

# Breaking Ground:

## *A Feasibility Study for Target:Hunger's Community Supported Agriculture Farm*



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## PART I

### Introduction, Problem Identification, and Scope

#### **Introduction**

Can small-scale sustainable agriculture projects reduce hunger?

Bringing together a diverse range of interests, from farmers to food banks, our study aims to assess the feasibility of a Community-Supported Agriculture farm that would serve low-income residents of Northern Berkshire County. We have prepared this report for Target:Hunger as a project for the ENVI 302 Environmental Planning class at Williams College. Target:Hunger is an initiative of the Western Massachusetts Food Bank, which works to reduce hunger and increase food security within this area. Through a community survey, site analysis, and comparative research, our project proposes and assesses farm models for three potential sites in Northern Berkshire County, concluding with recommendations for the potential farm. Ultimately, we strive to address Target:Hunger's goals and fulfill the needs of the community as this project moves from vision to reality.

#### **Project Identification and Scope**

As a part of Target:Hunger's overarching plan to reduce food insecurity in the Northern Berkshires, our project sought to determine what kind of CSA model would best serve the Northern Berkshire residents, especially low-income residents, by providing them with fresh, affordable produce. Our client, Helen Harrison, emphasized that the project's primary focus should be serving lower-income residents, rather than creating a CSA for its own sake.<sup>1</sup>

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<sup>1</sup> Personal communication with Helen Harrison, Oct. 25, 2007.

Our specific project actually fits into a longer-term planning process for the CSA. Before we began, Target:Hunger had identified three possible plots of land for the farm and held focus groups with area residents. The 12-person focus group, which met in August, included mostly low-income residents and began discussing the overall feasibility of the farm, as well as specific details they wanted to see included.<sup>2</sup> After we finish, a larger committee will take over the planning. For this intermediate period, Helen Harrison set us three clear-cut tasks: to survey 60 Northern Berkshire residents about their interest in the CSA, to analyze the three plots of land for a wide range of factors, and to research similar projects to learn how other organizations' methods could work for our model.<sup>3</sup> By synthesizing the results of these three studies, we propose and assess designs of how and where the CSA would operate, through a series of ranked recommendations.

Our goal is to serve the community as fully as possible, and so our first step, the interest survey, aimed to discover what Northern Berkshire residents themselves would want and need from a CSA farm. The research firm that Target:Hunger has employed in the past, Market Street Research, claims that 30 surveys yield significant results, and Helen set the target of 60 surveys to ensure enough information for us to draw the most important conclusions.<sup>4</sup> We needed to gauge the general interest level for the CSA project, and the specific interest level for each possible variation in the CSA plan. Variations include the different prices of shares, whether the farm accepts Food Stamps or WIC coupons, whether the customers pay seasonally or monthly, delivery methods, and extra services offered such as education or value-added production.

Our next, crucial objective in moving the CSA vision toward reality was to evaluate the suitability of three potential farm sites, using a wide range of factors. In this report we describe

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<sup>2</sup> Personal communication with Helen Harrison, Nov. 30, 2007.

<sup>3</sup> Ibid.

<sup>4</sup> Personal communication with Helen Harrison, Nov. 7, 2007.

our ranking system, but, just as importantly, we also provide a framework for the cost-benefit analysis, so that the committee that continues the farm planning can still draw their own conclusions if necessary, but can rely on the research and legwork we have already completed. For each potential site, we assessed the price, and analyzed the land-use history and its implications, amount of arable land, soil fertility, value of existing structures, location convenience, and more intangible social factors such as attitudes of the owners and neighbors.

Finally, our project combines specific information about Northern Berkshire residents and land with a broader perspective of how similar CSA models, which intentionally devote at least part of their operations to serving low-income residents, have worked to promote food security. We researched how these other CSAs have priced their shares, how they have decided whether to sell shares on a monthly or seasonal basis, how they have subsidized lower-price shares (whether through more expensive shares or reaching out to other markets), their delivery methods, and whether they have incorporated other programs such as education and value-added products. These other projects provided a wealth of both quantitative and qualitative information, from the logistics of pricing shares to strategies for reaching out to the community.

We integrated our survey results with the cross-comparisons against other organizations to propose CSA models that fit the context of the Northern Berkshire community. Again, our task is to rank different models and provide a detailed rationale for our ranking, so that the planning committee can both use our conclusions and consult the information we gathered and decisions we made in reaching those conclusions.

## PART II.

### Background: Community Food Security, Community Profile, and Client Description

#### **What is Community Food Security?**

Understanding the basic goals of community food security gives insight into Target:Hunger’s holistic approach to combating food insecurity. It also explains how a CSA farm fits into the overall plan. While on the most basic level food security refers to an individual’s access to sufficient food for an active and healthy lifestyle, the definition rapidly expands in the broader context of community food security. Seen through this multi-dimensional lens, community food security involves factors as diverse as sustainable agriculture, public transportation, fair wages and working conditions, public health systems, and political administration. Mike Hamm and Anne Bellows pull together these factors in their widely cited definition of community food security as “a condition in which all community residents obtain a safe, culturally appropriate, nutritionally sound diet through an economically and environmentally sustainable food system that promotes community self-reliance and social justice.”<sup>5</sup> The community food security approach, as conceived in 1994 by a broad coalition of activists, seeks to address hunger by strengthening these elements of community food systems.<sup>6</sup>

Again, this approach significantly broadens the idea of an anti-hunger initiative, since a food system refers to all the processes involved in putting food on the table: from growing to harvesting to processing, packaging, transporting, marketing, consuming, and disposing of food

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<sup>5</sup> Bellows, Anne and Michael Hamm. “U.S.-Based Community Food Security: Influences Practice, Debate.” *Journal for the Study of Food and Society*, Volume 6, No.1, Winter 2002.

<sup>6</sup> Fisher, Andy. *What is Community Food Security?* Community Food Security Coalition, reprinted in “WHY Speaks,” 2003.

and packaging.<sup>7</sup> A community food system, specifically, integrates these processes and strengthens relationships between the different parts of the system to reach environmental, economic, social, and nutritional health – in a word, sustainability. Community food security’s five principles are meeting the needs of low-income residents, maintaining a community focus, self-reliance and empowerment, local agriculture, and a systems-based rather than individual-based perspective.<sup>8</sup>

While anti-hunger work, where community food security initiatives began, focused on dietary quality and food safety, the community food systems approach turns the problem into a community planning issue. It calls for job training, business skills development, urban greening, farmland preservation, and community revitalization to serve the needs of low-income residents. Focus on strengthening community connections may require supermarkets, farmers’ markets, gardens, transportation, community-based food processing, and urban farming.<sup>9</sup> The emphasis on local, sustainable agriculture recognizes that food security includes the community’s ability to continue producing much of its own supply of food, and the importance of preserving fertile space for gardening and farming.

## **Community Profile**

A broad understanding of the economy of the Northern Berkshires allows us to contextualize problems and potential solutions in promoting community food security. Berkshire County is a rural/residential community comprised of seven towns in the northwestern corner of

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<sup>7</sup> Wilkins, Jennifer and Maria Eames-Sheavly. *A Primer on Community Food Systems: Linking Food, Nutrition, and Agriculture*. Cornell University.

<sup>8</sup> Fisher.

<sup>9</sup> Ibid.

Massachusetts. The total population of the area is 36,662<sup>10</sup> people, with most of the citizens concentrated in the more urban areas of North Adams (14,681 residents) and Adams (8,089 residents) and the college town of Williamstown (8,424 residents).<sup>11</sup> In North Adams, median household income is \$27,601, while Adams rests at \$35,092 and Williamstown at \$51,875. Beyond the urban centers of community and commerce, the remaining towns of Clarksburg, Savoy, Florida and Cheshire are largely residential, dominated by their mountain and agricultural landscapes. These rural towns all fluctuate within \$2,000 of the national median household income of \$41,994. While unemployment is not particularly high (3%), many are underemployed or have simply left the labor force, which accounts for only 60.2% of citizens (compared to 66.2% in all of Massachusetts). If we look closely at North Adams, 13.5% of families are below the poverty line (compared to 6.7% in Massachusetts and 9.2% nationally). Even more stunningly, 25.9% of families with children under 18 years old and 37.4% of families with children under 5 years old are under the poverty level in North Adams. For the state of Massachusetts as a whole, these rates are much lower, at 10.1% and 12.2%, respectively.<sup>12</sup>

Historically, the economy of this region has been dominated by construction (the Hoosac Tunnel), farming, and a progression through shoe, textile and electric industries. This industry was centered in North Adams, which suffered immensely when Sprague Electric finally left in the late 1980s. Since then, the Northern Berkshires have continued their devotion to farming and maintenance of natural areas, though the area is actively becoming a center of art and tourism. Well-positioned on Route 2, Route 7 and Route 8 for travelers from Boston, New York and Vermont, the area is converting old factories and mills into museums (Mass MOCA) and artist studios, while also encouraging the entrance of restaurants and other tourist attractions.

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<sup>10</sup> E Podunk: The Power of Place. <http://www.epodunk.com/cgi-bin/incomeOverview.php?locIndex=3059>.

<sup>11</sup> E Podunk: The Power of Place.

<sup>12</sup> U.S. Census Bureau. <http://www.census.gov>.



Capitalizing on its natural beauty, the Northern Berkshires have also become an attraction for recreational outdoors tourists, who come to hike our mountains, fish our rivers and enjoy the natural, rural atmosphere.

While tourism is on the rise, the Northern Berkshires suffer uncommonly high rates of hunger and food insecurity. In 2006, Market Street Research conducted a phone survey on behalf of Target:Hunger, to assess the need for hunger-reduction programming in the region. According to survey results, the percentage of the population in the Northern Berkshires who are food secure is 81.7%, while 7.2% are food insecure without hunger and 11% suffer from moderate to severe hunger (moderate: 5.9%, severe: 5.1%). While the median income for all households surveyed was \$33,000, those who are food secure reported a median income of \$40,700. Among residents who are food insecure without hunger, median income is about \$14,000 per year, while those who reported moderate or severe hunger average about \$10,800 in median income.<sup>13</sup>

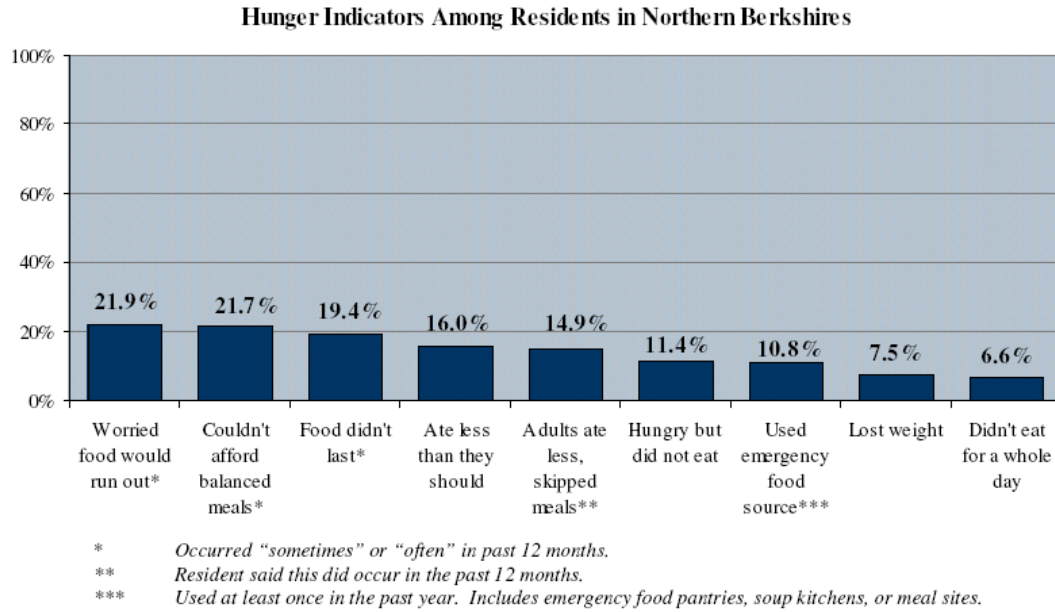
Of those who are food insecure, 52.8% live in one-adult households, as compared to only 29.2% of those who are food secure. 16.9% of food insecure adults have three or more children, while only 5.6% of adults have as many children. Of residents suffering from hunger, 11.1% are Hispanic or Latino, as compared to 2.3% of food secure residents. 93.2% of the food secure are white, while only 80.7% are non-white. 31.0% of food insecure adults live in households of three or more adults, as compared with 15.5% of food secure households. Only 32.0% of food secure adults live in households with no fully-employed adults, while 55.4% of residents with moderate or severe hunger live in such households.<sup>14</sup>

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<sup>13</sup> Market Street Research. Food Security in Northern Berkshires: Summary of Findings. [http://www.foodbankwma.org/about%20us\\_files/Research\\_North\\_Berkshire.pdf](http://www.foodbankwma.org/about%20us_files/Research_North_Berkshire.pdf).

<sup>14</sup> Ibid.

Figure 1.<sup>15</sup>



## CSAs and Community Food Security

Target:Hunger hopes to address the region’s deep need for food security using the multi-faceted principles of community food systems. Community Supported Agriculture (CSA) can serve as one of the centerpieces of innovative food security planning through its community focus, promotion of self-reliance and empowerment, emphasis on local agriculture, and systems-based perspective. In a CSA arrangement, consumers are members, who generally pay for an entire season’s share at the beginning of the season. Local farmers, struggling to meet their own households’ needs, are assured the support of their customers from the beginning of the season – when they need the money most. The overall food security of the community rises when productive farmland is preserved. The deeper connection between producer and consumer encourages consumers to eat more healthily and participate more in the production of their own

<sup>15</sup> Market Street Research.

food. Although the CSA model can be difficult for low-income families to use as a means of achieving food security, a 1995 study of three CSAs in Massachusetts found that prices for “comparable” produce were 60-150% higher in conventional supermarkets than through a CSA arrangement.<sup>16</sup> Through their potential to serve low-income families, their reliance on community, their encouragement of self-reliance, their epitomizing of local agriculture, and their use of the broader good system, CSAs can greatly help in upholding the principles of community food security.

Modern Community Supported Agriculture is a relatively recent development, especially in the context agriculture’s long history that spans thousands of years of human civilization. The ideas behind modern CSAs began to take shape during the early to mid 20<sup>th</sup> century, as new forms of industrialized agriculture became the dominant form of farming and changed the structure of food supply in developed countries around the world. Industrialization not only marginalized small farmers but also reduced many people’s access to fresh local food, replacing the old system of family farms with large monoculture farms designed for large-scale production rather than for addressing the needs of a community. As the disadvantages of this system became more and more obvious, a wide range of people—from consumers to farmers and even economists and philosophers—began looking for possible solutions<sup>17</sup>.

As a result, community-based agricultural models began to spring up somewhat independently around the world, including particularly influential movements in Japan, Chile, and Switzerland. It is widely recognized that the first formalized CSA system began in Japan in

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<sup>16</sup> Kantor, Linda Scott. *CFS Programs Improve Food Access*. United States Department of Agriculture, 2001.

<sup>17</sup> Steven McFadden, “The History of Community Supported Agriculture, Part I: Community Farms in the 21st Century: Poised for Another Wave of Growth?” *The New Farm: Farmer-to-Farmer Know-How from The Rodale Institute*. <http://www.newfarm.org/features/0104/csa-history/part1.shtml>.

the 1960's under the name of "teikei," which can be understood literally as "partnership" or conceptually as "food with the farmer's face on it"<sup>18</sup>. In the U.S., the movement actually began with two separate CSA farms that were both founded in 1986—Temple-Wilton Community Farm in New Hampshire and the aptly named "CSA Garden at Great Barrington" (Massachusetts), now known as Indian Line Farm. In both cases, the farms were initiated on the local level, focusing on the ideas of local agriculture and fulfilling a community's needs rather than intentionally joining a worldwide movement of community-based agriculture.

In striving to meet their communities' needs, Indian Line Farm and Temple-Wilton Community Farm adopted slightly different models of community support: the former asked members to buy pre-priced shares at the beginning of the season, while the latter presented its yearly budget to its members and asks them to make pledges to meet the budget, striving to address the fact that its members often come from a range of income groups and have diverse needs. To this day, Indian Line Farm and Temple-Wilton Community farm still operate according to these two distinct models, but they nonetheless share the same general philosophy regarding small-scale local agriculture and its potential to fulfill the needs of a community.

As the CSA movement moves past its 20-year anniversary and looks toward the future, some of the movement's founders still express its purpose in the most eloquent way. Anthony Graham, a co-founder of Temple-Wilton Community farm stresses the fact that CSAs are working to alter the structure of our society by implementing "new forms of property ownership," "new forms of cooperation," and "new forms of economy"<sup>19</sup>, all of which speak to the power of CSAs to address hunger in the way our project strives to do. Robyn Van En, co-

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<sup>18</sup> Robyn Van En, "Eating for Your Community: a report from the founder of community supported agriculture," *In Context: A Quarterly of Humane Sustainable Culture*.  
<http://www.context.org/ICLIB/IC42/VanEn.htm>.

<sup>19</sup> Robyn Van En, cited in McFadden, 2004.

founder of Indian Line Farm, agrees that CSAs provide benefits not only to consumers but also to communities and to society as a whole:

“CSA members are supporting a regional food system, securing the agricultural integrity of their region, and participating in a community-building experience by getting to know their neighbors and who grows their food.”<sup>20</sup>

True to their roots, the 1,700 CSAs operating in the U.S. today still strive to embody these principles as they grow in number and in scale. Fulfilling one of the most basic needs of a community, CSAs provide great opportunities for the future while resting on the solid foundations of a movement born of necessity, cooperation, responsibility, and a connection to the land. As such, Community Supported Agriculture is a growing area of interest, but one that is more often focused on environmental stewardship and localism rather than anti-poverty work. There are, however, many examples of farms that have made food security for low-income citizens the focus of their work.

One of the first examples of such a CSA is the farm operated by the Food Bank of Western Massachusetts. This project started in the early 1990s when Hampshire College began donating tomatoes to the Food Bank from their experimental farm. The resulting glut of tomatoes gave rise to the “Chili Project,” an effort to preserve the bounty and make it available to the Food Bank for longer. Participants in the Chili Project found it so successful that they decided to lease a plot of fertile farmland to start a farm that could continuously supply local shelter, pantries, and meal programs. Today the 60 acre farm grows over 250 vegetables, fruits, and flowers for 675 CSA shares and an equal quantity of donations for Food Bank agencies. This amounts to about 150,000 pounds per year of fresh produce for anti-hunger agencies in the area. The farm is able to cover all of its operating costs with payments from the shares, which cost \$475 per season.

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<sup>20</sup> Van En.

Though the Hadley farm claims to be the first and biggest farm of this kind, there are several other examples of similar projects, many of which are close by. The Food Project in Lincoln, MA and Waltham Fields Community Farm in Waltham, MA both run similar programs that donate 40 to 50 percent of their produce to anti-poverty agencies. The Food Project Rural Farm has a 27-acre operation that donates about 125,000 pounds per year, while Waltham Fields is a smaller endeavor donating 150,000 since 1995 on slightly under 10 acres. They have different distribution strategies, however; The Food Project concentrates its donations on 8 different shelters and soup kitchens, while Waltham Fields distributes to over 25 organizations. A third farm in nearby Concord, Gaining Ground, donates all of its produce to charity and does not operate a CSA to cover any of its costs. They distribute about 20,000 pounds per year to 11 agencies. Additionally, a host of farms in New York state have structured their share prices to serve low-income residents. Our report discusses the strategies of three of these farms: Canticle Farm, Chelsea CSA, and Genesee Valley Organic CSA. These farms represent a new movement toward combining sustainable agriculture with anti-hunger initiatives.

### **Target:Hunger's Community Food Security Plan**

CSA farms' potential for promoting community food security inspired our client, Target:Hunger, to incorporate a CSA plan into its overall strategy. Target:Hunger is an initiative of the Western Massachusetts Food Bank that aims to reduce hunger in the Northern Berkshires by 10% in four years. Led by Helen Harrison, a Food Bank employee and Target:Hunger coordinator, the Northern Berkshires initiative is paired with a similar initiative in the more urban setting of Mason Square, in Springfield Massachusetts.<sup>21</sup> Both initiatives are coordinated, funded and advised by the decades-old Western Massachusetts Food Bank and aim to act as

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<sup>21</sup> The Food Bank of Western Massachusetts. [http://www.foodbankwma.org/about%20us\\_files/TH.htm](http://www.foodbankwma.org/about%20us_files/TH.htm).

models for other communities suffering from similar hunger problems in rural areas, like the Berkshires, and urban areas, like Springfield. The regionally differentiated projects share resources and ideas, which has been extremely helpful to the Northern Berkshires initiative, which is still in the planning stages, while Springfield has already begun to implement its plan.

Working with community partners in local neighborhoods, nonprofit organizations, shelters and food emergency agencies, Target:Hunger has identified key contributors to hunger in the Northern Berkshires and formulated a multi-faceted plan to attack this problem. The community plan to reduce hunger is divided into six major areas of action: awareness and coordination of services, infrastructure, enterprise, schools and children's and youth programs, skill-building and empowerment and advocacy. These action groups are meant to address the major identified problems of a lack of availability of good grocery stores, lack of transportation, high-prices of fresh, nutritious foods, access to federal nutrition programs and low household incomes relative to family size.<sup>22</sup>

Within these action areas, Target:Hunger members have brainstormed and begun to implement projects that range from a food security resource guide and nutrition education to healthy school lunch programs and improved transportation to local groceries. Target Hunger hosts monthly meetings in North Adams which are attended by interested community members and project partners, including the Northern Berkshire Community Coalition, Berkshire Food Project, and Berkshire Share. At these meetings, members review progress reports before breaking into workgroups in which they brainstorm and critique and suggest implementation strategies for the various action areas and specific initiatives. Helen uses these meetings to inform her day-to-day work of meeting with community partners, assessing project feasibility, gathering resources, etc.

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<sup>22</sup> The Food Bank of Western Massachusetts.

Early in the planning process, the idea of a new CSA in the Northern Berkshires was suggested as a way to increase fresh vegetable availability as well as awareness of the industrial food chain, nutrition and agriculture. Though the Northern Berkshires has many beautiful farms and one wonderful CSA (Caretaker Farm, in South Williamstown), the fresh food from these fields does not reach all residents, especially those of low-income. The idea of a CSA with low-income shares and accessibility (geographically, financially, and culturally) for low-income residents could begin to address this issue. Partnering with local farmers, like the Zasada and Smith families at Caretaker and the Stinsons at Peace Valley, local activists like Jennifer Munoz (who organizes community gardening in Northern Berkshire low-income neighborhoods) and interested community members, the idea has developed into an exciting possibility.



### PART III. Research Plan

Our project seeks to begin to transform this exciting possibility into a viable plan. Our examines many different factors contributing to the feasibility of the proposed CSA, which means that our research methods include a range of different approaches. Broadly speaking, some of our research is specifically designed to assess the overall feasibility of a CSA in the Northern Berkshires, while other parts of our research focus on helping us choose the best site for the proposed CSA; realistically, though, these two areas are interconnected in various ways, so many of our research tools end up providing useful information for both parts of our feasibility study.

First of all, a key element in determining the feasibility of any CSA is assessing community interest and the potential for community involvement in the farm. With the help of our client, we have developed a two-page survey designed to gauge the general level of interest in a CSA and determine how much education would be necessary to raise community interest to the level necessary to sustain the CSA. In addition, the survey aims to assess several financial variables including the income level of interested community members and the degree of financial commitment they would be willing to make if involved in a CSA. Finally, the survey also addresses a variety of more specific questions that will be useful in helping us determine the best organizational structure, delivery methods, and other additional features of the farm. (See Appendix for the complete text of the survey). We conducted this survey in person by approaching willing community members at various sites in Adams and North Adams, including Stop and Shop, Price Chopper, Wild Oats Food Coop, The Big Y, and The Berkshire Food Project.

Another early step was testing the soil at all three possible farm sites, because the agricultural productivity of the land relates to both of the questions we are trying to answer—it is important for selecting the best site as well as estimating the costs and revenues that determine the economic feasibility of farming the land. We tested the soil by taking 12 distinct samples from each site (as shown in Fig. 1) and combining them to create a representative sample according to the instructions of the Soil and Plant Tissue Testing Laboratory at the University of Massachusetts.<sup>23</sup> We sent our soils to UMass to be analyzed for pH, buffer pH, extractable nutrients, extractable heavy metals, cation exchange capacity, percent base saturation, and organic matter. Using the results of this analysis, we will be able to make more accurate estimates regarding the soil productivity at each site, which is an important step in predicting crop yield and expected revenue. Although the relative productivity of the sites is not the only factor in assessing feasibility and choosing the best site, it is certainly an important factor in both of these decisions. Beyond soil testing, we also evaluated each site on a range of other physical characteristics, as we will discuss later in greater detail.

Fig. 2. Gathering soil samples



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<sup>23</sup> University of Massachusetts-Amherst, Department of Plant and Soil Sciences. Soil and Plant Tissue Testing Laboratory. <http://www.umass.edu/plsoils/soiltest/soilbrochb.htm>.

Another important part of gauging this CSA's economic feasibility is understanding the costs and revenues of other small organic farms. To obtain this information, we interviewed a selection of local farmers about their own farms. We asked about range of topics, including their start-up costs, the kinds of help they received in the start-up process, how much money they spend on seeds and other products at the beginning of each growing season, their annual operating costs (and where these costs come from), and their sources of revenue.

Finally, we used a combination of farmer interviews, the results of our community survey, and research on other existing CSA models to help us determine the best organizational model for the Target:Hunger CSA. For this purpose, we focused on CSA farms, learning about the quantity and pricing of their shares, their reliance on volunteer labor, and other features of the farm, including community events or outreach programs. For farms that provided at least some of their produce to low-income community members, we examined how they altered their price structure to accommodate these customers, and how the farm finances any reduced-priced shares or produce. Ultimately, we combined this information with our survey results regarding what types of CSA features the Northern Berkshires community would prefer. By synthesizing these different sources of information, we aimed to propose a CSA model that will fulfill the community's needs in the most financially feasible way.

## PART IV. Research Findings

### Survey Results

In order to better understand the needs and preferences of the target community, we surveyed a sample of 63 Northern Berkshire County residents. The survey was based on an earlier version that had been created by Target:Hunger in the summer of 2007, but we adapted it slightly to make it clearer and to focus on the issues that we deemed most important. Our goal was not only to gauge community interest in a CSA but also to find out what types of features and payment structures the community members would prefer, so our survey covered a wide range of questions addressing these issues. (See Appendix for full text of survey.) We chose to survey 63 people because our client at Target:Hunger recommended a sample size of 60, so that we could have enough potential variation in our sample, and we ended up with a few extra surveys. In order to make sure we reached a diverse range of people, we conducted surveys at several different sites in Williamstown and North Adams, including the Berkshire Food Project, Stop & Shop, Cup and Saucer, and Wild Oats Food Co-op.

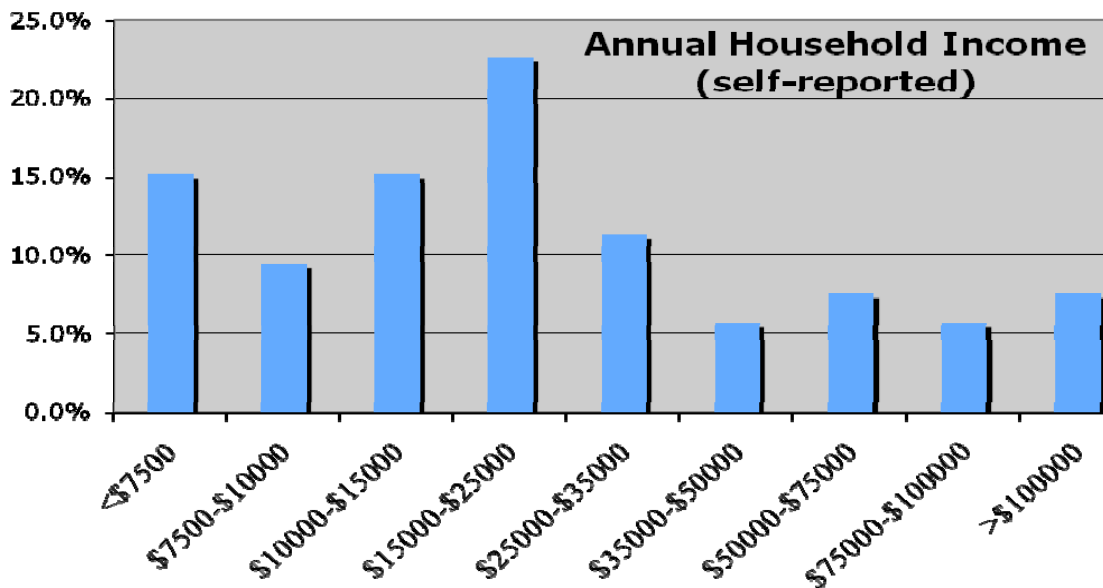
The majority of the people we surveyed were residents of North Adams (64.4%) and Williamstown, with the remainder from Florida (5.1%), Adams (3.4%), Cheshire (1.7%), and Clarksburg (1.7%)<sup>24</sup>. The annual household income of our survey respondents ranged from less than \$7,500 to more than \$100,000, with the average being \$31,941, and the mean household size was 2.1 people, although this average obscures the fact that nearly 40% of those surveyed lived in single-person households. The ages of our respondents again spanned a wide range (from 16 to over 80), with an average age of nearly 50 years old. This means that a somewhat

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<sup>24</sup> Unless otherwise noted, percentages and averages are calculated out of the total number of people who responded to each question. While this method is potentially susceptible to selection bias, we do not believe that this bias skews our results significantly.

disproportionate number of our respondents were elderly people living alone, but we do not believe that this fact is detrimental to our results, given that we would not rule out the possibility of trying to reach some of those people to become CSA members. Along gender lines, we managed to achieve a fairly equal balance among our respondents, but in terms of race, the people we surveyed were much more homogenous, with 93.8% of our respondents classifying themselves as “white” or “Caucasian.”

Figure 3. 2006 Household Income of Survey Respondents



There was certainly variation in our respondents’ opinions regarding fresh produce and CSA’s, but still some broad patterns emerge. First of all, we found that just 25.8% of our respondents were “highly satisfied” with the availability of fresh fruits and vegetables in the area, and a mere 11.3% were “highly satisfied” with the affordability of fresh fruits and vegetables here. Indeed, our results show that freshness and affordability were the top two produce-related concerns of the people we surveyed: 90.3% of respondents agree that freshness is one of the

main things they look for when buying fruits and vegetables, and 83.3% of people name affordability as a key consideration. Also important to over 60% of our respondents are nutritional value, locally grown produce, and a good selection of types of produce, while only 33.9% of people care whether or not their produce is organic.

Figure 4. Important Factors When Purchasing Produce

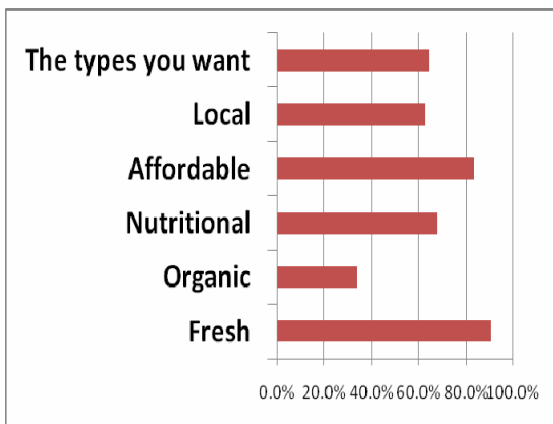
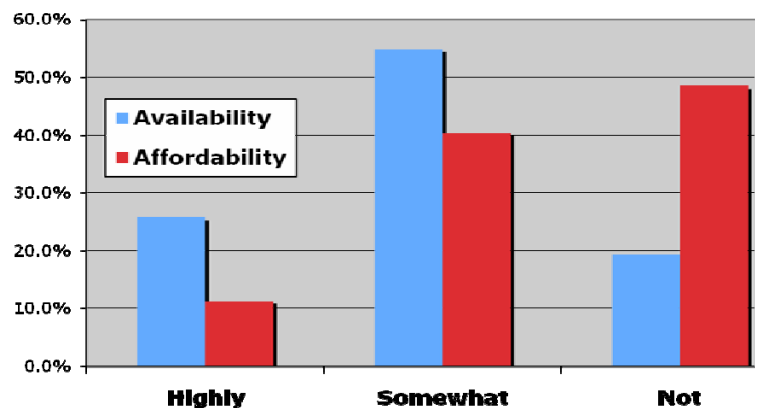


Figure 5. Satisfaction with Produce Availability and Affordability



These results certainly indicate to us that there is a need for some way to increase access to fresh, affordable produce, but is the community interested in a CSA? Yes! The results of our survey were positive in this respect, showing interest among a wide range of community members. Along with words of encouragement like “Do it! The more CSAs, the better!” (from a respondent at Wild Oats), the data show similar enthusiasm among many of the people we surveyed. As can be seen in Figure 6 and Table 2, 56.7% of our respondents would be either “very interested” or “somewhat interested” in joining a CSA in the area. Given that many of our respondents had not heard of a CSA prior to taking our survey, it is very encouraging that over half of the people surveyed showed interest in participating in a CSA. Furthermore, 77.5% of our respondents said they would be “very” or “somewhat” interested in joining a CSA if there

were a produce pick-up site near their home; this overwhelmingly positive response includes 25% of the people who initially said they would not be interested in joining a CSA but changed their minds when offered the option of a pick-up site. This result, along with our findings on available transportation, indicates that a pick-up site could increase interest in the CSA (especially because, even among the 73% of respondents who have access to a car, many cited high gas prices as a reason to prefer shopping close to home).

Figure 6. Interest Level in Joining CSA

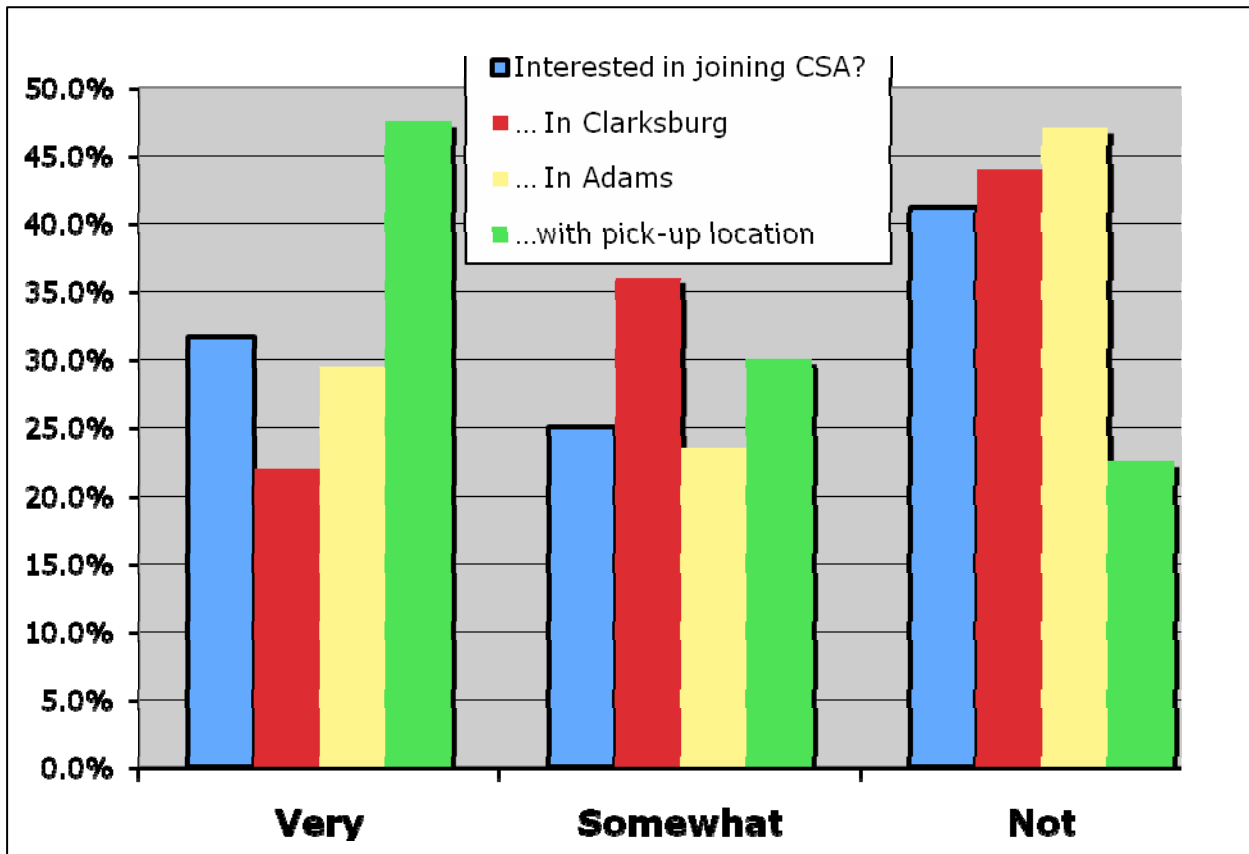


Table 1. Community Interest Level

	<b>Very Interested</b>	<b>Somewhat Interested</b>	<b>Not Interested</b>
Interested in joining a CSA?	31.7%	25.0%	41.3%
With pick-up location? ( <i>all respondents</i> )	47.5%	30.0%	22.5%
With pick-up (% of “very” or “somewhat” interested in CSA)	69.2%	28.8%	0.0%
With pick-up (% of those “not interested” in CSA)	0.0%	25.0%	75.0%
In Clarksburg? ( <i>all respondents</i> )	22.0%	36.0%	44.0%
In Clarksburg (% of “very” or “somewhat” interested in CSA)	33.3%	51.5%	12.1%
In Adams? ( <i>all respondents</i> )	29.4%	23.5%	47.1%
In Adams (% of “very” or “somewhat” interested in CSA)	46.9%	37.5%	18.8%

Nonetheless, the average respondent would be willing to travel 20 minutes to get fresh produce, and 65% of respondents said they would like to visit the farm to pick up their produce (at least occasionally), which suggests that not all of the produce should be distributed through the drop-off/pick-up site. In terms of the location of the farm itself, the results in Table 1 show that there is not a strong preference for the Clarksburg site or the Adams sites, which gives us freedom to choose the location based on the characteristics of the farm sites themselves.

Finally, we asked several questions about how people would prefer to pay, to get an idea of the best possible financial structure of the farm. As can be seen in Table 2, our preliminary results indicate that 31.4% of our respondents would be willing to pay for a full-priced share (paying yearly), while 68.6% would be willing to pay for a reduced-price share (paying monthly). Because eligibility for reduced-price shares will likely be based on household income in our final CSA model, these numbers do not perfectly reflect the distribution of full and reduced-price shares, but they give us a good indication of willingness to pay. As Table 2 shows, respondents willing to pay for full-price shares would be willing to pay \$456 on average, while respondents willing to pay for reduced-price shares would pay \$183 on average (divided into monthly



installments throughout the 5-6 month growing season). In addition, it is worth noting that 20% of our respondents said they would potentially use food stamps to pay for all or part of their share in the farm.

Taking a weighted average of all the full-price and reduced-price groups, the average respondent would be willing to pay \$269 over the course of the year, which is—not surprisingly—considerably less than the \$400-600 charged by most CSA’s in the Northeast. On the other hand, 70.5% of our respondents said they would be willing to work on the farm in exchange for a price reduction, and 57.6% said they would be willing to pay extra so that someone else could have a less expensive share. These findings clearly show that our CSA model will have to incorporate various solutions beyond the traditional model, in order to establish a farm that is economically feasible. In addition, anecdotal evidence from talking to our survey respondents suggests that we should think critically about the size of our shares, since many of our potential members mentioned that they would not be able to use an entire share as large as the typical CSA share.

Table 2. Share Price Preferences

	<b>Full-priced (yearly)</b>	<b>Reduced-price (monthly for 5-6 months)</b>
Would you pay for a full-priced share or a reduced-price share?	31.4%	68.6%
How much would you be willing to pay for your share?	\$456.25 per Year	\$30.53 per month (\$183.16 per year) <sup>25</sup>
Weighted yearly average of all full-price and reduced-price shares	\$269.00	

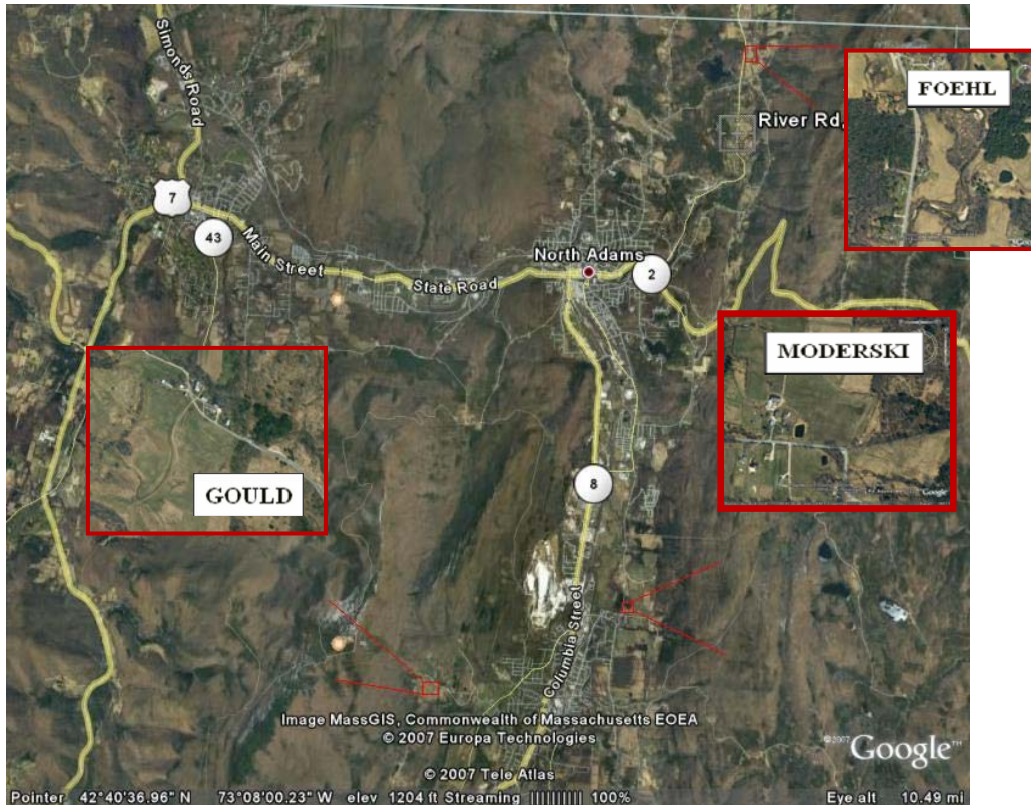
## Site Description and History

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<sup>25</sup> The price per year is calculated as the price/month\*6 months, because members would receive produce for 5-6 months of the year

Target:Hunger has already identified three potential plots of land for locating the CSA farm: one in Clarksburg and two in Adams. We assessed these sites through visits, inter views with the landowners, and consultation with other farmers.

Figure 7. Map of Potential Sites



### Site 1: Clarksburg, Curtis and Sharon Foehl

The Clarksburg site has been owned by Curtis and Sharon Foehl since 1986. It is located directly on Route 8 North, an easy four-mile drive from the center of North Adams. The site they are offering to Target Hunger consists of approximately four acres of land bordered by the North Hoosic on the eastern and southern sides, shrubbery and trees to the north, and the road and their house on the western side. The land was being used for haying when they purchased it, and they have continued to have it cut several times per year for the past 21 years. According to Mr. Foehl, the field does not get overly wet in the spring and has only rarely flooded – and only

in one corner – in the few years when the river has overflowed.<sup>26</sup> The mildly rolling field has a slight southern slope, and the samples obtained from the top 6 to 8 inches of soil are moist and not rocky. Besides the Foehl’s home, there are no existing structures on the land. We would be able to use at least 3 acres of the land for the CSA farm, and possibly more.<sup>27</sup>

Fig. 8. The Foehl Property, Clarksburg, Massachusetts



View facing East; the Hoosic River flanks the property just beyond the trees.

### **Site 2: Adams, Gould Farm**

The Gould Farm site is situated in a field adjacent to Gould Road at the base of Mount Greylock. The site is located on Route 8 South, about eight miles from the center of North Adams. Though it may be difficult to find and slightly out of the way, the land is only about a quarter mile from the popular Greylock Glen recreation area, and has an astounding view of the Mt Greylock summit. Development of a lodge, extended trails, and other attractions are being proposed for this area in the near future.

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<sup>26</sup> Personal communication with Curtis Foehl, Nov.5, 2007.

<sup>27</sup> Curtis Foehl.

The field is part of a 228-acre plot of land maintained by Joe Dean of Adams, MA. It is surrounded on all sides by the Mt. Greylock state reservation. Mr. Dean currently keeps approximately 100 acres of it as farmland and the rest is left as wooded or pasture land for horses (and in the past, cows), though he is presently logging the trees bordering our potential site in order to allow more sunlight to dry his hay. The farmland has been used for haying for the past 35 years; before that, a farmer grew corn and a mix of other crops.<sup>28</sup> The field is quite rolling, with several wet patches along the south and west edges, and the soil often becomes rocky four to five inches below the surface.

Figure 9. Mount Greylock State Reservation (Gould Farm in shaded green square)

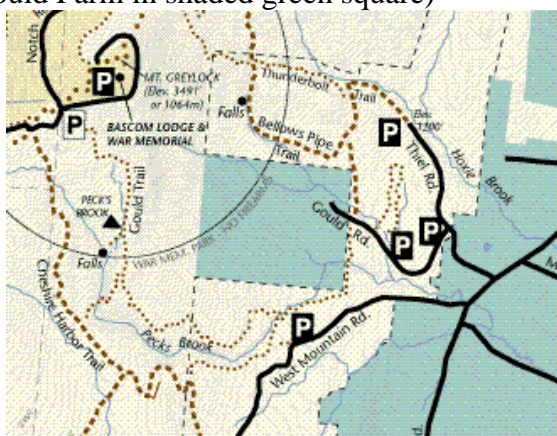


Figure 10. Gould Farm, View to the West



### Site 3: Adams, Sandra Moderski

The third site is 200 acres of farmland, about 8 of which would be considered for leasing. This site is used for haying, but the Moderskis also keep geese, emus, and chickens. The existing structures are a house, a cow barn, a horse barn, a hay barn, and a woodshed as well as a small man-made pond built fifty years ago. It is in a residential area 5.5 miles from the center of North Adams, close to Walmart and the McCann Technical School.

Figure 11. Moderski Property

Fig. 12. Moderski Pond

<sup>28</sup> Personal communication with Joe Dean, Nov. 5, 2007.



### Soil Sample Results

We conducted soil sampling based on the guidelines of the University of Massachusetts soil laboratory and sent then representative samples from each site in order to be analyzed for pH, organic matter, critical nutrients, and heavy metals, the basic test recommended for agricultural land. The three potential sites do not differ greatly in these categories, but it may be necessary to re-test the soil in the future because of mistakes in the sampling process. We learned after obtaining our results that the time of sampling can affect the nutrient content and that it is necessary to keep samples cool or dry them immediately in order to maintain their nitrogen levels. Because plants can store nutrients, it is possible that recent haying of the sites affected the nutrient levels – it may prove more useful to take samples before haying. Our second mistake was to cook our samples at 100 degrees Celsius in order to dry them out, which could have affected organic matter and nitrogen levels.<sup>29</sup>

**Table 3. Soils sample results from mid-November<sup>30</sup>**

	<b>Site 1: Foehl</b>	<b>Site 2: Gould</b>	<b>Site 3: Moderski</b>
<b>Soil pH</b>	5.8	5.3	5.7
<b>Buffer pH</b>	6.8	6.7	6.9
<b>Ground dolomitic limestone for pH adjustment (lbs)</b>	5	8	5
<b>Organic matter (%)</b>	5.1	6.7	5.3
<b>Nitrogen (ppm)</b>	1 (low)	16 (medium)	1 (low)

<sup>29</sup>Oregon State University Soil Test Interpretation Guide, E.S. Marx, J. Hart, and R.J. Stevens, 1996  
<http://extension.oregonstate.edu/catalog/pdf/ec/ec1478.pdf>.

<sup>30</sup> University of Massachusetts soil testing lab results.

<b>Phosphorus (ppm)</b>	5 (low)	6 (low)	6 (low)
<b>Potassium (ppm)</b>	14 (low)	19 (low)	17 (low)
<b>Calcium (ppm)</b>	979 (high)	883 (high)	1090 (high)
<b>Magnesium (ppm)</b>	20 (low)	87 (medium)	40 (low)
<b>Cation Exchange capacity (meq/100 g)</b>	7.6	9.3	8.7
<b>Micronutrients</b>	All normal	All normal	All normal
<b>Extractable aluminum</b>	72	40	36
<b>Lead level</b>	low	Low	low

## Soil pH and Buffer pH

Soil pH is a measure of the soil's acidity and is a primary factor in plant growth. When pH is maintained at the proper level for a given crop, plants nutrients are at maximum availability and beneficial soil organisms are most active. Most plants thrive in soils with a pH in the middle part of 5.5-7.5 range, except acid lovers such as blueberries, rhododendrons, potatoes. Both the Foehl's and the Moderski's soil falls in this range, but the Gould site is very slightly acidic.

Buffer pH measures soil's capacity to resist pH change after lime has been added: as buffer pH drops below 6.8, you need more limestone. The Gould site is the only one that would need limestone added, by this measurement. The University of Massachusetts soil lab tests recommend adding 5 pounds of ground dolomite, a type of rock, to the Foehl and Moderski sites and 8 pounds to the Gould site in order to adjust pH.

## Organic Matter

Organic matter refers to the carbon compounds in soil that come from living microbes and plant material. The higher the organic matter percentage in soil, the better; the University of Massachusetts lab lists the range from 4 to 10 % as desirable. All of our organic matter levels are lower end of this range, but this may be a result of cooking our soil in the lab to dry it out before sending it to the lab. It is possible to boost the percentage of organic matter by adding

compost, cover cropping, and limiting tillage, which adds oxygen to the soil and breaks down the organic matter more rapidly.

### **Critical nutrients**

Plants require several key nutrients in abundance for growth. These include Nitrogen, Phosphorus, and the cations Potassium, Calcium, and Magnesium. There are also several other elements, known as micronutrients, that are necessary in much smaller amounts – such as Boron, Manganese, Zinc, Copper, Iron, and Sulfur – and tend to be in adequate supply in properly limed soils.

Nitrogen is essential to plant growth, but it fluctuates widely and quickly in soils, and there tends to be none left at the end of the growing season. Our sites may be lower because they had all just been hayed or because of heating our samples before sending them to the lab. Low levels of NO<sub>3</sub>-N, the variation of nitrogen we tested for, are defined as below 10 parts per million, medium levels are between 10 and twenty, high ranges from 20 to 30, and excessive levels are any measuring above 30.<sup>31</sup>

Phosphorus provides plants with the means of using the energy harnessed by photosynthesis to drive its metabolism. Warm, moist soils at about pH 6.5 optimize the release of both major forms of phosphorus. Plants need a great of phosphorus. If there is not enough, they are unable to utilize nitrogen and water efficiently, and are more susceptible to disease, so fertilization is often necessary to maintain proper levels. Magnesium acts with phosphorus to drive plant metabolism and is part of chlorophyll.

Calcium is essential to functioning of plant cell walls and membranes. Sufficient calcium must also be present in actively growing plant parts. High humidity and poor soil drainage hinder calcium movement, which is undesirable. Each of our sites contain high levels of calcium.

Cation Exchange Capacity measures soil's ability to retain and to supply nutrients (most of this comes from basic nutrient cations of Ca, Mg and K). This measure represents the primary

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<sup>31</sup> Oregon Sate University

soil reservoir of readily available K, Ca, Mg and other micronutrients. A measure between 10 and 15 is typically adequate, but all three sites are lower than this, meaning that it may be harder for the soil to retain and supply nutrients.

### **Heavy metals**

The basic soil test measures extractable aluminum and lead levels. Extractable aluminum is not necessary for plant growth, but at high levels it can be extremely toxic. It can damage roots and limit the plant's ability to take up phosphorus. Acid loving plants are tolerable of high aluminum levels. The count at the Foehl site is higher than the others, but we are still unsure if it is high enough to be dangerous. Proper liming can lower aluminum to acceptable levels. It is also important to have low lead levels in soil. If lead level is below 150 ppm, it is called "low" and considered safe, while levels above 300 ppm are dangerous to people. All of our sites are safe in terms of lead. <sup>32</sup>

### **Soil Remediation: Cover Cropping and Fertilizer**

At any of these three sites, it will be necessary to build up the nutrients in the soil before planting begins. This can be done through methods such as cover cropping and specifically tailored fertilizers and manure. Cover crops are most often planted in the fall to protect and rejuvenate soil over the winter and early spring, when they are tilled under to contribute their organic matter to the field, rather than harvested to sell. They are also used as rotation crops when soil needs to be laid fallow. Cover crops are useful for preventing wind and water erosion, reducing compaction and weed growth, and retaining nutrients and microorganisms. <sup>33</sup>

The most commonly used cover crops are legumes and annual grasses, and different plants and the timing of planting are selected based on the needs of the soil. Legumes are used to fix nitrogen (which will be desirable with our low levels) and non-legumes recycle existing

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<sup>32</sup> <http://www.umass.edu/plsoils/soiltest/interp1.htm>

<sup>33</sup> <http://www.ncsu.edu/sustainable/cover/cover.html> (Dr. Mary Peet, NCSU, Sustainable Practices for Vegetable Production in the South)



nutrients and reduce nutrient loss from mineral leaching.<sup>34</sup> One cover crop that may prove to be particularly helpful at any one of the potential sites is alfalfa, a legume. Each of the three sites have been hayed for 10 to 20 years, and alfalfa can aerate soil and combat compaction, a common side effect of long-term haying.<sup>35</sup>

The nutrient levels reported by the University of Massachusetts are, for the most part, low, which may be function of the land being hayed for so long. In addition to cover cropping, it will be necessary to address the specific nutrient deficiencies through various organic fertilizers and/or manure. Manure has a high content of the nutrients vital to plant health, and the University of Massachusetts recommends adding it along with dried blood as an organic fertilizer. In order to address the low levels of phosphorus and potassium, the lab advises using bone meal or rock phosphate and wood ash, respectively.

The results from our soil test tell us that the three sites do not differ greatly in terms of pH, organic nutrients, and metals. None of the sites have especially exceptional quantities of organic matter or nutrients, but because there are techniques that can be used to ameliorate these conditions, we will put more weight on the type of soil and the superficial characteristics of each site. Our low numbers will be important results to return to when it comes time to assess the amount and types of fertilizer that will be necessary for this farm.

### **Soil Type and Site Attribute Analysis**

Due to the similar results obtained in our soil sampling and the fact that most nutrient deficiencies can be ameliorated, we chose to focus our analysis of each site based on the desirability of each soil type and the external attributes of each site. The features we determined as most important to this evaluation are the topography (terrain and fertility), the start-up costs, the accessibility to community members, amount of arable acreage, the ease of food distribution,

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<sup>34</sup> <http://ohioline.osu.edu/agf-fact/0142.html>

<sup>35</sup> Interview, 11/24, Greag Maslowe, Newton Community Farm

the opportunities for partnerships with neighbors, and the aesthetics. These more superficial characteristics are important to consider because they will affect the feasibility of farming each site. The rockiness, slopes, existing structures, area for parking and distribution, and aesthetics are factors crucial to the success of a farm in addition to quality of the soil.

**Table 4. Soil Types<sup>36</sup>**

<b>Site 1: Foehl</b>	<b>Site 2: Gould</b>	<b>Site 3: Moderski</b>
<b>Merrimac Fine Sandy Loam:</b> 85.4% of site 0-3% slope Subclass: stony or droughty Prime Farmland	<b>Peru-Marlow Association:</b> 95.4% of site Rolling, rocky Subclass: stony or droughty	<b>Amenia Silt Loam:</b> 100% of site 3-8% slopes Subclass: erodible Prime Farmland
<b>Hero Loam:</b> 10.7% of site 0-3% slope Subclass: wet Prime Farmland	<b>Amenia Silt Loam:</b> 4.6% of site 8-15% slopes Subclass: erodible	
<b>Hadley Silt Loam:</b> 3.9% of site 0-3% slope Prime Farmland		

Site 1: Foehl Property

The Foehl site is made up of three different types of soil: Merrimac Fine Sandy Loam, Hero Loam, and Hadley Silt Loam. All three of these are categorized as “prime agricultural land” by the Natural Resources Conservation Service (NRCS), and when we took soil samples the ground felt softer and was less rocky than either of the other two sites. It has slopes of zero to three percent and the whole field has a slight south-facing slope, which is ideal terrain for farming. Any rolling makes mechanical farming difficult and results in uneven water distribution across crop rows; a south-facing slope allows for the most exposure to sunlight throughout the day. This will be a boon to this site, since it has the highest potential for shading during the day because of the density of trees around the edges of the field. The site is also located alongside river, which could be used for irrigation if the correct permitting is obtained; if this possibility

<sup>36</sup> National Resource Conservation Service <http://efotg.nrcs.usda.gov/treemenuFS.aspx>, <http://nesoil.com/prime1.html>.

can be realized, it would not be necessary to build a well and start-up costs would be significantly lowered.

Figure 13.  
Northern corner of Foehl property.



Figure 14.  
View of Foehl house.



Without the possibility of river irrigation, construction and infrastructure costs at the Foehl site would be high. At each site, this project will require an access road, parking and buildings to house a distribution center, office, storage, cooler, and a greenhouse. The Foehl site has a possible access road which could also provide parking, but no existing structures that could be renovated for any of these purposes; thus, several building projects would be necessary. This brings up a second drawback to the site: its small size. The Foehl property is by far the smallest of the three, totaling eight acres – a space that already includes a house, yards, and driveway. This means that any construction will further impose on the arable acreage. The proximity of the farm site to the Foehl’s home will be a significant facet to consider. Since our ideal starting acreage is five acres, almost all of their free space would have to be leased in order to have enough room to cultivate at least two acres and to let 2-3 other acres lay fallow. This could be a detriment to the farm in that it would hinder any future expansion.

One salient issue in the analysis of these sites is their distance from town centers. Because this farm will focus on including people from all income groups, it will be desirable for the site to be as accessible as possible to people who do not own cars. The Foehl’s property is actually the closest site, at only 4.5 miles from the center of North Adams, but it is farther from public transportation routes than either of the others, and it has been suggested that because it is

in Clarksburg, close to Vermont, that it may be perceived as farther away. It is also more isolated than the other sites – there are fewer neighbors and businesses in the area – which could have a negative impact on the potential community partnerships.

#### Site 2: Gould Farm

The Gould site is comprised mainly of soil in the Peru-Marlow Association classification, which is categorized as rolling and extremely stony by the NRCS. A small percentage of it is Amenia Silt Loam, which is categorized as prime farmland, but because of the steepness of its slopes, it may be highly erodible. The 8-15% slopes might be steeper than desirable for the kind of farming we are pursuing. In addition, the ground at the Gould site is known to be frequently soggy and when we took soil samples, its rockiness made taking the samples difficult.

Unlike the Foehl property, there are existing structures here, but it is not certain whether they would be available for conversion into the necessary structures for this project, meaning that the construction and infrastructure costs here would also be high. However, the site is large enough that any construction would not impose upon the arable acreage, and there is plenty of room for expansion in the future. The configuration of the road and field also makes this land the most ideal, at present in terms of food distribution: the road has space for parking that is near to the field that would be cultivated.

Fig.15. View of Gould Farm from the roadside.



The location of the Gould site at present is the least accessible in terms of distance. However, it is closer to businesses and is part of a larger tract of land that will be maintained,

meaning that there may be more opportunities for community partnerships. This will be especially true because of the planned Greylock Center outdoor recreation center, which will draw people to the area, making the site more accessible and widely known, as well as increasing the possibilities for cooperation and outreach.

### Site 3: Moderski Property

The Moderski site is entirely made up of Amenia Silt Loam, another soil type categorized as prime agricultural land. However, it has slight slopes of 3-8%, which brings it into the category of highly erodible land. This may not be a major concern, but it will be necessary to keep in mind the possibility of erosion if this site is chosen.

The Moderski site has many advantages. The property is over 200 acres, meaning that the area leased can be large enough for future expansion. The only detriment to the size is that the existing parking lot is far from the area to be cultivated. The Moderskis' property is also the closest to a public transportation route, and is nearby both Drury High School and the McCann Technical School, two places where valuable partnerships could be pursued. There has been interest in increasing local foods in the North Adams public schools, an endeavor no local farmers have considered feasible, but one that could generate a significant source of income for this project. In addition, McCann teaches carpentry, mechanics, and culinary arts, fields that would all tie in well with the activities on a small community farm. A partnership with McCann could take the form of community service, field trips, internships, or work exchanges.

The Moderskis already use the land for several animals: cows, emus, chickens, and geese, all of which could make the site more attractive to community members. During the survey process, several people expressed interest in diversifying the farm experience to include more than just vegetables, such as a bakery and eggs. If a community farm was established here, the Moderskis were enthusiastic about a partnership between their existing business in eggs and this project.



Fig. 16. Sandra Moderski and emus



Fig. 17. Moderski woodshed and barns

In terms of start-up costs, this site has some existing structures that could be renovated, and a small pond that could potentially be used for minimal irrigation, but it would still require a great deal of input to establish the necessary structures for the farm. Though this is certainly a secondary condition, the Moderski site is not quite as breathtaking as the other two sites, since it is located next to a limestone quarry.

There are clear advantages and disadvantages to all of our sites, but without a method of systematically evaluating the sites, a balanced comparison would be difficult. After assessing each site in terms of the important features we identified – the quality of the land, existing structures, accessibility, opportunities for partnerships, and aesthetics – we created a matrix that allowed us to apply a semi-scientific analysis to an evaluation that is somewhat subjective. Underlying all of these factors, however, is the limiting factor of soil fertility; since this project is by nature full of uncertainties, it will be important to return to the soil conditions and research the site-specific methods for remediation once a site is chosen.

### **Relevant Law and Policy**

We reviewed relevant land-use law and policy to ensure that the CSA plan would meet legal requirements at every site. Fortunately for the project, agricultural and horticultural use of land in Massachusetts enjoys great regulatory leniency. Agricultural use exempts the land from many town and state regulations, as well as qualifies it for special tax benefits. First of all, the

state defines “active” horticultural use as parcels of five acres or more, used to produce plants for sale, grossing at least \$500 a year.<sup>37</sup> The CSA farm would at least include 5 acres, for crop rotation purposes, and would certainly sell more than \$500 a year. With this beneficial classification, the farm operations are by state law exempt from any regulations and restrictions by zoning ordinance or bylaw.<sup>38</sup>

Further legal exemptions also apply to the Foehl property in Clarksburg, which falls under several environmental protection regulations. First, much of the land lies both within FEMA’s defined 100-year floodplain, as well as within the 100-ft buffer zone for the river protection area.<sup>39</sup> The Massachusetts Wetlands Protection Act, however, grants exemptions to “normal maintenance” and “normal improvement” activities conducted on land in agricultural and horticultural use. This could also exempt small structures such as sheds or greenhouses, provided that they do not significantly alter flood control capacity.<sup>40</sup> However, any alterations to the land would still require the conservation commission’s approval. The Natural Heritage and Endangered Species Program has also identified the Foehl property as both an “Estimated Habitat for Rare Wildlife” and “A Priority Habitat for Endangered Species,” which would regulate land use under the Massachusetts Endangered Species Act<sup>41</sup> – except that agricultural/horticultural use is once again exempt.<sup>42</sup>

The Foehl property involves one final complication, which agricultural/horticultural status does not solve. The river that winds through the property would provide a seemingly ideal source of irrigation, especially since the Foehls’ own well is shallow, and they would not be able to divert any of its water to the farm.<sup>43</sup> However, because pumping from a river does not qualify as “normal maintenance and improvement of the land” for horticultural purposes, pumping is not

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<sup>37</sup> Massachusetts General Laws, Chapter 61A, Sections 1 and 2.

<sup>38</sup> Massachusetts General laws, Chapter 40A, Section 3.

<sup>39</sup> “Community Development Plan, Town of Clarksburg.” Prepared by the Berkshire Regional Planning Commission, 2003.

<sup>40</sup> “Farming in Wetland Resource Areas.” Commonwealth of Massachusetts. <http://www.mass.gov/dep/water/laws/farman.pdf>.

<sup>41</sup> “Community Development Plan, Town of Clarksburg.” Prepared by the Berkshire Regional Planning Commission, 2003.

<sup>42</sup> 321 CMR 10.62.

<sup>43</sup> Sharon and Curtis Foehl, personal communication, Nov.19, 2007.

exempt for regulatory review. Chapter 21G of the Massachusetts Water Management Act requires a lengthy permitting process for water withdrawals, which the Massachusetts Department of Environmental Protection regulates.<sup>44</sup> Because the site is both an Estimated and Priority Habitat for Endangered Species, installing a pump would also require filing the project under the Massachusetts Endangered Species Act.<sup>45</sup> While the possibility of using the river to irrigate makes the Foehl property an attractive option, the environmental restrictions mean that we cannot necessarily depend on river access.

Not only does agricultural/horticultural use qualify land for many exemptions, but it also opens up tax benefit opportunities. After two years of agricultural/horticultural use, the land can be taxed at the class three, commercial property tax rate, under Chapter 61A.<sup>46</sup> In addition, the state Agricultural Preservation Restriction (APR) Program pays landowners the difference between “fair market value” and the “agricultural value” of farmland, if the owner agrees to a permanent deed restriction which prohibits any activity that might damage the land’s agricultural viability.<sup>47</sup> The entire Gould property, in fact, is already preserved through the APR program.<sup>48</sup> The other two property owners, the Foehls and Moderskis, might similarly benefit from such a deal, which could both lower lease prices and help ensure that the CSA become a long-term endeavor, since non-agricultural development would be prohibited.

### **Comparing CSA Models of Reaching Low-Income Residents**

In addition to our site assessments, we have researched and compiled many models that farms and CSAs use to reach people of low income. Though it may not be possible to incorporate

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<sup>44</sup> Massachusetts General Laws, Chapter 21G.

<sup>45</sup> Personal communication with Kristin Black, Endangered Species Review Biologist, Natural Heritage and Endangered Species Program, Dec. 6, 2007.

<sup>46</sup> Massachusetts General Laws, Chapter 61A, Section 4.

<sup>47</sup> “Agricultural Preservation Restriction Program (APR).” Massachusetts Department of Agricultural Resources. <http://www.mass.gov/agr/landuse/APR/index.htm>.

<sup>48</sup> “Community Development Plan, Town of Adams.” Prepared by the Berkshire Regional Planning Commission, 2004.



all of these elements, any combination of them could help fulfill the economic and social goals of the Northern Berkshires CSA.

First, the CSA could allow members to pay for shares in increments throughout the season. This is a model employed by many farms that serve people of low income, as it enables the farmer to get paid in full, while making CSA membership feasible for those who do not have a lump sum to pay at the beginning of the season. In order to ensure that the farmer has all of his capital up front, most farms that employ this model use a revolving loan structure. In this structure, eligible members borrow from a communal fund to pay the farmer at the beginning of the season, then pay the fund back (at 0% interest) throughout the season. Canticle Farm, a non-profit CSA in Allegany, NY, uses a revolving loan structure, which was made possible by a one-time grant from the Hunger Action Network. Because the fund is replenished at the end of each season, it can be reused every year. If the fund is depleted in the course of the year, fundraising can be used to replenish it.<sup>49</sup>

Another advantage to incremental payments is that members can then use food stamps to pay for their shares. The Food Stamp Program grants food stamps to eligible citizens, who can then use these supplements to purchase food and/or seeds and plants, which aligns well with the educational goals of a CSA farm. Chelsea CSA in Chelsea, NY allows its members to pay for their shares using food stamps/EBT. New York law allows participants to pay for CSA shares in bi-weekly installments, so the CSA uses a revolving loan structure to pay the farmers at the beginning of the season. The fund is replenished by the EBT payments throughout the season.<sup>50</sup> The Massachusetts Food Stamps Program allows participants to use their credits towards CSA shares, so long as the CSA is registered with the state program. Though registration involves a lot of paperwork, a CSA in the Northern Berkshires would be eligible.

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<sup>49</sup> Hunger Action Network, "Community Supported Agriculture in New York State." <http://www.hungeractionnys.org/CSAProfiles.pdf> and <http://www.canticlefarm.org>

<sup>50</sup> Hunger Action Network.

Many CSAs supplement their membership programs with sales at local farmers' markets. These markets can allow the farmers to get rid of excess produce and make extra profit by selling the produce at market prices (which are often much higher than CSA share prices). Farmers' markets allow farmers more room to experiment with crops, as they are accountable only to the market and not to CSA members who have expectations for the produce they have already purchased. Farmers' market shoppers are also given more choice at the market, though the prices there are often higher than for a CSA share. The North Adams farmers' market always welcomes new farmers, charging a minimal fee of \$2 to farmers who want to set up a weekly stand.

Because farmers' market prices are often high, a farmer could attract low-income community members by offering a low-income membership at his or her market stand. Low-income community members would receive a card that they would present at the farmers' market stand in order to receive a reduced price on the produce. In addition, this model could help gauge interest in a CSA versus farmers market as a venue for selling produce to people of low income: if there is more interest at the farmers market, the farm could transition to a different model. The Food Project in Concord, MA distributes 5% of its produce at low-income farmers' markets in Boston.<sup>51</sup> This is difficult and unprofitable, as farmers cannot depend on the income. However, it does raise awareness about the farm and its vegetables.<sup>52</sup>

Most farms that serve people of low income have funds for donations. If the farm is a registered non-profit, these donations are tax deductible. Donations can be used to reduce all share prices, supplement reduced-price shares or create a revolving loan fund for those who wish to pay incrementally. Using a donation fund, the Genesee Valley Organic Community Supported Agriculture Farm offers a limited number of scholarships to those who cannot afford even the low-end of their sliding scale membership fee. With the scholarship, share fees can drop as low

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<sup>51</sup> The Food Project. [www.foodproject.org](http://www.foodproject.org).

<sup>52</sup> Interview with Don Zasada at Caretaker Farm.

as \$5 per week for a full share.<sup>53</sup> Caretaker Farm in South Williamstown receives a grant from Share the Bounty, which allows the farmers to give two shares to a local soup kitchen.

Most CSAs incorporate education and community outreach to fulfill their missions of holistic community-based food systems. These programs teach CSA members about agriculture, food and nutrition, focusing on the value of local food systems. Programs often incorporate valuable, marketable skills, which might attract and benefit under- and unemployed participants. Finally, education and outreach programs bring people to the farm, to see where their food comes from, and builds community between members. Caretaker Farm runs a number of courses, workshops and community events throughout the year. In 2007, members were invited to courses on sustainability and global warming, workshops to learn canning and pickling processes and community events like their autumn harvest festival.

Farms can also access the surrounding community by distributing produce at local schools through farm-to-school programming. Shirley Nescarpo, who coordinates the North Adams' schools food programs, is looking for a farmer to provide her schools with produce.<sup>54</sup> Such programs could generate revenue for the farm while also improving the nutritional value of school meals, introducing students to healthy, fresh vegetables and creating educational opportunities (field trips to the farm and farmer programs at the schools). The Northern Berkshire CSA could also partner with pre-existing local programs, like REACH Community Health's community gardens, to build educational programs and partnerships with the local community.

Many CSAs allow members to work on the farm for a reduction in share price. This opportunity can help people of low income reduce their share prices, while also teaching usable skills and agricultural education. The extra labor also reduces the farm labor costs, especially if the farmer is able to barter a share for high skilled labor. Caretaker Farm offers 6-7 barter shares

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<sup>53</sup> Hunger Action Network and <http://www.gvocsa.org/>

<sup>54</sup> Personal communication with Helen Harrison, Dec. 4, 2007.

each year, trading produce for machine repairs from a jet-engine repair man and milk and cheese from Cricket Creek Farm. Caretaker members who work 10 hours or more throughout the season receive a \$50 discount. At Canticle Farm, members can choose to buy a working share, in which the price of the share is reduced by \$6 for every hour worked.<sup>55</sup>

Another labor opportunity employed by many farms is the creation and sale of value-added products as well as niche marketing to local restaurateurs and retailers. The creation of value-added products provides entrepreneurial and skill-building opportunities that empower members, while also gleaning extra profit for the farmers. Similarly, niche marketing of specialized products like mushrooms provides opportunities for high profits with low cost margins which would allow the farm to reduce share prices. According to the Center for Integrated Agricultural Systems in Madison, WI, “A common strategy among farms in the study is to grow one or more specialty cash crops (such as fancy salad mix or heirloom tomatoes) for niche markets while growing a range of other crops for CSA members.”<sup>56</sup>

Finally, many farms distribute their produce to people of low income by donating a portion of their produce to local pantries, kitchens and shelters. Canticle Farm donates at least 20% of its produce to local pantries and kitchens every year. The Food Project, which runs a CSA in Concord, MA, donates 30% of its produce to pantries and shelters in Boston. The non-profit Share the Bounty pays Caretaker Farm to give two shares per week to the Berkshire Food Project. Though two shares are paid for, the Berkshire Food Project often receives four or five shares of surplus produce or boxes that were not picked up by members. There are many local pantries and shelters in the Northern Berkshires who would likely be glad to receive fresh produce, though this particular CSA could probably find more sustainable and empowering ways to reach people of low income.

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<sup>55</sup> *ibid*

<sup>56</sup> CIAS,

[http://www.cias.wisc.edu/archives/1999/03/01/managing\\_a\\_csa\\_farm\\_2\\_community\\_economics\\_marketing\\_and\\_training/index.php](http://www.cias.wisc.edu/archives/1999/03/01/managing_a_csa_farm_2_community_economics_marketing_and_training/index.php).

Farmers have devised many innovative and effective ways to distribute their produce to people of low income. From reducing prices through donations and profitable market sales to structuring incremental payment and work exchange programs, local farms are making themselves increasingly accessible to people of low-income. These models offer viable and exciting ideas for the new Northern Berkshire CSA.

### **Economic Feasibility**

For the farm to serve as a sustainable response to hunger in the Northern Berkshires, it must be sustainable itself. While the planning committee that continues our work on the project will be responsible for tackling the finance details, we considered it important that a feasibility report include general baselines for assessing economic viability. To gain a sense of possible costs, we consulted with the Don Zasada from the Williamstown CSA Caretaker Farm, Dominic Palumbo from the Sheffield-based part-CSA Moon in the Pond Farm, and Greg Maslowe from Newton Angino Community Farm. We especially relied on the estimates of Caretaker Farm and Newton Angino Farm. Don Zasada is a seasoned farming veteran with experience not only on Caretaker but as former head grower of The Food Project in Boston, and well-versed in the various costs of farming. We saw the 1.25-acre Newton Angino Farm, now in its second year, as a valuable indicator of the initial costs of a small CSA. To estimate revenues from the CSA itself, we also modeled a target CSA design for the farm, with 80 shares total that include 40 low-income shares, with a quarter of all shares as half-shares.

Don Zasada suggested that 1-2-acre farm, the size we envision for the beginnings of the Target:Hunger CSA, could hold start-up costs to \$20,000. These expenses would include a \$10,000 tractor, as well as a toolshed, drip irrigation system, electric fencing, harvesting supplies, tillage tools, and hand tools. Other than the tractor, the other items range between \$1,000 and \$3,000. We could keep costs low by finding used materials and tools whenever possible. This “cheapest-case scenario” would also not include housing for farm laborers, storage facilities, or a

greenhouse. Again, Don stressed that these cost estimates “are all very general.”<sup>57</sup> Start-up costs would also change if the farmers could borrow or rent a tractor – or if the farmers decided storage facilities or a greenhouse were important to include from the beginning. In addition, digging a well can cost between \$4,000 and \$11,000, depending on its depth, although pumping from a river would cost roughly \$2,000.<sup>58</sup> The start-up plan would also have to consider creating an access road or parking area. Ultimately, while these costs are highly variable, we can predict at least \$20,000, and likely more – potentially as high as \$40,000 or \$50,000, depending on the plan. Yearly operating costs are just as complicated and difficult to predict, but, again, we still wanted to lay out potential costs and considerations. These costs would include labor; transportation; tractor and equipment costs; supplies for the field, potential greenhouse, and irrigation; transplants if we are not starting everything from seed; mulch, seeds; compost and fertilizer; taxes; marketing; rent; and insurance. Again, however, our early estimates are fuzzy at best, and the final price would involve a number of variables, from types of produce grown to where the farm got its compost. The farm could also make concerted efforts to keep farm costs low, such as encouraging volunteer labor, and using sustainable, low-input, minimal-labor growing practices. For example, Future Farm, a CSA in New York state, built a compost-heated greenhouse, uses solar panels for electricity, controls large-pest predation through permanent fenced beds, minimizes soil tillages, and builds cold-frames to extend the growing season.<sup>59</sup>

In estimating these costs for a small farm, the Newton CSA offered the most relevant data. For the first two years, the farm spent roughly \$13,000 and \$16,000, respectively, although the second year’s costs include a \$1,200 farmer’s market fee. Once labor costs are added, in the third year, the farm’s expenses rose to \$34,000, with nearly \$16,000 for labor costs. The price of labor would be one of the most critical variables in determining yearly expenses. The Newton

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<sup>57</sup> Personal communication with Don Zasada, Dec. 4, 2007.

<sup>58</sup> Personal communication with Hutchins Farm, Nov. 28, 2007.

<sup>59</sup> Hunger Action Network. [http://www.hungeractionnys.org/mini\\_announce.htm](http://www.hungeractionnys.org/mini_announce.htm).

farmer received \$14,000 and the seasonal assistant farmer \$1,680.<sup>60</sup> Creating an employment plan was beyond the scope of this project, but we want to emphasize how dramatically this plan would affect yearly costs, and the importance of striking a balance between fair wages and a balanced budget. Fortunately, the new CSA planning community includes at least one member with extensive experience in the details of farm finances. Cary Quigley writes farm business plans for the Massachusetts Department of Agricultural Resources' Farm Viability Enhancement Program, and will be able to fill in details where our estimates leave off. In general, however, we can predict at least \$30,000 of yearly operating costs, when labor wages are at a very minimum.

### **Estimating Annual Revenue**

To understand how these expenses would factor into a net income, we modeled a “target” CSA model, with 2 acres producing 80 shares. Caretaker Farm produces roughly 35 (large) shares per acre,<sup>61</sup> and the Newton farm 48 shares per acre,<sup>62</sup> so we used an average of 40 shares per acre for our model. While few CSAs that aim to serve low-income residents offer even 50% of their shares at lower prices, we felt that the Target:Hunger CSA should aim for at least 50%, in order for the farm to make a significant contribution to community food security, and advance Target:Hunger's goals. Based on comments from the initial focus group, and from our clients' own strong suggestions, we included half-shares in the model; one-quarter of all shares, both full-priced and reduced-priced, are half-shares.

Finally, we created a two-tiered system for each type of share. Under our model, low-income residents can pay \$25 a month for a share, or, if they demonstrate extra need, only \$10. We looked to other CSAs that serve low-income residents to gauge the range of monthly prices.

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<sup>60</sup> Personal communication with Greg Maslowe, Dec. 4, 2007.

<sup>61</sup> Personal communication with Don Zasada, Nov. 19, 2007.

<sup>62</sup> Greg Maslowe.

The Genesee Valley Organic CSA offers \$20 shares,<sup>63</sup> while the Chelsea CSA provides \$40 shares.<sup>64</sup> We chose a standard low-income share between these two examples, but also wanted to know how the model could accommodate even cheaper shares. Low-income half-shares would be priced at \$10 and \$5, respectively.

CSA members who do not qualify for low-income shares could choose to pay \$500 or \$700. We set a goal of convincing 10 out of 40 of these members to pay \$700, with 20 members paying \$500, and the remaining 10 members buying half-priced shares at \$275. We calculated the full-priced shares based on standard CSA prices: the Newton farm offers \$525 shares and \$275 half-shares, Moon-in-the-Pond offers a sliding scale of \$150-\$1,000 shares, and Caretaker Farm charges \$585 for a two-adult share.<sup>65</sup> However, given how many survey respondents indicated willingness to pay extra to subsidize low-income shares, the \$700 option could be an important part of the economic plan, especially if we emphasize the \$200 tax exemption and how even \$700 is cheap compared to equivalent supermarket costs. Table 5 depicts the results of our model.

Table 5. Model CSA Annual Revenue

	Tier 1 revenue (\$ x shares)	Tier 2 revenue (\$ x shares)	Half-share revenue	Total revenue
Full-priced shares	\$500 x 20 = \$10,000	\$700 x 10 = \$7,000	\$275 x 10 = \$2,750	\$19,750
Low-income shares	\$10 x 10 = \$100	\$25 x 20 = \$500	For Tier 1: \$5 x 5 = \$25 For Tier 2: \$15 x 5 = \$75	\$700/month x 6 months = \$4,200

The model predicts final CSA revenues of \$23,950. Significantly, and encouragingly, the average price per person (\$23,950/80 people) comes out to just under \$300 for a full season.

This price is only slightly more than the average price our survey respondents would be willing to pay, \$269. However, how do these numbers square with start-up costs and operating costs?

<sup>63</sup> Hunger Action Network and <http://www.gvocsa.org>.

<sup>64</sup> Chelsea CSA. <http://www.chelseacsa.org>.

<sup>65</sup> Personal communication with Don Zasada, Nov. 19, 2007.



With start-up costs beginning at \$20,000, and operating costs at the very least \$30,000, the farm would clearly need sources of income beyond the CSA, even if it reduced the number of low-income shares. The Newton farm, for example, which offers all full-price shares, still only grosses \$31,000-\$34,000 from the CSA shares.<sup>66</sup> Here, other marketing options, from the farmer's market to public schools to niche products for restaurants, could help balance the budget. Again, as an example, the Newton farm was able to pull in \$17,000 from on-site and farmer's market sales, in addition to the 60 CSA shares.<sup>67</sup>

### **Funding Opportunities**

Not only outside markets but also outside funding will be crucial in getting finances off the ground, especially at the beginning. The Food Project, for example, which profits from CSA shares and farmers market sales, only began to break even after five years of assistance from public and private donations.<sup>68</sup> Fortunately, a wide variety of funding options, both public and private, and in the form of both grants and loans, could boost the CSA's business viability. Target:Hunger is already applying for a USDA Community Food Security Competitive Grant, which aims to promote community food security under the 1996 Federal Agriculture Improvement and Reform Act. This one-time grant provides matching funds of \$10,000-\$30,000, for between 1-3 years.<sup>69</sup> Also part of the USDA's Cooperative State Research, Education, and Extension Service, the Sustainable Agriculture Research and Education program provides similar funding. Under the Northeast Region SARE program, the CSA could apply for a "Sustainable Community Grant" for up to \$10,000.<sup>70</sup> Once the farm is underway, the Massachusetts Department of Agricultural Resources's Farm Viability Enhancement Program

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<sup>66</sup> Greg Maslowe.

<sup>67</sup> Ibid.

<sup>68</sup> Personal communication with Don Zasada, Dec. 4, 2007.

<sup>69</sup> "Hunger and Food Security," USDA Cooperative State Research, Education, and Extension Service. [http://www.csrees.usda.gov/nea/food/in\\_focus/hunger\\_if\\_competitive.html](http://www.csrees.usda.gov/nea/food/in_focus/hunger_if_competitive.html).

<sup>70</sup> "Grants," Northeast Sustainable Research and Education. <http://www.uvm.edu/~nesare/grants.html>.

helps existing farms diversify and strengthen operations through technical assistance and business planning. The program can fund new projects that the business plan proposes.<sup>71</sup>

Private sources of funding, such as the Equity Trust, Inc. and the E.F. Schumacher Society, could also help the farm deal with start-up costs. These two organizations offer low-interest loans especially geared toward projects that promote environmental sustainability and community-building.<sup>72</sup> In general, the CSA's emphasis on food security, sustainable agriculture, and community open up many funding opportunities.

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<sup>71</sup> Massachusetts Department of Agricultural Resources. "Farm Viability Enhancement Program." <http://www.mass.gov/agr/programs/farmviability/index.htm>.

<sup>72</sup> "The Equity Trust Fund," Equity Trust, Inc. [http://www.equitytrust.org/ForBorrowers\\_06.htm](http://www.equitytrust.org/ForBorrowers_06.htm) >; "SHARE Microcredit Program," The E.F. Schumacher Society. [http://www.schumachersociety.org/share\\_microcredit.html](http://www.schumachersociety.org/share_microcredit.html).

PART V.  
Recommendations

**Site Recommendations**

To compare our sites quantitatively, we created an evaluation matrix based on the factors previously discussed. We weighted each factor between 1 and 4, according to its importance, with land and soil receiving the greatest weight (4), followed by startup cost (3) and access for community (i.e. ease of getting to the farm; 3). Arable acreage, ease of food distribution, aesthetics, and opportunity for partnership with neighbors were also important considerations but received less weight in our quantitative assessment. Having created this system, we then evaluated each site within each category, assigning values that reflected our assessment of each site's attributes. It is important to note that this assessment compares each site on a relative basis, not an absolute basis, and it is inherently subjective. Fortunately, it is easy to alter the matrix if more information becomes available regarding a specific characteristic, which will probably be the case as the farm committee creates more accurate estimates of startup costs for each site. Similarly, if committee members decide to re-weight certain characteristics according to their preferences, the matrix can easily change to reflect these modifications.

For our final site ranking, we multiplied the values by the weights of all the categories, creating a total score for each site. As Table 6 shows, we found the Moderski farm to be the most suitable of the three sites, primarily due to its excellent soil, in addition to the relative ease of access, the existence of room for potential future expansion, and good opportunities for partnership with neighbors, namely McCann Technical School. The Foehl site is our second choice, given that it also has excellent soil, reasonable access, and great aesthetic value, but lacks room for future expansion and could be somewhat difficult to farm with full crop rotation, because of its small size. At this point in time, the Gould site is the least suitable for our project, primarily due to its rolling, rocky terrain and less productive soil. This does not imply that the Gould site is unsuitable for farming, and indeed the site might be quite desirable for a standard

CSA or for another type of farm or even an orchard; however, due to the economic uncertainties inherent in this project, it would be ideal to be able to rely on the soil to be highly productive.

Therefore, we recommend the Moderski site as the best option for this project, but any one of the three sites could potentially support a successful CSA.

Table 6, Site Assessment Matrix

Site	Land and soil (terrain and fertility)	Startup Cost	Access for community	Arable acreage	Ease of food distribution	Aesthetics	Opportunity for partnership w/ neighbors	Total score
<b>(weight)</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	
Moderski	4	2	4	4	3	4	5	<b>54</b>
Foehl	5	1	3	2	3	5	2	<b>46</b>
Gould	2	2	2	3	4	5	4	<b>39</b>

### CSA Model Recommendations

As has been demonstrated, there is both great need and great interest in a CSA farm that would create access for people of low-income in the Northern Berkshires. The challenge now is to build a farm model which would achieve access to fresh food for all while also remaining financially sustainable. After interviewing multiple local farmers and researching different CSA and low-income farm models, we compiled a buffet of possibilities for a low-income CSA. We recommend that this project start with a baseline model and add any number and combination of the aforementioned low-income elements in order to achieve maximum accessibility for people of low income.

Our baseline CSA model is built on a traditional CSA structure with a focus on people of low income. We recommend that the farm offer half of its shares at full price and half at reduced prices. This is a particularly ambitious baseline, as most farms that target people of low income offer a much smaller proportion of shares at reduced prices. We concede that this structure is

ambitious and may be modified for the purposes of financial stability, but it is important to the mission of the farm that a significant proportion of shares be offered at a reduced price.

For the full-priced shares, we recommend a two-tiered structure in which members can choose to pay either \$500 or \$700 for their share. A \$500 share would cover the costs of producing one family's food, while a \$700 share would allow the farm to allocate the additional \$200 to subsidize low-income shares. This additional \$200 would be tax deductible and members would be highly encouraged to make the donation, as the farmers would remind them that the equivalent to the produce they receive over the season might cost \$1400 at a commercial grocer like Stop and Shop and \$2100 at a local organic market like Wild Oats.<sup>73</sup>

Reduced price shares would be offered only to those members who qualify as "low-income." Though eligibility requirements would have to be determined by the farmer, a common and advisable structure requires that "low-income" members prove that they meet one of five criteria: annual income below \$25,000, use Medicaid, use SSI, use food stamps, or live in public housing.<sup>74</sup> Reduced-price shares would also be priced on two tiers, with prices determined according to community interest and need.

In addition to full and reduced price shares, our baseline model requires the farm to offer half shares. In a focus group of interested community members and in many conversations with those surveyed, Target:Hunger learned that many community members could not eat a full share's worth of produce every week.<sup>75</sup> Half-shares may be especially attractive to people of low-income, who may not be accustomed to eating fresh produce (as it is too expensive in the grocery store) and may also prefer the extra low prices.

Finally, the baseline model includes a food pick-up site in North Adams, as our survey indicated strong preference for this element. Many people of low income may be unable to reach the farm, for lack of transportation, and would thus prefer to pick up their food at a drop-off site

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<sup>73</sup> Zasada.

<sup>74</sup> Hunger Action Network

<sup>75</sup> Personal communication with Helen Harrison, Nov. 30, 2007.

nearer to their homes. We believe that these four elements, of full and reduced price shares, half shares and a central pick up site are essential to the structure and mission of this farm.

After this baseline is established, we recommend that the farm add some of the aforementioned programs to help subsidize shares and target people of low income. Five of the discussed programs are highly recommended and could be implemented as the farm starts up. These include incremental payment structures, acceptance of food stamps, distribution at farmers' markets, low income farmers' market membership and a fund for donations. The remaining six programs discussed (education and outreach, farm-to-school programs, working and barter shares, value-added products, niche marketing and donations to local pantries and kitchens) are also recommended, but would likely take time and resources to implement. Therefore, we recommend that these programs be phased in after the farm has experimented and stabilized for a few years.

One further consideration is whether the farm should start as a CSA at all. The Food Project (CSA) Farm in Concord, MA, spent its first year selling at farmers' markets, which allowed the farm more room to make mistakes in its infancy.<sup>76</sup> Though a CSA can guarantee a farmer's income, it also ties the farmer to the members in a demanding relationship that is not always conducive to learning from mistakes. Thus, it is possible that the goal of a CSA may be best reached by starting small and at the market rather than as a full-fledged CSA farm.

Thus, based on our research, farmer interviews and surveys, we recommend a baseline CSA model which incorporates any of the eleven recommended add-on elements. Some of these elements can and should be implemented when the CSA starts while others would be more feasible and effective if incorporated later. All are viable and desirable options that could make this farm a reality.

## **Economic Considerations**

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<sup>76</sup> Zasada.

As the new committee uses our site and model proposals to create an even more detailed plan of the farm, we hope that our economic feasibility study can also provide broad lessons, and a model of how to approach budget estimates. Essentially, in order to ensure economic feasibility, we recommend that the farm planners look to income sources beyond CSA shares, as well as to outside funding. Even a preliminary budget estimate clearly demonstrated high costs and limited revenue. However, by seeking out other markets such as farmer's markets, schools, and restaurants, and by tapping into the wealth of funding opportunities that exist, the farm can move towards economic sustainability. As a final consideration, during our public presentation one audience member suggested that the economic planning technique work not only to minimize expected costs, but also imagine the maximum costs. Such ambitious goals could energize fundraising campaigns and grant applications even more; the project could even surpass its fundraising goals. We recommend that the planning committee approach the budget proposals with a frugal bottom-line but an ambitious, imaginative ceiling.

## **Conclusion**

With careful planning, a CSA that especially serves low-income residents is not only feasible, but now seems likely to happen. Already, Target:Hunger previous work and our project's research have excited and inspired landowners, community members, and potential partners, and set important conversations in motion. This feasibility report offers site and model recommendations and, most importantly, basic data and a framework for the new CSA committee to continue to refine the farm plan. Perhaps most excitingly, this project uncovers both hidden needs and hidden strengths in the community. The Northern Berkshires' high rate of food insecurity may be surprising to some, and is troubling, but the overwhelming community support for local agriculture, and the eagerness to get involved, suggests that the community already holds important tools for achieving food security.

**Appendix 1: Survey results (total respondents noted next to each question)**



**Survey of Northern Berkshire Residents on Fruits, Vegetables and Community Supported Agriculture Farms**

This survey is for Target:Hunger Northern Berkshire and is completely confidential. Target:Hunger is a four-year project led by the Food Bank of Western Massachusetts and Northern Berkshire Community Coalition. Target:Hunger aims to reduce the number of people experiencing hunger and food insecurity in the Northern Berkshires. We are working with the community to create a plan that will allow residents greater access to healthy, inexpensive food. Thank you for helping us reach our goals by answering these questions!

**Do you live in Adams 2, Cheshire 1, Clarksburg 1, Florida 3, North Adams 38, Savoy 0 or Williamstown 14 ?**

**How satisfied are you with the AVAILABILITY of fresh fruits and vegetables in the area?**

16 Highly Satisfied   34 Somewhat Satisfied   12 Not Satisfied

**How satisfied are you with the AFFORDABILITY of fresh fruits and vegetables in the area?**

7 Highly Satisfied   25 Somewhat Satisfied   30 Not Satisfied

**When buying fruits and vegetables, is it important to you that ...?**

56	The fruits and vegetables are fresh
20	The fruits and vegetables are organic
40	The food is good for you nutritionally
50	The food is affordable
37	The food is locally grown
38	That you can get the kinds of fruits and vegetables you want

**What kinds of transportation are available to you for going to buy vegetables?**

46	Car
5	Bus
2	Ride from a friend, neighbor or relative
2	Bike
1	Agency Van
7	Walk

**How far are you willing to travel in order to get fresh vegetables?**

6 5 minutes   12 10 minutes   9 15 minutes   13 20 minutes   18 30 minutes   5 more than 30 minutes

Target:Hunger is thinking about starting a new farm in the Northern Berkshires. This farm would be a CSA, which stands for Community Supported Agriculture. A CSA farm asks its members to pay for their year's produce at the beginning of the season, which allows the farmers a guarantee that they will be able to cover their season's costs. Once the harvest begins around April, CSA members can pick up their share of the produce every week. Additionally, CSA's serve as education centers, where community members of all ages can come to learn about farming, cooking, nutrition, etc.

The Target:Hunger CSA would provide some of its shares at full price and some at a discount for families who would not otherwise be able to afford them. Part of the discount would be an opportunity to pay for your share every month, with cash or food stamps, rather than at the beginning of the season.



**How interested are you in joining a CSA farm?**

19 Very Interested 15 Somewhat Interested 25 Not Interested

**How interested are you in joining a CSA farm located in Clarksburg?**

11 Very Interested 18 Somewhat Interested 22 Not Interested

**How interested are you in joining a CSA farm located in Adams?**

15 Very Interested 12 Somewhat Interested 24 Not Interested

**If the CSA had a pick-up location near your home, would you be interested in a CSA in either of these places?**

19 Very Interested 12 Somewhat Interested 9 Not Interested

**If we had a drop off, would you prefer to visit the farm and see how a farm works or pick up your produce at the drop off?**

26 Prefer to visit the farm and have the experience of seeing how a farm works.

14 Prefer to have a share brought to a pick-up location closer to where I live.

**How much interest in this program do you think there would be in your community?**

19 Much Interest 29 Some Interest 0 No Interest

**Full-priced shares generally cost between \$400 and \$600, paid at the beginning of the season. Would you be interested in a full priced share (yes: 11) or would you prefer a reduced price share, which would be payable by the month (yes: 24)?**

**(If full price) How much would you be willing to pay for share in the farm, which would provide your family with weekly produce for about 5-6 months?**

10 \$400-\$450 3 \$450-\$500 2 \$500-\$550 1 \$550-\$600

**Would you be willing to pay extra so someone else could have a less expensive share?**

19 Yes 14 No

**(If yes) how much per year would you pay?**

3 \$25.00 4 \$50.00 3 \$75.00 4 \$100.00 3 \$200.00 0 More!

**If you were paying monthly for a reduced price share, would you prefer to pay with food stamps or cash?**

4 food stamps 36 cash

**If paying monthly, how much would you be willing to pay each month for four to five weeks' worth of produce?**

5 \$10 6 \$20 9 \$30 3 \$40 12 \$50 1 More 1 All are too high

**Although it would not be required, the farm might have an option of working in exchange for a discount. How willing or able would you be to work in exchange for a price reduction?**

6 Very Willing/Able 7 Somewhat Willing/Able 10 Not Willing/Able

The following questions are for statistical purposes to make sure that we reach a wide variety of people with this survey.

**Which of the following categories best describes your total household income for 2006, before taxes?**

8	Under \$7,500
5	\$7,500 to less than \$10,000
8	\$10,000 to less than \$15,000
12	\$15,000 to less than \$25,000
6	\$25,000 to less than \$35,000
3	\$35,000 to less than \$50,000
4	\$50,000 to less than \$75,000
3	\$75,000 to less than \$100,000
4	\$100,000 or more

**How many people are in your household?** 23 1, 21 2, 4 3, 4 4, 5 5, 1 6

**Gender:** 29 Male 26 Female

**What is your age?**

1 (under 18) 12 (18-25) 3 (26-35) 5 (36-44) 12 (45-54) 25 (55-older)

**What is your race or ethnicity? (Optional)** 45 White/Caucasian 3 Other

## Appendix 2: Information pamphlet for survey respondents



### More info on Target:Hunger and the new farm project

Target:Hunger is a four-year project led by The Food Bank of Western Massachusetts and Northern Berkshire Community Coalition. Target:Hunger aims to reduce the number of people experiencing hunger and food insecurity in the Northern Berkshires. We are working with the community to create a plan that will allow residents greater access to healthy, inexpensive food.

Right now we are in the process of planning a Community Supported Agriculture (CSA) farm. A CSA farm asks its members to pay for their year's produce at the beginning of the season, which guarantees that the farmers will be able to cover their season's costs. Once the harvest begins around April, CSA members can pick up their share of the produce every week.

This new CSA would provide some of its shares at a discount for families who would not otherwise be able to afford them. Part of the discount would be an opportunity to pay for your share every month, rather than at the beginning of the season. These monthly shares would be payable in food stamps as well as cash. Other shares would be available at full price. Additionally, CSAs serve as education centers, where community members of all ages can come to learn about farming, cooking, nutrition, and more.

**Your questions and comments are always welcome!**

**Contact: Target:Hunger Program Manager Helen Harrison at 413-672-1167 or [helenh@foodbankwma.org](mailto:helenh@foodbankwma.org)**

**Appendix 3: Soil test results**  
**From the Soil and Plant Tissue Testing Lab**  
**University of Massachusetts at Amherst**

<b>Soil Attribute</b>	<b>Foehl</b>	<b>Gould</b>	<b>Moderski</b>	<b>Recommended</b>
Soil pH	5.8	5.3	5.7	5.5-7.5
Buffer pH	6.8	6.7	6.9	6.8
Nitrogen (ppm)	1	16	1	
Organic matter (%)	5.1	6.7	5.3	
Phosphorus (ppm)	5	6	6	
Potassium (ppm)	14	19	17	
Potassium (% base saturation)	0.5	0.6	0.6	~4
Calcium (ppm)	979	883	1090	
Calcium (% base saturation)	70.7	54.1	72.1	~70
Magnesium (ppm)	20	87	30	
Magnesium (% base saturation)	2.4	8.8	3.3	~12
Cation Exchange Capacity (Meq/100g)	7.6	9.3	8.7	10-15
Micronutrients	all normal	all normal	all normal	
Boron (ppm)	0.1	0.1	0.1	
Manganese (ppm)	33.5	96.3	95.3	
Zinc (ppm)	0.5	2	0.4	
Copper (ppm)	0.2	0.2	0.2	
Iron (ppm)	6.2	7	4.3	
Sulfur (ppm)	22.3	29.2	27	
Extractable Aluminum (ppm)	72	40	36	
Lead level	low	low	low	
Recommended lbs 5-10-10 fertilizer per 100 sq feet	4-5	4-5	4-5	
lbs of ground dolomitic for soil pH adjustment	5	8	5	

Significance of attributes:

- **Soil pH:** Measure of the soil's acidity and a primary factor in plant growth. When pH is maintained at the proper level for a given crop, plants nutrients are at maximum availability, toxic elements are often at reduced availability and beneficial soil organisms are most active. Most plants thrive with a pH in the middle part of 5.5-7.5 pH range, except acid lovers, like blueberries, rhododendrons, potatoes.
- **Buffer pH:** Soil's capacity to resist pH change after lime has been added. As buffer pH drops below 6.8, you need more limestone.
- **Nitrogen:** Essential to all plant growth. Nitrogen is leached from the soil each season and must be replenished every year (with additions such as manure or compost).
- **Phosphorus:** Provides plants with the means of using the energy harnessed by photosynthesis to drive its metabolism. Warm, moist soils at about pH 6.5 optimize the release of both major forms of phosphorus. Plants need a lot of phosphorus, but levels available at any one time are low. Soil tests assess the soil's ability to supply phosphorus from bound forms during the growing season.

- **Potassium:** Plants use require Potassium. If Potassium levels are too low, the plants cannot utilize nitrogen and water efficiently, and are more susceptible to disease. Fertilization is often necessary to maintain proper levels.
- **Calcium:** Essential to functioning of plant cell walls and membranes. Sufficient calcium must also be present in actively growing plant parts (such as fruits and roots). High humidity and poor soil drainage hinder calcium movement.
- **Magnesium:** Acts with phosphorus to drive plant metabolism and is part of chlorophyll. Low levels are not a problem, if exchangeable cations are in good balance.
- **Cation exchange:** Measures soil's ability to retain and to supply nutrients (most of this comes from basic nutrient cations of Ca, Mg and K). This measure represents the primary soil reservoir of readily available K, Ca, Mg and other micronutrients.
- **Micronutrients:** Elements essential to plants, but required in very small amounts. In properly limed soils, they're usually adequate.
- **Extractable Aluminum:** At high levels, extremely toxic to plant roots and limits the plant's ability to take up phosphorus. Acid-loving plants are tolerable of high aluminum levels. Proper liming will lower aluminum to acceptable levels.
- **Lead level:** If lead level is below 150 ppm, it is called "low" and considered safe. Levels above 300 ppm are dangerous to people.

#### Appendix 4: Site assessment matrix

Site	Land and soil (terrain and fertility)	Startup Cost	Access for community	Arable acreage	Ease of food distribution	Aesthetics	Opportunity for partnership w/ neighbors	Total score
<b>(weight)</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	
Moderski	4	2	4	4	3	4	5	<b>54</b>
Foehl	5	1	3	2	3	5	2	<b>46</b>
Gould	2	2	2	3	4	5	4	<b>39</b>

## Appendix 5: Farm Planning Resource Directory

### Client Contacts

Name	Contact Information
Helen Harrison, Target:Hunger Program Manager	413-672-1167 (cell) 413-247-9738 ext. 108 (Food Bank) helenh@foodbankwma.org
Kim French McMann, Interim Coordinator	kimfrenchmcmann@gmail.com

### Landowners of Potential Farm Sites

Name	Location	Telephone/Email
Sharon and Curtis Foehl	1360 River Road Clarksburg, MA 01247-4611	413-519-5822 (cell) 413-663-3146 (voice mail) CurtisFoehl@yahoo.com, SharonFoehl@yahoo.com
Joe Dean (Gould property)	Gould Road Adams, MA 01220	413-743-1380
Doris and Sandra Moderski	Spring Road Adams, MA 01220	413-743-2330 smoderski@berkshiremanticschool.org

### Farm Resources

Farm	Contact Information	Contact Person
Caretaker Farm (Williamstown, CSA)	413-458-9691 don@caretakerfarm.org Website: www.caretakerfarm.org	Don Zasada
Moon In The Pond Farm (Sheffield, part CSA)	413-229-3092 dom@mooninthepond.com Website: www.mooninthepond.com	Dominic Palumbo
Newton Angino Community Farm (Newton, CSA)	newtoncommunityfarm@comcast.net Website: www.newtoncommunityfarm.org	Greg Maslow
Canticle Farm (Allegany, NY; CSA with low-income shares)	716.373.0200 ext. 3358 info@canticlefarm.com Website: www.canticlefarm.org	Rhonda Berman
Future Farm (Chemung County, NY; CSA)	607-589-4102	Rob Young
Chelsea CSA (Chelsea, NY; CSA with low-income shares)	212.924.6710 chelseacsa@yahoo.com Website: www.chelseacsa.org	Deb and Pete Kavakos
Genesee Valley Organic (Newark, NY; CSA Farm with low-income shares)	585-442-5658 Fergy51@yahoo.com Website: www.gvocsa.org	Dave Ferguson
The Food Project (Concord; CSA, donates to food pantries, youth programs)	781-259-8621 info@thefoodproject.org Website: www.thefoodproject.org	Jen James, Associate Director

## Northern Berkshires Community Resources

Organization	Contact Information	Contact Person
Berkshire Food Project	413-664-7378 berkshirefood@hotmail.com	Valerie Schwarz
REACH Community Health Foundation	413-664-5284 Jmunoz@nbhealth.org	Jennifer Munoz
UNITY Youth Program	413-663-7588 kmerrigan@nbcoalition.org	Kate Merrigan
Drury Regional High School Community Service	413-662-3240 ext.1205	Debbie Rosselli
McCann Technical School Student Services	413.663.5383 ext. 109	Mary Lou Accetta
North Adams Farmer's Market	413-664-6180	Ron Bunt and Everett Randall
Cricket Creek Farm	413-458-5888 info@cricketcreekfarm.com	Jason DeMay and Amy Jeschawitz

## State of Massachusetts Resources

Program	Contact Information	Contact Person
Farm Viability Enhancement Program	617-626-1725 Craig.Richov@state.ma.us	Craig Richov
Agricultural Preservation Restriction Program	413-577-0459	Rick Chandler, Western Mass. Coordinator
Massachusetts Food Stamps Program	617-565-6380	
Natural Heritage and Endangered Species Program	508-389-6386 Kristin.E.Black@state.ma.us	Kristin Black

## Funding Opportunities

Grant Name	Description	Website
USDA Community Food Projects Competitive Grants Program	\$10,000-\$30,000 matching funds, 1-3 years, for community food security projects	<a href="http://www.csrees.usda.gov/nea/food/in_focus/hunger_if_competitive.html">www.csrees.usda.gov/nea/food/in_focus/hunger_if_competitive.html</a>
Northeast Region SARE Program, "Sustainable Community Grant"	Up to \$10,000 "to reconnect rural revitalization and farming"	<a href="http://www.uvm.edu/~nesare/grants.html">www.uvm.edu/~nesare/grants.html</a>
Farm Viability Enhancement Program	Business plan, funding for identified projects	<a href="http://www.mass.gov/agr/programs/farmviability/index.htm">www.mass.gov/agr/programs/farmviability/index.htm</a>
Equity Trust, Inc.	Low-interest loans for community food security projects	<a href="http://www.equitytrust.org">www.equitytrust.org</a>
E.F. Schumacher Society	Low-interest loans for "high risk" community projects	<a href="http://www.schumachersociety.org">www.schumachersociety.org</a>