#/25#	1	2	\$50.00	\$31.00	-\$19.00
Summer Squash	20#	3	2	\$14.00	\$18.00	\$4.00
Zucchini	20#	4	1	\$14.00	\$17.00	\$3.00
Lettuce	24 cnt	3	2	\$20.00	\$26.00	\$6.00
Mesclun	3#	1	2	\$16.50	\$10.00	-\$6.50
Green Peppers	25#	3	2	\$15.00	\$24.00	\$9.00



**Selected Crops  
Showing Supply and  
Demand**

## Appendix 8 Growers' Crop Interest Summary

Expressing interest in growing crops for distribution through AWC

Interest: 1 - none; 5 - very interested

Apples	40#	5											
Asparagus	10#												
Beets	25#	3	4	3	4	3	5						4
Black Beans		2											
Blueberries	12 pints					3							
Broccoli	20#	2		4									4
Brussels Sprouts	10#			5									3
Cabbage	40#	3	4	4		5		4					5
Carrots	25#	3		4									5
Cauliflower	each			4									3
Cucumbers	lbs											5	
Green Beans	10#			4									3
Green Peppers	10#/25#	2		5				5					3
Kale	24 ct	4	5	4				5					5
Lettuce	24 ct	4	5	5		5		5					2
Melons	4 lb			5				5		5			
Mesclun	3#									4			
Onions	25#/50#	5	3			4							3
Parsnips	25#	3		4				5					3
Potato B													
Potato Russet	lbs	50											
Potatoes	25#/50#					4							4
potatoes red A	lbs	50											
pumpkins	each											5	

## Appendix 8 Growers' Crop Interest Summary

Expressing interest in growing crops for distribution through AWC

Interest: 1 - none; 5 - very interested

Crops	Units	Growers											
		Cham-plain	Elmer	Gildrien	Golden Russet	Lalumier	Last Resort	Lewis Creek	Norris Berry	Rockville	Scott Farm	Sweet Hill	Woods
Red Peppers	10#/25#		3			5			5				
Spinach	20#					4							2
Strawberries	8 qt					3	4	5	5		3		5
Summer Squash	20#		3	4		5			5		3	4	4
Sweet Corn	5 dozen					3			5		3	5	5
Sweet Potatoes	40#												3
Tomatoes	10#/20#			4		5	3		5	4		5	5
Turnips	25#		3			1							3
Winter squash	40#	5	2		4	5		5		5	3	4	5
Zucchini	20#		3	4		5			5		3	4	4

# Appendix 9 Middlebury College Top-rated Crops Based on Price Compatibility and Availability

The rating is based on market knowledge of the crops and is subjective. It is used as a tool to evaluate overall potential crop values for the AWC and the potential market value of Middlebury College purchases. Production projections, price considerations, and grower interest all play a role in this valuation. Not shown are 16 crops scored 4 or below in ranking.

Crop	Rating	Purchase Dollars	Units	Average Purchase Price	Average Farm-gate Price	Projected Farm-gate Receipts	Volume Needs Met
Apples	10	\$36,000.00	1800	\$20.00	\$22.00	\$39,600.00	y
Carrots	10	\$14,950.00	650	\$23.00	\$22.00	\$14,300.00	y
Tomatoes	10	\$14,400.00	600	\$24.00	\$19.00	\$11,400.00	y
Lettuce	10	\$9,900.00	450	\$22.00	\$22.00	\$9,900.00	n
Broccoli	8	\$6,875.00	250	\$27.50	\$18.00	\$4,500.00	y
Sweet Potatoes	6	\$4,640.00	160	\$29.00	\$27.00	\$4,320.00	n
Cauliflower	5	\$4,320.00	1800	\$2.40	\$2.50	\$4,500.00	n
Summer Squash:	10	\$3,360.00	240	\$14.00	\$15.00	\$3,600.00	y
Zucchini	10	\$3,360.00	240	\$14.00	\$15.00	\$3,600.00	y
Winter Squash	10	\$2,300.00	100	\$23.00	\$19.00	\$1,900.00	y
Cabbage	10	\$1,840.00	80	\$23.00	\$24.00	\$1,920.00	y
Green Peppers	9	\$1,600.00	80	\$20.00	\$18.00	\$1,440.00	n
Sweet Corn 5 doz	10	\$770.00	35	\$22.00	\$18.00	\$630.00	y
Turnips	5	\$630.00	35	\$18.00	\$24.00	\$840.00	y
Parsnips	10	\$625.00	25	\$25.00	\$25.00	\$625.00	y
Cantaloupe	10	\$145.00	100	\$1.45	\$1.85	\$185.00	y
<b>Total</b>		<b>\$105, 715</b>				<b>\$103,260</b>	



## Appendix 10 Storage Crop Considerations & Requirements

This is a general discussion of storage requirements and considerations for optimizing storage variables. We worked with Vermont Refrigerated Storage (VRS), an apple storage facility in Shoreham, VT, to evaluate local storage options.

Three factors must be taken into consideration when making a decision about storage: 1) volumes will decrease over the storage period which affects the monthly storage rate per pallet, 2) the decay of product decreases the saleable volume over time and 3) the market pricing for stored product. Within this framework, each crop has its own unique characteristics. At the time of harvest, product in the supply chain is at its peak and might command a higher market value. However, pricing might also be lower due to excess regional supply.

Grower preferences played a role in our research study. Choosing which crops to grow is a very individual decision. Soil, labor, operational considerations, markets and storage each are valued differently by each farm-business.

Primary crops for AWC distribution through storage at VRS were broken into two categories. Each category has specific *storage* requirements based on transpiration rates:

*Category 1:* Carrots, beets, cabbage, parsnips, turnips

*Category 2:* Winter squash, onions, potatoes, and sweet potatoes.

For a successful regional storage venture, there must be clarity within the supply chain about product ownership and accountability. The commingling of product of differing quality from several farms can negatively impact the final market value. Produce decays while in storage. Storage operations and procedures can also mitigate crop loss. Establishing quality control guidelines and a quality assurance protocol to monitor the breakdown process are critical to good storage management.

Quality starts with the product *as it arrives from the farm for storage*. Each crop has unique pathogens and decay variables that can affect the total environment. It has been reported that losses can range widely, between 7-33%, depending on crop and storage conditions. *Quality - assurance* plays a key role in commingled products. A strong, focused QA program will reduce the impact that poor quality produce will have within an environmentally-managed operation.

Apples are natural producers of ethylene gas. This gas can cause damage to many types of storage produce. It is necessary that every step be taken to minimize the deleterious effect of ethylene on other storage crops. Crops respond differently to the gas and proper management is critical.

Best-practices include optimizing inventory management systems like FIFO (first-in, first out), managing the rate of decay through the monitoring of temperature and relative humidity, and ensuring the cleanliness of facilities both at the beginning of the storage season and at the end.

Estimating the market value of storage and the pricing of stored product is difficult. Farm-gate prices are not always the same from farm to farm. Additionally, regional and national pricing trends which can be highly variable must be considered. Market prices are different at the beginning of the storage season and the end of the season. Price averages were useful in evaluating costs for research purposes. There are many North American crop research studies that try to frame the cost of production, cost of storage and shrink relationships.

Addison County, Vermont does not produce enough volume of storage crops at this time to efficiently utilize the VRS facility. Other products from New York or Vermont could be considered to make it a more viable option. Opportunity exists, however, for Addison County growers to support a regional storage facility. The products would be pooled with other regionally-grown crops to meet the threshold for economic feasibility.

## Appendix 11

### Optimal Storage Conditions

Storage Conditions for Vegetables and Fruits					
	Temperature F	% Relative humidity	Pre-cooling Method	Storage Life Days	Ethylene sensitive
Apples	30—40	90-95	R,F,H	90-240	Y
Asparagus	32-35	95-100	H,I	14-21	Y
Beets, root	32	98-100	R	90-150	
Blackberries	31-32	90-95	R,F	2--3	
Broccoli	32	95-100	I,F,H	10--14	Y
Brussels sprouts	32	95-100	H,V,I	21-35	Y
Cabbage	32	98-100	R,F	90-180	Y
Cantaloupe	36-41	95	H,F	10--14	Y
Carrots, topped	32	98-100	I,R	28-180	Y
Cauliflower	32	90-98	H,V	20-30	
Corn, sweet	32	95-98	H,I,V	4--6	
Cranberries	36-40	90-95		60-120	
Garlic	32-34	65-75	N	90-210	
Leeks	32	95-100	H,I	60-90	Y
Lettuce	32	85-90	H,I	14-21	Y
Onions, bulb	32	65-70	N	30-180	
Onions, green	32	95-100	H,I	7--10	
Pears	32	90-95	F,R,H	60-90	Y
Peas, in pods	32	95-98	F,H,I	7--10	Y
Peppers, bell	40-55	90-95	R,F	12--18	Y
Peppers, hot	45-50	60-70	R,F	14-21	Y
Potatoes, early	50-60	90	R,F	56-140	
Potatoes, late	40-50	90	R,F	56-140	Y
Pumpkins	50-60	50-75	N	84-160	
Raspberries	32	90-95	R,F	2--3	Y
Rutabagas	32	98-100	R	120-180	
Spinach	32	95-100	H,I	14-Oct	Y
Squash, summer	41-50	95	R,F	7--10	Y
Squash, winter	50-55	50-70	N	84-150	
Strawberries	32	90-95	R,F	5--10	
Sweet potatoes	55-60	85-90	N	120-210	Y
Tomatoes	62-68	90-95	R,F	28-Jul	Y
Turnips	32	95	R,H,V,I	120-150	
Watermelon	50-60	90	N	14-21	

## Appendix 12 Matchmaking Template

	Addison Central	ANESU	BHC	Greg's Mkt	Jacksons	Job Corps	MC	PAHCC	Swift House	Porter Hospital	Swift House	Shoreham Inn	VRS	MGM	Bris Bah
Champlain Orchards															
Elmer															
Groundworks															
Lalumiere															
Lewis Creek															
Morris															
Olga Tench															
VRS															
Gildrien															
Otter Creek															
Sweet Hill															
Marble Rose															
New Leaf															
Singing Cedar															

This is the matchmaking template used to organize pre-arranged matches as part of the 'speed-dating' concept. The first rounds were established prior to the event based on grower buyer needs deduced from the data collection and based on relationship building.

## Appendix 13 Online Research Summary

Addison County is looking to expand local foods production and purchases through an online ordering and distribution system. In our view, the needs of growers and buyers are equal and both are strategic partners in solving the distribution issues we face geographically. They have advised us about their current use of online tools and about their needs.

Our objective is to incorporate the best technology to link product availability within the county. The creation of a matchmaking platform will allow growers farmers to offer products currently used by buyers but not sourced locally. Buyers will recognize opportunities to rework purchasing strategies and utilize products grown locally.

There is a wide range in the use of information technology among growers. It is common for Addison County growers to spend many hours taking orders by phone, fax or email. This is accomplished by establishing very specific ordering times. Buyers, however, tend to be working with online ordering systems that allow more flexibility. They adhere to cut-off times and the software allows for many ordering options such as pre-ordering that is shipped on a specified date. They would expect the same in a local-foods ordering platform.

In order to effectively manage dynamic relationships between customers and vendors, advanced information technology offers advantages. Options range from internet databases for managing customer relationships to distribution software to management logistics. Significant systems-efficiencies can be harnessed to manage ordering times and inventory, and to schedule routes for pick-ups and drop-offs.

We have identified three promising technology platform options to keep moving local food system development forward: **matchmaking services, internet-based buying clubs, and distribution management systems.** Technology exists for each option but has only just recently been adapted and applied to local foods sourcing. Of the three options, AWC is focused on matchmaking and distribution management to get local produce to the market more efficiently. Buyers will have access to local suppliers, complete the online transaction.

The food will be delivered direct by the grower. The goal is to increase the flow of foods that will then allow for AWC to participate in the actual distribution of the food through logistics coordination.

“According to the USDA, developing a solution for efficiently planning routes is one of the most critical pieces to scaling up food hubs. This is a missing piece in the effort to enable local food to reach more buyers in the community.”

Trends in online ordering and distribution require that we focus on product traceability in addition to grower and product identification. Keeping pace with logistics management technology will also be important, for example the use of handheld devices.

Accounting and invoice management take up a lot of time for both growers and buyers. The creation of efficiencies requires minimizing paperwork for users and for the AWC. We assume that 80% of online sales will come from 20 % of our farms. Therefore, most of the revenues will be generated by a small number of products offered within the system.

Per our research, accounting and invoice management are handled uniquely by each vendor and each account. We do expect that our users will have to somewhat modify their current practices in order to integrate with AWC’s platform. Transaction software should automatically distribute the electronic payment back to the farmer-vendor through different options: direct deposit, deposit to an AWC credit account denominated in ACORN currency, etc. There will not be a COD option.

In summary, the AWC has explored the possibility of an online market platform that would facilitate the distribution of food within the county. To succeed, the platform must streamline purchasing and logistics, reduce transaction times and build valued efficiencies for growers and buyers.

## Appendix 14 Online Systems-Template

This template provided a checklist of topics to discuss with the various organizations and business we interviewed.

### Basic Information:

- First Available
- Number of customers
- Status: Profit or Non-profit
- Customer base
- Open-source
- Primary customers/users

### User Functions:

- Grower descriptions
- Product descriptions by category
- Filtering and sorting
- Reporting capacities

### Administrative Features

- Security
- Usage monitoring
- Fees: transaction or usage or flat-rate
- Link to QuickBooks

### Cost

- Sold outright
- Monthly membership fee
- Installation or support fees
- Technology compatible: iPad, iPhone Smart Phones, Droid

# Appendix 15 General Online Requirements Categorized by Grower and Buyer Needs

## FARMER-VENDOR NEEDS

## BUYER-ACCOUNTS NEEDS

General Online Requirements	
Farmers	Buyers
<ul style="list-style-type: none"><li>• Product entry is easy</li><li>• Pricing options full case &amp; piecework</li><li>• Pick sheets organized by products and buyers</li><li>• Truck route assignments</li><li>• Growers create transaction criteria</li></ul>	<ul style="list-style-type: none"><li>• Inventory product codes</li><li>• Prepay: prefer not to use credit cards</li><li>• Receiving invoice traceability from farms</li><li>• Buyers purchase based on grower criteria that meets their needs</li></ul>



Distinct window to upload inventory  
Minimum orders  
Unique distribution criteria: ex. transportation surcharge

Tier pricing based on distance/volume/  
QuickBooks compatible  
Pick sheet turns into invoice  
Easy to meld with other on-farm systems: production & harvest  
Transportation costs covered in pricing  
Email confirmation of consolidated orders by product  
Inventory management tools that can assist in production  
“spec” product/auction  
Farmer to farmer network referrals ie CSA aggregation for product  
Farm marketing capacities  
No upfront fees  
Buyers only see their prices  
Product categories/units  
Grower product movement reports  
Farmer newsletters; upcoming harvests  
High security for financial exchanges  
Use of AWC to expand to other accounts increasing food through AWC  
Provide enough window to receive orders THEN harvest & pack-out

Real-time inventory – aggregated availabilities  
Out of stocks “refill date”  
View the delivered price, current and future product availability, and the fulfillment charges from Vendor to Buyer

Category mgt. summaries for budget setting  
Product availability dates  
Product substitution options  
Efficient back office accounting  
  
Certifications: GAP. Organic etc  
Delivery efficiency  
  
Vendor product reports/ usage reports  
  
Building to par inventory  
Aggregated payment with full invoice info: farms purchased from/amounts/  
  
Accounts can download vendor profiles  
Credit reports  
All prices are accessed  
Strong search capacity for products/  
  
Menus modified with updated harvest info  
Password protection  
  
Farm>item>description>barcodes are used by national distributors for traceability.  
Up-sell capability: reminders to double-check the order...  
  
Sales reports: volume by categories purchased is more important than by individual farm  
Order summaries: # cases, Dollars, # farmers, pack sizes full vs partial,  
Create “preferred Product lists”

## **Appendix 16 Considerations for development of the Ordering Platform**

### **Appendix 17 Resources and References used for on online platform research**

**Vendor Producers and Buying Accounts:**

Lewis Creek Farm, Rockville Farm, Elmer Farm, Champlain Orchards, Addison Northeast Supervisory Union, Porter Medical Center, Middlebury College, Middlebury Natural Foods Coop, Jackson's on the River,

**Food Hubs, Distributors, Online Resources:**

UDSA, Wallace Center, CISA, Red Tomato, Crown of Maine, Foothills Connect, New River Organics, Farmershub, Local Orbit, Harvest to Market, Farmers to You, Food Hub, Oklahoma Food Cooperative, Local Food Hub, Farmigo, RPM, Your Farmstand, Growershub, Windham Food Network, Organic Renaissance, Farm Fresh Rhode Island and more

**Distribution and or Purchasing Software Resources:**

<http://semaponline.org/>

<http://www.softwareadvice.com/distribution/geneva-business-management-systems-profile/>

<http://www.softwareadvice.com/distribution/fishbowl-inventory-distribution-profile/>

<http://www.orfoodex.com/index.html>

<http://www.softwareadvice.com/articles/distribution/regional-food-hubs-face-a-growing-need-for-technology-1030811/#ixzz1MR3IUpsr>

<http://www.softwareadvice.com/distribution/cornerstone-sr2food-distribution-profile>

