THE PIONEER VALLEY FOOD SECURITY PLAN

No one goes hungry. We grow our own food.

Catalyst for Regional Progress
PVPC

Produced by the Pioneer Valley Food Security Advisory Committee and the Pioneer Valley Planning Commission with support from the U.S. Department of Housing and Urban Development Sustainable Communities Initiative Regional Planning Grant Program

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1.0 INTRODUCTION

The Pioneer Valley is blessed with a robust, highly functioning and well integrated regional food system.

The Holyoke Farmers Market, one of many seasonal farmers markets in the Pioneer Valley. Photo: Girls Inc. of Holyoke.

Our regional food system includes dozens of successful small- and medium-sized farms run by farmers who cultivate some of the most fertile agricultural soils in the world. Our many grocery stores and co-ops stock as many local products as possible, and residents can take advantage of an ever expanding number (over 50 in 2013) seasonal farmers markets and an increasing number of winter markets—many of which now accept Supplemental Nutritional Assistance Program (SNAP) benefits. There is good access to major transportation routes that allow growers and manufacturers to move products to market efficiently. Local food advocates and anti-hunger organizations have a history of success providing food to hungry residents, helping them take advantage of food assistance programs, and facilitating the adoption of progressive food security-related policies at the state and local levels, including urban farming ordinances, municipal "right-to-farm" bylaws, as well as regulations that prohibit unhealthy foods in schools. There is a well-established commitment among institutional food providers, particularly schools, to supporting local farmers and producers. And a variety of organizations are active in efforts to develop and expand organic waste composting programs as well as developing waste to energy programs on farms.

Because our regional food system is relatively advanced, this plan is strategic in nature. It has been created to catalyze the existing resources and strengths of our food system and move the region forward. Food security is one of several aspects of regional sustainability planning for the Pioneer Valley now under way with funding from the Sustainable Communities Initiative of the United States Department of Housing and Urban Development. The planning focus areas of this broader effort include:

- Climate Change Actions and Clean Energy
- Environment (includes brownfields and water protection)
- **Food Security (this plan)**
- Green Infrastructure
- Housing

- Land Use
- Transportation (with an emphasis on transit oriented development)
- Workforce and Economic Development

In 2013, these plans will be integrated with the Pioneer Valley's economic development plan, the Plan for Progress, to produce a regional sustainability plan for the region. The top priorities from this plan will be integrated into an action plan for the Sustainable Knowledge Corridor, which includes the 30 municipalities of the Hartford, Connecticut Capitol Region and seven municipalities in central Connecticut. More information about this bi-state planning effort is available at: www.sustainableknowledgecorridor.org.

1.1 THE NEED FOR A REGIONAL STRATEGIC FOOD SECURITY PLAN

Compared to many other similarly sized regions, the Pioneer Valley's local food system is relatively mature. The key entities and organizations involved in local food production and anti-hunger programs cooperate effectively, communicate well and share many goals. And yet, the region continues to lose farmland to development and farmers to other careers; we import the vast majority of the food we consume and have only just begun developing regional food processing facilities; we have increasing numbers of food insecure households due to poor access to healthy food, economic injustice and poverty; and we compost or recover energy from only a tiny percentage of our food waste.

While there have been ad-hoc collaborations among the food security advocates and organizations in the past, to date there has not been a regional food security plan that provides strategic coordination and direction to make our food system a model of sustainable practices.

Today, we have a unique opportunity to catalyze existing food planning efforts so that we can do more, and do it faster, to improve food security at both the household and regional scales.

Therefore, this Pioneer Valley Food Security Plan has been created to help the region's food producers, consumers, anti-hunger organizations and others articulate and advance their shared goals for our sustainable food system.

In the broadest sense, our shared goals are:

No one goes hungry. We grow our own food.

The participants in the planning process for this food security plan have identified four supporting objectives for each of these goals.

Goal: No one goes hungry	Goal: We grow our own food.
Objectives	***Objectives***
1A: Further integrate emergency food systems and programs into the overall regional food system.	**2A:** Collaborate with organizations across New England and within our region to work toward the goal of producing 50% of all food that is consumed in the region.[1]
1B: Expand consumer outreach, education and advocacy to enhance use of healthy, local and culturally appropriate food.	**2B:** Preserve farmland and work to convert available land that may not currently be used as farmland to agricultural purposes.
1C: Increase access to healthy food.	**2C:** Invest in food system infrastructure.
1D: Make sure that as many people as possible who are eligible for food assistance (SNAP, WIC and other programs) receive it.	**2D:** Increase the capacity of people involved in the regional food system.

Strategies addressing these goals and objectives are presented in Section 4.

1.2 PLANNING PROCESS AND METHODS

This plan was produced by the Pioneer Valley Food Security Advisory Committee, which is staffed by the Pioneer Valley Planning Commission in partnership with Community Involved Sustaining Agriculture (CISA) and The Food Bank of Western Massachusetts, the region's leading hunger relief and local food system organizations. The planning process included both qualitative and a quantitative assessments of food security issues in the Pioneer Valley. This included extensive interviews with farmers, advocates, planners, and others working in the various components of the food system (summary of survey results in Appendix C), and the analysis of extensive data. The process also included research on best practices in regional food security across the United States to identify potential solutions to local needs. And the process involved engaging members of the general public, as well as the community of people

[1] *This 50% goal is drawn from the New England Good Food Vision 2060 for the six New England states produced by Food Solutions New England, most recently updated in April 2012. <http://www.foodsolutionsne.org> See Section 3.2.2.*

and organizations associated with PVGrows, a collaborative network dedicated to enhancing the ecological and economic sustainability and vitality of the Pioneer Valley food system, to assist in the identification of issues and prioritization of solutions.

Following are brief descriptions of the major entities involved in the development of this plan:

The Pioneer Valley Planning Commission (PVPC) www.pvpc.org is the designated regional planning agency for the Pioneer Valley Region of Western Massachusetts. PVPC is a consortium of 43 local governments that work together under the provisions of state law to address regional concerns. PVPC is a public agency but is not a direct arm of the federal or state governments. PVPC's staff of planning professionals works with community leaders and public agencies and officials to define and direct solutions to area-wide problems that cannot be solved by member communities alone.

Community Involved in Sustaining Agriculture (CISA) www.buylocalfood.org is a leading local food organization in the region. CISA is a nonprofit established in 1993 to strengthen the connections between farms and the community through programs that link farmers, community members, and markets. CISA's signature "Be a Local Hero, Buy Locally Grown"® campaign is the longest running "Buy Local" program in the country. Through its Senior Farm Share Program, CISA has been providing shares of local harvests to low-income seniors since 2004. CISA also has active programs to build local wholesale agriculture markets, scale up local food production, provide technical assistance for farmers, and support farmers markets.

The Food Bank of Western Massachusetts www.foodbankwma.org is the region's primary anti-hunger organization. The Food Bank began distributing food in 1982 out of a small warehouse, and by 2007 was distributing nearly 7 million pounds of food per year throughout Western Massachusetts (including Berkshire County). In 1991, the Food Bank Farm in Hadley became the first community-supported agriculture (CSA) farm in the region with the primary mission to help those in need of food assistance. The Food Bank currently distributes more than 7 million pounds of food – the equivalent of 6.3 million meals – each year to its 300 member agencies throughout the region. The Food Bank has also launched community advocacy and network capacity building programs that include SNAP enrollment and nutrition education, and recently concluded several food access and hunger planning efforts in the region.

If you have comments on this plan, please email or call Catherine Ratté at cratte@pvpc.org or 413-781-6045, or David Elvin at delvin@pvpc.org or 413-781-6045. Thank you for your interest!

2.0 INVENTORY AND ASSESSMENT

2.1 REGIONAL DEMOGRAPHICS AND CORE FOOD SYSTEM ASSETS

Chapter 2 summarizes food-security related demographics of the Pioneer Valley and the core assets for food production within the region. For detail on the state of the people in the region, please see PVPC's 2013 State of the People Report available at www.pvpc.org.

2.1.1 Regional Demographics

The Connecticut River runs through Franklin[2], Hampshire and Hampden Counties. In 2011 the Pioneer Valley region contained nearly 2,000 farms and some 300 restaurants, food retailers and other food-related businesses actively supporting the production and marketing of local food-a number that continues to grow.

The following table presents a brief demographic overview of each county.

Table 1: Hampden, Hampshire & Franklin County Demographic Data

	Hampden	Hampshire	Franklin	Mass. Statewide
Population density (per sq mi)	749	529	101	835
% Population under 18	23.6%	17.1%	19.3%	21.7%
% Population over 65	14%	12.8%	15.2%	13.6%
% Population White	76.5%	88.7%	94.2%	80.4%
% Population Hispanic	20.9%	4.7%	3.2%	9.6%
% Completed high school	83%	92%	91%	88.4%
% Living in poverty	17.2%	11.3%	12.8%	10.3%
Median Household Income	$46,646	$56,263	$48,993	$64,057
% Change in Employment 2000-08	-6.2%	+14.8%	-10.9%	-0.4%

U.S. Census 2010

[2] *While the Pioneer Valley Planning Commission is the designated regional planning agency for Hampshire and Hampden counties, we include data on Franklin County here (which is planned for by the Franklin Regional Council of Governments (FRCOG)) because there is much cross region collaboration-especially on the topic of food security and sustainable food system development. FRCOG is also developing a regional sustainability plan that addresses food security—for detail see www.frcog.org.*

2. 2 FOOD SYSTEM ASSETS IN THE REGION

Section 2.2 describes two core assets for food production in the region.

2.2.1 Farming and Food Production Assets

The Pioneer Valley's farms and food production facilities are a stable and integral part of the region's identity and economy. The following sections summarize these assets.

The Pioneer Valley's mineral-rich soils are the result of historic glacial-lake sediment deposits. These soils, which are considered among the most fertile in North America, provide ideal conditions for agricultural production.

In addition to favorable land conditions, the region is home to an active community of local farmers and laborers. Because 70% of farms in the region are owned by a person or business that resides locally, farmers tend to have strong personal ties to the region. And, while many children of farmers are choosing not to go into farming themselves, there is an active group of dedicated young farmers who are starting their own businesses.

In addition, the University of Massachusetts Agricultural extension program has been promoting and supporting agriculture in western Massachusetts for 150 years.

The Pioneer Valley region is home to a quarter of all farms in Massachusetts, comprising about one-third of the total agricultural land in the state. The 2007 Agricultural Census lists 1,960 farms in the three Pioneer Valley counties, comprising roughly 169,000 acres of land. Agricultural land constitutes 14% of the total acreage of the region. Franklin County has the highest proportion of farmlands in the state, at about 18%, and Hampshire has the second highest at 15% *(2007 Agricultural Census)*.

Farms in the Pioneer Valley are generally small in comparison to the farming operations in other parts of the United States. Most of the farms in the region are family farm operations on 50 acres of land or less.

Table 2: Total Farms and Farmland, 2002 and 2007

	Massachusetts		Franklin		Hampden		Hampshire	
	2002	2007	2002	2007	2002	2007	2002	2007
Number of Farms	6,075	7,691	586	741	458	508	542	711
Acres of farmland	518,570	517,879	74,281	79,465	37,637	36,841	50,756	52,756
Ave. Farm Size (ac)	85	67	127	107	82	73	94	74
Median Farm Size (ac)	37	24	88	48	56	31	48	37

Source: 2007 Census of Agriculture

Following a statewide trend, the number of farms in the region increased slightly in the last decade, with a total of 375 new farms since the 2002 Agricultural Census. The total amount of cropland in the Pioneer Valley dropped by about 4,000 acres from 2002 to 2007, while the rate of *harvested* cropland remained steady within that five-year timeframe. There was a significant drop in the quantity of cropland used for pasture or grazing of livestock, both in acres (about 4,400) and in numbers of farms (about 250).[3] Other types of pastureland increased during this time period, including the number of farms and acres of permanent pastureland.[4]

Table 3: Pioneer Valley Land in Farms According to Use, 2002 and 2007

	2002	2007
Total Cropland		
Farms	1,378	1,478
Acres	65,310	61,213
Total Woodland		
Farms	1,081	1,337
Acres	75,905	79,902
Permanent pasture and rangeland		
Farms	425	934
Acres	11,689	12,134
Land in farmsteads, etc.		
Farms	1,061	1,273
Acres	11,690	14,650
Pastureland, all types		
Farms	905	1,180
Acres	26,108	24,070

Source: 2007 Census of Agriculture

The number of farms selling livestock, poultry, or other animal products in the Pioneer Valley counties increased by about 400 from 2002 to 2007, while farms selling harvestable crops only increased by about 170 farms. The largest increase was seen in the number of farms selling poultry or eggs, an increase of 183 farms in the five-year span.

3 Land used only for pasture or grazing that could have been used for crops without additional improvement.
4 Grazable land that does not qualify as cropland or woodland pasture. It could be high quality pasture that could not be cropped without improvements, or barely grazable land only marginally better than wasteland.

Table 4: Farm Inventory by Agricultural Product, 2002 and 2007

	Total number of farms		Difference between 2002 and 2007
Crops	**2002**	**2007**	
Aquaculture	11	11	0
Cattle and calves	266	365	99
Christmas Trees and Woody Crops	82	70	-12
Fruits, Tree Nuts, Berries	171	213	60
Hogs and Pigs	38	74	36
Horses, donkeys, mules	65	78	13
Livestock, Poultry, and their products			
Milk and other dairy products from cows	115	119	4
Nursery, Greenhouse	202	189	-13
Other animals and products	72	96	24
Other crops and Hay	553	685	132
Poultry and eggs	121	304	183
Sheep, goats, and their products	117	161	44
Tobacco	50	59	9
Vegetables, melons, potatoes, sweet potatoes	288	302	14

Source: 2007 Census of Agriculture

About 66% of the farmers in the Pioneer Valley reported the market value of agricultural sales of their farm to be less than $10,000 annually, and a total of 81% of farmers reported the value of the sales to be less than $25,000. Close to 500 farms in the Pioneer Valley are directly selling their agricultural products to individuals for human consumption, at a 2007 market value of $8.9 million annually. The market value of all agricultural products sold in the region in 2007 was $121 million, marking local sales as 7.4% of all 2007 agriculture sales (*2007 Census of Agriculture)*.

Table 5: Farms by Value of Sales

	Number of Farms			
	Franklin	Hampden	Hampshire	Total
Less than $2,000	309	238	275	822
$2,500 to $4,999	93	70	82	245
$5,000 to $9,999	73	43	90	206
$10,000 to $24,999	110	63	114	287
$25,000 to $49,999	30	34	43	107
$50,000 to $99,999	33	16	31	80
$100,000 or more	93	44	76	213

Source: 2007 Census of Agriculture

There are 86 farms in the Pioneer Valley that are producing certified organic agricultural products, at a market value of $4.4 million, about 4% of the total agricultural market share of the region. Total acreage in organic production is less than 2,000 acres. The majority of the organic farms in the Valley and in the state are producing organic crops. There are a limited number of farms raising organic livestock or poultry, but a fair number producing livestock and poultry products.

Table 6: Organic Production, 2007

	Massachusetts	Franklin	Hampden	Hampshire
Total farms in organic production	319	50	5	31
Total acres in organic production	7,326	914	n/a	704
Total organic product sales	$17,515,000	$2,978,000	$26,000	$1,426,000

Source: 2007 Census of Agriculture

Table 7: Organic Products, in number of farms, 2007

	Massachusetts	Franklin	Hampden	Hampshire
Organic crops, including nursery and greenhouse	264	48	3	25
Livestock and Poultry	29	4	2	12
Livestock and Poultry Products	56	13	11	11

Source: 2007 Census of Agriculture

The 2007 Agricultural Census shows that 70% of the farms in the Pioneer Valley are fully owned by the farm operator, while only 5% of the farms are being leased. The remaining farms (25%) fall under a part-ownership status. The numbers of farms in all three categories increased between 2002 and 2007.

Beginning in 2002, there was an increase in the number of farm operators reported in the Agricultural Census and the number of primary farm operators increased from 1,586 in 2002 to 1,960 in 2007. While there has been an overall increase in the number of farms in the region and in the number of primary operators, a larger proportion of farmers do not considering farming to be their primary occupation or source of income. In 2002, 52% of primary operators reported that farming was their primary occupation, but by 2007 that percentage had dropped to 47%. Ninety-one percent of farms in the region are single-operator or two-operator farms. In 2007, the region contained roughly 470 farms, employing about 3,800 farm workers at a cost of $27 million. This cost includes paid family members but excludes contract laborers. About 65% of the total hired farm workers in 2007 worked less than 150 days, consistent with the timeframe of the New England growing season. In 2007, a total of 86 farms hired migrant farm workers.

Table 8: Hired Farm Labor, 2007

	Massachusetts	Franklin	Hampden	Hampshire
Number of farms	1,972	184	95	190
Number of workers	13,039	1,578	944	1,315
Payroll	$118.2M	$13.2M	$4.8M	$9.7M

Source: 2007 Census of Agriculture

Table 9: Migrant Farm Labor, by number of farms, 2007

	Massachusetts	Franklin	Hampden	Hampshire
On farms with hired labor	237	30	25	20
On farms reporting only contract labor	30	6	0	5

Source: 2007 Census of Agriculture

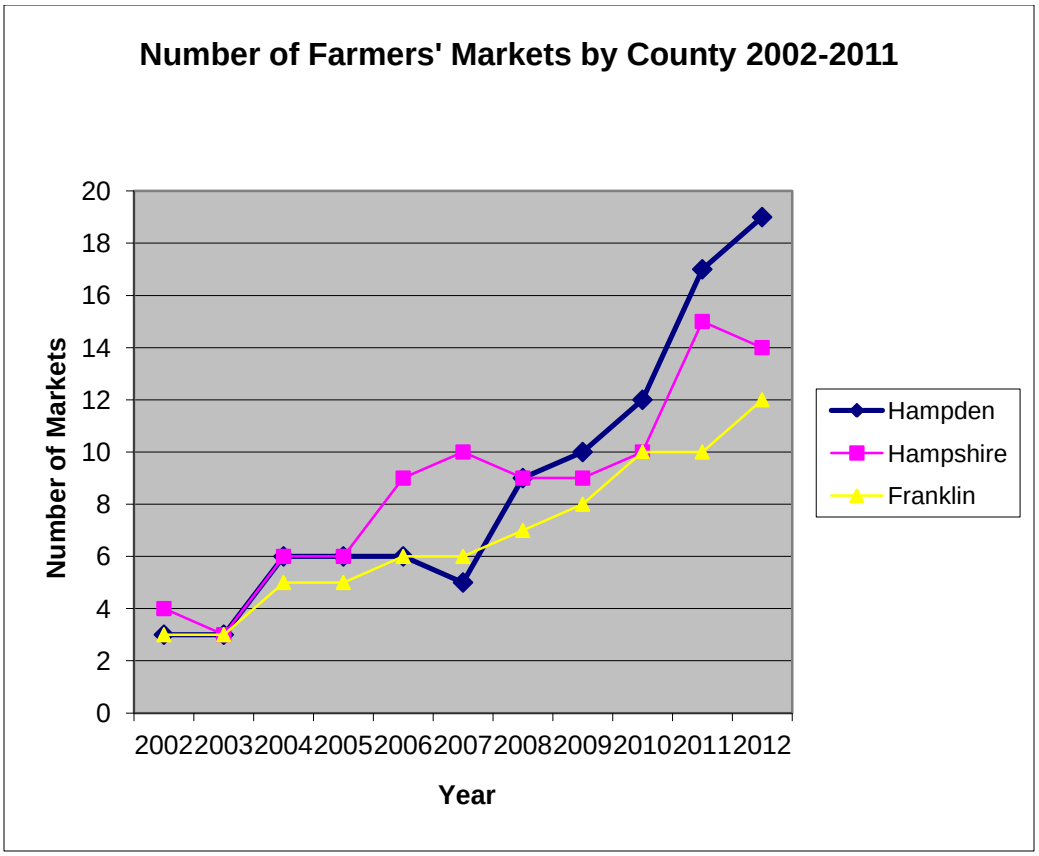
2.2.2 Strong Market Demand for Local Food

Another major strength of the Pioneer Valley food system is the community-based organizations and local businesses that have created a local food culture and the infrastructure that supports economic growth while addressing the need to provide hungry people with immediate access to food. Residents of the region generally support the production and purchase of local foods. There is recognition of the value of local farmers and encouragement for new value-added food businesses.

There are over 350 regional businesses selling and marketing local food, including some of the first food cooperatives in the country and numerous local restaurants that emphasize their use of local produce in advertising

In addition, there are 34 registered farmers' markets that operate in the region, including several that continue to sell local foods through the winter.[5]

[5] *See Regional Food Security Report Section 2: Inventory and Assessment – Food Production in the Pioneer Valley and Local Food Consumption*



Source: USDA Agricultural Marketing Services 2011

Demand for local food, especially produce, is also supported by major supermarkets. One noteworthy example is Big Y Supermarkets, which has a Local Partners Program and Local Farms Program dedicated to purchasing fresh produce and processed foods from local farms and businesses. Similarly, Stop & Shop Supermarkets make an effort to purchase local produce in season.

Table 10: Farmers' Markets in the Pioneer Valley

HAMPDEN COUNTY	MUNICIPALITY
Brimfield at Hitchcock Academy	Brimfield
Chicopee Farmers Market	Chicopee
Hampden Farmers Market	Hampden
Springfield/Indian Orchard	Indian Orchard
Local Harvest Farmers Mkt at the Longmeadow Shops	Longmeadow
Palmer/Three Rivers Farmers' Market	Palmer
Springfield Shriner's Hospital Farmers Market	Springfield
Concerned Citizens of Mason Square Farmers Market	Springfield
Springfield Farmers Market at the X	Springfield
Springfield Cooperative Farmers Market	Springfield
Holyoke Farmers' Market	Holyoke
Westfield Farmers Market	Westfield
SUBTOTAL:	**17**
HAMPSHIRE COUNTY	**MUNICIPALITY**
Amherst Farmers' Market	Amherst Center
Amherst Kendrick Park Market	Amherst Center
Belchertown Farmers Market	Belchertown
Easthampton Farmers Market	Easthampton
Park Hill Orchard	Easthampton
Hadley/Eden Farmers Market	Hadley
Northampton Thornes Marketplace Farmers Market	Northampton
Northampton Gothic Street Farmers Market	Northampton
South Hadley Farmers' Market	South Hadley
SUBTOTAL:	**9**
FRANKLIN COUNTY	**MUNICIPALITY**
Ashfield Farmers Market	Ashfield
Bernardston Farrmers Market	Bernardston
Charlemont Farmers Market	Charlemont
Greenfield Farmers Market	Greenfield
Northfield Farmers Market	Northfield
Shelburne Falls Community Farmers Market	Shelburne Falls
Orange Farmers Market	Orange
SUBTOTAL	**8**
3 COUNTY TOTAL	**34**

Source: USDA Agricultural Marketing Services 2011

ENTERPRISE FARM MOBILE MARKET BUS

It's a farmers' market on wheels! In 2010, Enterprise Farm in Whately bought a 1995 Chevy Bluebird recreational vehicle that was once used by a military traveling band. The RV's seats were ripped out to add produce bins, a refrigerator, stairs out the back, and an awning. The goal of the bus project is to bring certified organic produce grown on Enterprise Farm's 80 acres to urban areas that do not have access to fresh farm food. Because the mobile market brings fruits and vegetables direct from the grower, which allows prices to be kept low– comparable to wholesale in most cases. The mobile market also carries a SNAP machine to accept food stamps. In 2012, the Enterprise Farm Mobile Market expanded this year with sponsorship from Springfield Housing Authority, Springfield Department of Elder Affairs, Partners for a Healthier Community, and Health New England. Nutrition education was also provided by The Food Bank of Western Massachusetts.

http://bostonlocalfoodfestival.com/2011/06/enterprise-mobile-market-hits-the-road

The Pioneer Valley region is also home to numerous community gardens and community-based organizations that advocate for accessible and affordable healthy foods, promote the benefits of urban agriculture, develop opportunities for the increased retail of produce in urban locations, incubate local food processing businesses, and strengthen the emergency food safety net across the region.

Assessing the amount of local food consumed locally is challenging because data on local food purchases is difficult to obtain and calculate. While much locally grown food is also consumed locally, some of the crops produced in the region are grown primarily for export or for specialty processed or "boutique" food markets.

Current estimates suggest that Massachusetts as a whole is producing enough agricultural products to meet 4.0% to 5.6% of its food needs. Based on available farmland, it is estimated that the Pioneer Valley region could increase production to meet 17.6% of its own food needs. In Franklin, Hampden, and Hampshire counties, approximately 13% of household food budgets are spent on local food (not including purchases made by restaurants, retailers, and institutions); therefore, the total value of agricultural products produced and consumed within the region is actually likely to be slightly higher (Timmons, Wang, et. al. 2008).

2.3 FOOD SECURITY, FOOD HARDSHIP, AND FOOD DESERTS

"Food security" is a term that is used with increasing frequency in discussions of hunger and nutrition, from the global to the household levels, and often has different meanings, depending on the context.

At the global scale, the United Nations Food and Agriculture Organization (FAO) defines food security as, "all people, at all times, hav[ing] physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO 2003).

At the regional scale, food security typically refers to the capacity of a geographic area to produce an adequate supply of healthy food for its population. Goals for regional food security efforts may include reducing dependence on imported food, consuming an ever increasing percentage of locally grown food, and fostering regional economic growth.

At the household and individual scale, food security is generally understood to mean that regular and sufficiently diverse selections of foods are regularly accessible and affordable for a person or family's purchase and consumption. Increasingly significant to this definition is the nutritional value and cultural appropriateness of food, both for individual well-being and overall public health.

In the Pioneer Valley, the rate of food insecurity varies from 14.3% in Hampden County to 10.2% in Hampshire County. There are an estimated 90,900 people in the region who do not have enough money to regularly buy the food they need for a healthy diet (Feeding America 2011).

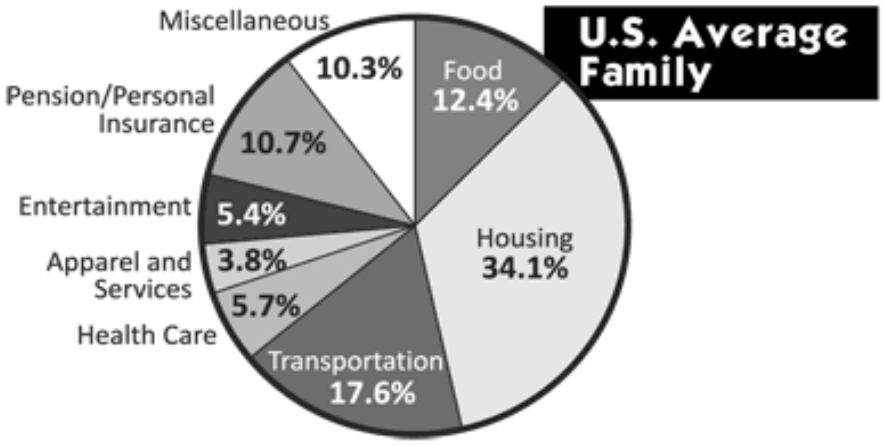
Table 11: Food Insecurity in the Pioneer Valley

	Hampden	Hampshire	Franklin	Region	Mass.
Food insecurity rate %	14.3%	10.2%	11.5%	12.0%	11.2%
Food insecurity population	66,880	15,780	8,240	90,900	727,530
Food insecurity rate above SNAP poverty threshold (%)	32%	50%	38%	40.0%	45%
Child food insecurity rate %	24.3%	16.3%	20.2%	20.3%	18.1%
Child food insecurity pop.	27,530	4,470	2,910	34,910	262,650
Child income-eligible for federal nutrition program (%)	70%	47%	59%	58.7%	53%

Source: Feeding America 2011

Households that are "food insecure" generally have less money to spend on food. According to a study conducted in 2007 by North Dakota State University, the average U.S. household spends 12.4% of its income on food and 34% on housing (see Figure 1 below).

Figure1: Average Proportions of U.S. Household Expenditures (2010)



Source: USDA

In contrast, low income families eligible for the USDA's Supplemental Nutrition Assistance Program (SNAP, formerly known as Food Stamps) spend 24% of their household income on food, twice what a non-poor family spends, and 43% on housing—a difference of 46% versus 67% for these two basic necessities of life.

The "Food Hardship Rate" is a measure developed by the Food Research and Action Center indicating whether households have experienced moments during the past year when they did not have enough money to buy food that they needed. While less frequently used than "food insecurity," this measure helps increase the understanding of the longer term consequences of hunger, poverty and lack of access to food.

The Springfield Metropolitan Statistical Area (MSA), which includes all of Hampden, Hampshire and Franklin Counties, is ranked 37th out of the 100 largest MSAs in the U.S. for "Food Hardship Rate." In contrast, the Commonwealth of Massachusetts has one of the nation's lower food hardship rates, ranking 45 out of the 50 states.

The term "Food Desert" is increasingly used to describe conditions in which nutritious and healthy food is not regularly accessible or available ("low access" according to the USDA) to a substantial portion of a community's residents. Research by the U.S. Department of Agriculture documents that a person's access to affordable and healthy foods is substantially lower in low-income and racial and ethnic minority neighborhoods, as well as rural areas where people may live more than 10 miles from the nearest source of healthy food and not have the means to travel to the store (http://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.aspx#). In addition, health disparities linked to diet-related chronic disease and obesity rates are associated with racial, ethnic and income parameters, disproportionately impacting lower-income and racial minority populations (Story, Kaphingst, et. al. 2008). Research on the cause of these health outcomes continues to help understand the possible causal links between low access to healthy foods and higher rates of diet-related disease in: low-income communities.

Low access to grocery stores that have a good selection of produce, fish and meats (a "full line" grocery store) decreases opportunities for consumers to purchase healthy or nutritious foods. Major supermarket chains continue to close their stores in urban and lower-income areas at rapid rates, and instead building "big box" super stores in suburban or urban edge locations. This practice is historically referred to as "supermarket redlining." Increasingly, low-income residents with limited access to automobiles or adequate public transit options struggle to access major supermarkets. Without consistent supermarket access, many low-income residents pay higher prices for lower-quality produce at convenience stores, or forego the purchase of produce and other healthy foods altogether. This situation is sometimes known as the "grocery gap."

According to the U.S. Department of Agriculture and the Centers for Disease Control, 2.2% of people living in the urban areas of Hampden County and 2.7% of people in urban Hampshire County do not have access to a car and live more than 1 mile from the nearest full-line supermarket. PVPC's 2012 analysis of rural areas found that 24,627 residents in rural areas live more than 10 miles from a full-line grocery store.

Compounding the lack of accessible nutritious and healthy foods is the high quantity of *unhealthy* food choices that are available, especially low-priced fast food. In the United States today, almost half of American food expenditures are spent on "eating out," and roughly one-fourth of all meals eaten outside the home are fast-food meals. Lower-income neighborhoods with limited access to full line grocery stores often have substantially higher concentration of fast food establishments, according to Story, Kaphingst, et. al. (2008). These researchers find that Americans have the "lowest cost food supply in the world" due to subsidies for high-caloric sweeteners. As a result, the typical American diet derives almost 40% of its energy output from high-processed sugars and fats. Refined foods with added fats and sugars are inexpensive and energy-dense, and thus appeal to low-income consumers. However, energy-dense diets have a low satiating power, potentially resulting in passive overeating and subsequent increased weight gain. These energy-dense foods are generally nutrient-poor, and prolonged consumption is correlated with high rates of adverse health outcomes (Drewnowski & Darmon 2005). Poor nutrition can also lead to poor school performance, the inability to hold down a job, and increased medical costs.

Urban neighborhoods that lack healthy food options and are swamped with large numbers of outlets for unhealthy food are increasingly being referred to as "food swamps." While research is not conclusive, some public health advocates now believe that the combined impacts of food deserts and food swamps is playing a significant role in the increasing rates of obesity and obesity-related diseases such as diabetes, hypertension, and heart disease are rising throughout the country.

2.4 THE REGIONAL FOOD SYSTEM

Food plays a major role in the life of every region and is part of a highly integrated system.

The regional food system can be modeled, as seen at right, as a cycle with five major components: production; processing and distribution; retail sales and access; preparation and consumption; and waste. At each stage of the cycle, there are many inputs and outflows, both from within the region and outside it. Those with the greatest bearing on the region and its economy are summarized below.

Production	The use of natural and human resources to grow plants (i.e., "produce") and raise animals for human consumption. Production may take place in rural, suburban or urban settings. Includes fishing, hunting, foraging and trapping in natural (non-farm) environments.
Processing and Distribution	The transformation of raw food to a product that is ready for consumption. Includes processes such as cooking, baking, fermentation, slaughter, preserving, packaging and others. Sometimes known as the "value-added" part of the food system, as it increases the value of food for retail sale. Also includes direct or indirect distribution and transportation of processed and unprocessed foods to wholesalers and retailers.
Retail Sales, Access, Hunger Relief	The retail sale of food products by stores, markets, restaurants, and other retail outlets to consumers. Access, which depends on consumers' proximity and physical access to points of sale, as well as financial issues such as the cost and availability of transportation, and the price of food itself. Hunger relief typically involves non-retail emergency nutrition and distributions.
Preparation and Consumption	The preparation of food by consumers, restaurants, retail and institutional food providers (such as schools) for consumption.
Waste Reuse and Recovery	Disposal, recovery and/or reuse of unconsumed food. Involves landfill disposal, donations to hunger relief, composting, recycling, and reuse.

Sections 2.3.1 through 2.3.5 describe how these five general components of the food system exist and function in the Pioneer Valley.

2.4.1 Food Production

The Valley's farms produce 13% of Massachusetts' total agricultural products by value (based on market value of agricultural products sold in 2007, a total of $64,352,000). The Pioneer Valley's major food crops and values are shown below.

Table 12: Pioneer Valley Agricultural Product Sales 2007

Item	Amount
Vegetables	$16,185,000
Dairy	$8,955,000
Fruits	$3,597,000
Meats	$2,640,000
Grains and beans	$779,000
TOTAL:	**$32,156,000.00**

Source: 2007 Economic Census

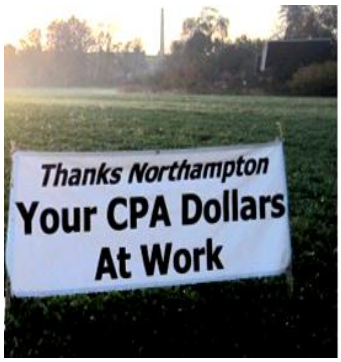
This food is produced on approximately 1,960 farms in the Pioneer Valley, which is one-fourth of all farms in the Commonwealth. The Pioneer Valley contains about 169,000 acres of farmland, which is one-third of the statewide total agricultural land.

A recent study estimated that current Pioneer Valley production could provide about 16% of the food consumed in the region; another study estimates that the region could produce 5.6% of all of Massachusetts' total food need (CISA 2010).

As of 2007, the Pioneer Valley's dairy farms produced about 15% of the dairy products consumed and processed in the region. From 2003 to 2009, nearly one-quarter of the Commonwealth's dairy farms ceased production, reducing the total number of dairy farms in Massachusetts from 180 to 77. However, the number of dairy farms in the Pioneer Valley remained steady.

GROW FOOD NORTHAMPTON

Grow Food Northampton is dedicated to promoting food security by advancing sustainable agriculture in Northampton, Massachusetts. Grow Food Northampton coordinates the use of over 120 acres of heritage farmland along the Mill River in Florence. The goal of the site is to house a variety of farming enterprises striving to strengthen Northampton's local agricultural economy and collective food security. Grow Food Northampton is in the process of developing a comprehensive plan for the land, including a CSA farm share and plans for a community garden. Grow Food Northampton has partner's with the Tuesday Market to raise $12,000 to continue the FoodStampsX2 program, double the value of any customer's food stamp purchase at Tuesday Market up to $10. Grow Food Northampton supports Fresh Wednesdays, an initiative of the Healthy Foods in Northampton Schools Coalition to identify the food, nutrition, and local agriculture topics currently discussed in Northampton's classrooms. Grow Food Northampton was a key player in the development of the Feed Northampton Food Security Plan, and also supports CISA's discounted CSA program for eligible seniors and the Forever Farmland Trust.



For more information visit: www.growfoodnorthampton.com

2.4.2 Food Processing and Distribution

Food processing and distribution are both necessary to make the food available to the consumer. This section describes these two related processes as they occur in the Pioneer Valley.

2.4.2a Food Processing

Most locally produced food requires some processing before it is ready for distribution and retail sale to consumers. Common processing operations include cooking, baking, fermentation, preservation and other preparation. Processing allows fruits and vegetables to be transformed into value-added products, including carrot sticks, jams, and salsas, or products that can be sold all year, such as tomato sauce or frozen berries. Processing is

necessary to pasteurize and bottle milk or to turn it into cheese, yogurt or other dairy products. Meat must be slaughtered, cut, and cured. Grains are typically dried, cleaned and milled. Other foods, such as seasonable produce, can be sold at farmers markets with virtually no processing at all, other than the farmer harvesting, washing and packing the product for transport.

Therefore, food processing involves a wide range of additional costs, materials and labor to prepare food products for distribution. Processing enhances the value of locally grown ingredients and allows local producers to reach additional markets.

Sales receipts from food manufacturing totaled $2.13 million in Franklin, Hampshire, and Hampden Counties in 2009.[6] Table 16 below shows the types and number of food manufacturing facilities in the Pioneer Valley. In general, Western Massachusetts (including Berkshire County) today lacks sufficient food processing facilities to meet demand for local consumption and exports. This shortcoming limits the amount and variety of processed foods created from local ingredients available in local markets.

Table 12: Food and Beverage Manufacturing in the Pioneer Valley

Food and Beverage Manufacturing Establishments	Hampshire	Hampden	Franklin	Subtotals
Animal food manufacturing		1	1	2
Bakeries	8	19	3	30
Beverages manufacturing	2		2	4
Condiments and other prepared foods	1	2	2	5
Confectionery manufacturing	1	1	2	4
Dairy Manufacturing		3	1	4
Frozen specialty food manufacturing		3		3
Fruit and vegetable canning			1	1
Meat Processing / Slaughtering		5		5
Perishable prepared food manufacturing			1	1
Soybean processing			1	1
All other miscellaneous food manufacturing	1	1		2
TOTALS	**13**	**35**	**14**	**62**

Source: 2007 Economic Census

Farms, businesses, and others are actively working to enhance and create infrastructure for food processing using local ingredients. Processing facilities designed to source locally grown ingredients may have different needs than those that source their inputs from around the globe. Increased cold storage capacity, for example, may be required to allow sales all year.[7]

[6] *US Census Bureau, http://censtats.census.gov/cgi-bin/nonemployer/nondetl.pl*

[7] *See CISA's profile of Real Pickles for more information on the specific needs of processors committed to local sourcing.*

On-farm processing is a particularly attractive option, because it builds in a preference for locally grown ingredients and returns a greater share of the consumer dollar to the grower. On the other hand, adding a processing business may require farmers to acquire new skills and to stretch their management capacity across several different enterprises. On-farm processing is a good fit for some farms but not others. Regional processing facilities providing small-batch processing and retain source-identification of the product are an important additional option.

The following table describes processing in the Pioneer Valley for various types of food.

Fruit and Vegetable Produce Processing	Most fruits and vegetables grown in the region are sold fresh, though there is significant acreage of potatoes grown for potato chips. Some farmers and aggregators do basic processing, such as peeling squash or cutting carrot sticks or zucchini coins, to make their products more appealing to institutional buyers such as schools and hospitals. Some farms and small businesses make other value-added products, such as jams, salsa, pickles, and relishes. Sufficient refrigerated storage for fruits and vegetables is currently lacking in the region.
Dairy Processing	Some processing is necessary to bring any dairy product to market. The most basic dairy product, fluid milk, must be pasteurized and bottled. The cost of these processes has made it more difficult for local dairy farms to take advantage of increasing demand for local food. Historically, dairy farmers in the region have sold their milk in bulk, but rising costs of production and recent fluctuations in market prices have led many dairy farmers to pursue options for retaining a greater share of the consumer milk dollar. An increasing number of dairy farms in the region now do on-farm processing, including bottling and production of cheese, yogurt and other products. Additional regional needs include a processing plant for small-batch processing that can be shared by several businesses, shared cheese-making or aging facilities, and new business "incubator" facilities with equipment and expertise suited to dairy products.
Slaughter and Meat Processing	Western Massachusetts has one USDA-inspected meat processing plant. There are three additional plants within reasonable driving distances in Vermont, New York, and central Massachusetts. One plant also processes poultry, and growers in the region can also use one of the Massachusetts Department of Agriculture's Mobile Poultry Processing Units. Although these plants offer more options than are generally available in many other regions of the country, some growers are experiencing dissatisfaction with customer service, scheduling, animal handling, and cutting services at some plants. In addition, plant operators note that business can be slow in seasons other than fall and early winter and that financial margins are very tight. Some options for improvement suggested by local producers include: creation of meat-cutting and wrapping (not slaughter) facilities; support for the creation of on-farm slaughter facilities, particularly for poultry; improved regulatory coordination

	and clarity; technical assistance and financing designed to improve services at both custom8 and USDA-inspected slaughterhouses; and training for farmers focused on year-round finishing of animals to alleviate crowded fall slaughterhouse schedules.
Grain Processing	Growth in the production of small grains in Massachusetts has led to a need for processing facilities. Some equipment, including that needed for small grain aeration, cleaning, hulling, and milling, is now available through shared-use or fee-for-service arrangements. Grains are a relatively low-value crop and farmland in the region is expensive, but growers and processors, such as bakeries and malters, are demonstrating ways to make grain production work as part of a crop rotation schedule and in response to market interest. Advocates note that consumer education related to the benefits and use of whole grains and the price of locally-grown grain is needed. As the volume of grain produced increases, additional processing options will be required.

2.4.2b Food Distribution

Food distribution is the network of transportation companies and facilities that link farms and markets. It is closely tied to food processing because it involves bringing food from the farm to the many places where it may be purchased, processed, cooked, sold, given away or eaten.

In Massachusetts, direct sales account for 8.6 % of farm products sold to consumers, typically via farmers' markets, farm stands and community-supported agriculture (CSA) arrangements. Although the value of direct sales is relatively high in Massachusetts (second only to Connecticut), consumers still purchase the vast majority of their food is from restaurants, major supermarkets and national chain stores. In some cases, farmers deliver to these outlets, but most of the time a distributor aggregates products, processes orders, delivers the product, and handles the invoices.

[8] *Custom facilities may be used only by the end-user of the product; in other words, meat from a custom facility may not be resold. Improved services at custom facilities may result in reduced bottlenecks at USDA-inspected facilities if people growing meat for their own use switch to a custom slaughterhouse.*

GREENFIELD FOOD PROCESSING CENTER

Many local food businesses have used the Western Massachusetts Food Processing Center (FPC), a business incubator and shared-use commercial kitchen operated since 2001 by the Franklin County Community Development Corporation. In some cases, the FPC provides co-packing services, allowing farmers to supply ingredients and obtain a finished product for sale without providing the labor or recipe development.

The Western Mass. Food Processing Center in Greenfield.

Products made at the Processing Center include pickles, coleslaws, sauces and other tasty items.

The FPC has also begun freezing locally grown vegetables for sale to schools. Many farms are building or improving cold storage facilities that allow them to sell product throughout the winter. Interest in additional shared-use kitchen facilities is high, but the FPC experience demonstrates both the value and the challenge of these facilities; potential operators should carefully assess demand in order to create a business model that can succeed. *(http://www.fccdc.org/fpcabout)*

The Pioneer Valley, like other regions in the Northeast, has a well-developed food distribution system. Foods of wide varieties and origins are almost always in stock at retail outlets, from major supermarkets, to institutional providers, to neighborhood convenience stores. However, this distribution system has developed over time primarily as part of a global, "season-less" marketplace. As such, it is not always fully responsive to local demands and considerations. Incorporating more local food into the system may requires some modifications to accommodate and provide optimal access for local farmers, processors and buyers to better serve the growing regional demand for locally produced food.

JOE CJAKOWSKI'S FARM, HADLEY

The Czajkowski Farm operates on 300 acres, 100 acres of which are certified organic. This third generation farm is operated by Joseph Czajkowski, who says of his work, "we love what we do." The Czajkowski Farm sold 27 different items to schools in 2010, and is accustomed to meeting the needs of school buyers. Joe consolidates orders to make it easy for the school, meaning fewer gaps in orders. The farm is state licensed and insured to sell to institutions. Cjakowski employs another approach to processing, as he offers bulk purchase of fresh produce that he either grows or acquires from nearby farms. (www.cisa.org)

*Joe Cjakowsk*i

SPRINGFIELD MASON SQUARE FOOD JUSTICE INITIATIVE

The Mason Square Food Justice Initiative -- a coalition of organizations, residents and activists that is part of the Mason Square Health Task Force -- has advocated for a full-line grocery store to come to Mason Square for several years. Coalition members have joined with economic development leaders in the community and City Planners to move the effort forward.

Youth from Gardening the Community in their fresh fruits and vegetables costume at the Concerned Citizens of Mason Square's Farmers' Market on the day of the Cultural Harvest Festival, October 2011. This marked the kick off of the JUST FOOD campaign. (http://www.flickr.com/photos/masonsquarehealthtaskforce/

2.4.3 Healthy Food Availability Case Study: Holyoke

The issue of food availability was examined locally in a case study in Holyoke, Massachusetts (Ramsey 2010) of how the health and stability of a community may be affected by the distribution of six categories of food retail stores. This study took into account social, race and class considerations, as well as the spatial mismatch of preferred food stores, mobility challenges for economically disadvantaged residents, and the role of small urban food stores.

The key findings of the Holyoke study relevant to this strategic plan are:

- Food store availability does not necessarily mean that healthy foods are accessible.
- There are real and perceived barriers to accessing healthy food. Cost, convenience and quality are constantly weighed in customers' minds.
- Food is a "push factor" from downtown; that is, the lack of food choices in downtown tends to push people outside the downtown core.

- Smaller food stores in the urban core neighborhoods alone are not sufficient to support a lifestyle of healthy eating.
- The lowest quality and poorest selection of produce was found in urban markets.
- The locations of large-scale discount grocery stores and supermarkets are not conducive to walking.
- Urban food stores serve an important function in neighborhood social stability, even though they are not generally stocking healthy foods.
- A diverse mixture of food store types (i.e., convenience stores, smaller markets and large-scale supermarkets) is beneficial.

Ramsey compared prices of typical healthy foods at different types of stores in Holyoke. The general findings were that healthy foods become more expensive the closer they are to the consumer's neighborhood – if they are available at all.

Table 15: Food Availability and Pricing in Holyoke, Massachusetts 2010

	Unit	Ave. Price in Holyoke Area	Super-markets	Discount Grocery Stores	Urban Markets	Neighbor-hood Food Stores	Convenience Stores
# Outlets surveyed:		34	4	2	4	11	12
Produce							
Apples	lb	$1.46	$1.46	$1.44	$1.24	$1.60	x
Bananas	lb	$0.99	$0.74	$0.83	$0.99	$1.29	$0.89
Carrots	lb	$1.70	$1.82	$2.09	$1.07	$1.79	x
Lettuce (iceburg)	bunch	$1.66	$1.82	$1.60	$1.34	$1.74	x
Limes	each	$0.57	$0.62	$0.55	$0.90	$0.51	x
Onions	lb	$1.27	$1.31	$0.78	$1.31	$1.33	x
Oranges	lb	$0.92	$0.95	$0.76	$0.83	$1.03	x
Potato/sw potato	lb	$1.33	$0.99	$1.19	$0.79	$1.61	x
Tomatos	lb	$2.02	$1.96	$3.15	$1.24	$2.42	x
Groceries							
1% milk	gal	$3.73	$3.99	$3.14	$3.52	$3.71	$3.88
2% milk	gal	$3.80	$4.19	$3.14	$3.52	$3.64	$4.09
Beans	can	$1.34	$1.27	$0.99	$1.39	$1.21	$1.50
Ched. cheese	1 lb	$4.78	$4.74	$3.97	$5.99	$4.73	$4.78
Chicken	1lb	$2.10	$2.26	$1.57	$1.89	$1.74	$2.99
Dried lentils	lb	$1.20	$0.85	$1.00	$1.36	$0.99	$1.39
Eggs	dozen	$2.14	$2.46	$1.84	$1.59	$2.07	$2.39
Pasta	box	$1.61	$0.92	$1.49	$1.12	$1.66	$2.06
Peanut butter	8 oz	$2.48	$2.19	$1.72	$2.30	$2.19	$3.22
Skim milk	gal	$3.84	$3.99	$3.14	$3.29	$3.99	$4.06
Whole milk	gal	$3.83	$3.99	$3.14	$3.52	$3.71	$4.15
WW bread	loaf	$2.09	$2.46	$2.14	$2.38	$1.56	$2.11
All		**$44.83**	**$44.95**	**$39.65**	**$41.57**	**$44.53**	
Produce		**$11.91**	**$11.66**	**$12.37**	**$9.71**	**$13.33**	
Groceries		**$32.92**	**$33.29**	**$27.28**	**$31.87**	**$31.20**	**$36.62**

Source: Ramsey 2010 ("x": product not available or price information not available)

2.4.4 Food Preparation and Consumption

This sector of the regional food system involves the preparation of food products to be eaten. In simple terms, it is what happens with food after it is purchased. This sector, therefore, involves a host of complex issues, including cultural preferences and practices related to food, individual health and dietary needs, social and ethnic customs and more.

Healthy eating, therefore, is an important part of the regional food system.

More than 70% of organizations interviewed as part of the qualitative data analysis for this plan reported they do provide or support healthy food preparation and consumption education. These efforts include community-cooking classes, healthy food purchasing education in schools and other venues, and menu-literacy trainings. In addition, 9.5% of organizations interviewed plan or wish to be involved in these efforts in the future, demonstrating an opportunity for continued growth and development of healthy food consumption and preparation education. Programs and policy change efforts related to healthy food consumption and preparation education in the Pioneer Valley represent both regional food-system assets and continued opportunities for improvement.

Community Involved in Sustaining Agriculture (CISA)

Formed in 1993, CISA strives to strengthen Pioneer Valley farms and communities, creating and running programs that link farmers, community members, and markets. CISA is home to the longest running "buy Local" agricultural program in the country "Be a *Local Hero, Buy Locally Grown"* ®which brings together over 229 farms, 51 restaurants, 31 grocery stores, 6 landscape and garden centers, 15 specialty producers, and 23 institutions to increase the awareness and sale of locally grown farm products. CISA has been providing an affordable farm share to low-income seniors since 2004, and provides training and support to farm businesses

In contrast, fewer than half of the organizations interviewed are addressing the effects of widespread advertising of highly processed and high-sugar content foods (*Table 4.2-7*). Pioneer Valley residents, particularly youth, are surrounded by numerous advertisements for highly processed food. These ads typically do not provide information about where the food comes from, its ingredients, and how its regular consumption may affect personal and public health. The lack of a comprehensive effort to address food and its relationship to health in advertising represents a gap in the development of the Pioneer Valley food system.

One good example of how food advertising can provide this type of health information is the NuVal program by Big Y Supermarkets. The program provides shoppers with a score for many of the foods it sells that is based on an independent rating between 1 and 100 that suggests the relative "healthiness" of the product created by estimating the ratio of its nutritional value to sugars, fats and other ingredients that are less healthy in large quantities. For example, broccoli earns a NuVal score of 100, while cashews are rated a 25.

2.4.5 Food Waste, Recovery and Re-use

In the U.S., we waste a lot of food. The vast majority of food waste in our country is not recycled or recovered. Waste generated during the processing and preparation of food, as well as uneaten food, constitute a large portion of the solid waste stream in many municipalities—from 10% to 40%, depending on the community. Sources include food manufacturers, homes, restaurants, cafes, grocery stores, and cafeterias at institutions like schools and care facilities. In addition, a large proportion of discarded food is edible. Simply throwing it away not only deprives hungry people from eating it, but is highly inefficient because the energy that was expended to grow, deliver and prepare the food is also wasted.

Today, most food waste is dumped into landfills or burned in incinerators along with other garbage. Yet nearly all food waste is organic. It originates from plant or animal sources and is therefore compostable, able to be broken down by other living organisms and transformed into usable products for gardening and farming. The absence of food composting throughout the country is estimated to increase landfill use by up to 15%. It also deprives farmers and gardeners of valuable, low-cost fertilizers and soil enrichment materials (Pothukuchi & Kaufman 2000).

2.4.5a Food Waste in the Region

Organic waste management is becoming a critical issue in the Pioneer Valley, as several landfills are approaching their capacities and are likely to close in the near future. These landfills serve multiple municipalities, so their closure will affect the region's food system. Waste food from households, restaurants, schools, and other large-scale food providers makes up a significant portion of solid waste in the region.

To help address this situation, the Central Pioneer Valley Organic Waste Management Working Group produced an organic waste reduction feasibility study in 2010 for municipalities in Hampshire County.

Table 16: Food Waste in Hampshire County

	Tons/Day
Food Waste Generated (all sources)	51
Food Waste Recoverable (most non-residential sources)	36
Current Food Waste Composting Capacity	15
Needed Food Waste Composting Capacity	**21**

Source: Constructing a Regional Waste Management Program for the Central Pioneer Valley. PVPC, December 2010

As shown above, the study estimates that the Central Pioneer Valley region (Hampshire County) produces more than 51 tons of organic food waste each day (from residential and non-residential sources), and that of this, nearly 36 tons per day (70%) are recoverable. The study estimates that the current composting capacity of existing facilities in the region is 15 tons per day. Therefore, there are 21 tons per day of organic food waste materials available to support new composting facilities in the region. (The study assumes most residential food waste is more efficiently handled through at-home composting, and so residential sources are not included.)

> *"I am convinced that every community needs a small composting operation. It is so critical. We are transforming the waste of a community into the fertile soil that we need to grow food."*
>
> -- Central Pioneer Valley Organic Waste Management Working Group participant

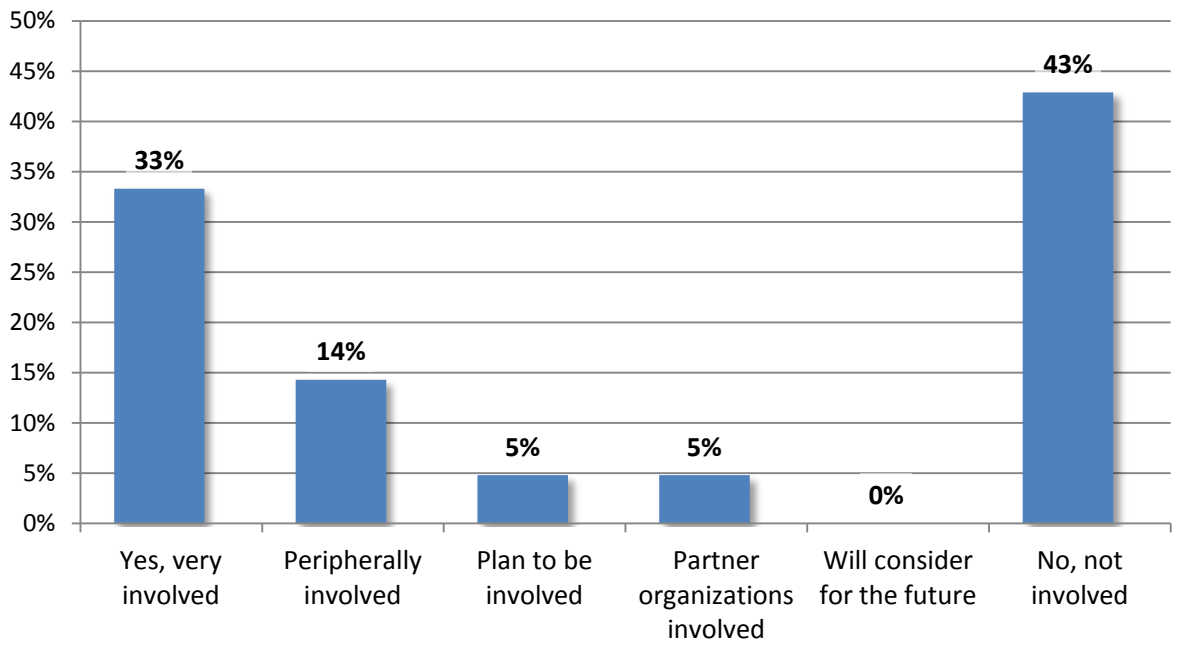
This study identified high food waste generation areas (more than .5 tons per day, or 182 tons per year) in Amherst, Belchertown, Hadley, Northampton, Easthampton and South Hadley. Much of this waste is generated at buildings along major road corridors, including Routes 9, 10, and 116. This would allow efficient routing of collection services.

This study demonstrated the need for, and feasibility of, a comprehensive food waste composting program. Additional research on food waste generation and geographic areas of relatively high waste generation in Hampden and Franklin Counties is needed to proceed with this effort.

Many of the organizations interviewed had not previously considered food waste as integral to the food system. Importantly, while a majority of organizations expressed support of small-scale or household composting programs, organizations interviewed were less interested in addressing large-scale municipal or regional composting programs. In addition, more than 50% of organizations interviewed are involved in networking, making connections and other capacity-building activities regarding the re-use of edible food (figure below). Notably, a question specifically related to food gleaning (the collection of crops from fields that have been previously harvested and would otherwise be wasted) was absent from the survey but discussed with enthusiasm by several interviewees.

In addition, there are many statewide regulations that affect large composting facilities. These are discussed in the 2010 report available here: www.pvpc.org/resources/landuse/organic-report-final.pdf

Figure 3: Organizational Involvement in Networking/Capacity-Building/Policy Development Related to Food Waste Disposal



Source: Thompson 2011, n=22

2.4.5b Regional Composting

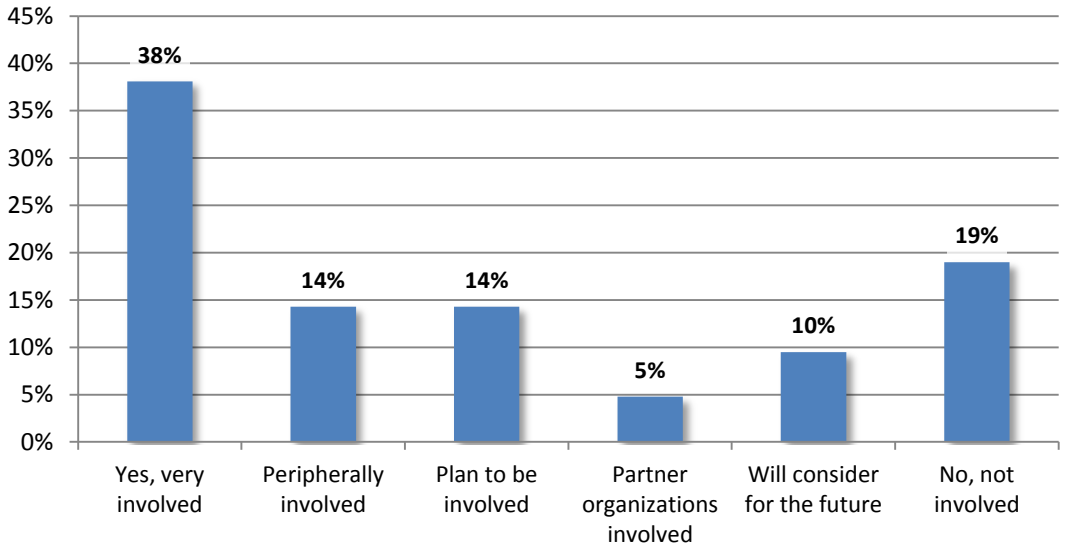
Composting of food waste in the Pioneer Valley currently consists of a series of efforts by local farmers who have developed their own composting facilities; haulers who have developed food waste collection routes; commercial waste generators who have begun to separate their organic wastes for collection by the haulers; and the Center for Ecological Technology (CET), a local nonprofit organization that has helped to coordinate a number of these efforts.

Of the organizations interviewed, 50% reported active involvement in composting programs and/or policy efforts (*below)*. An additional 14% of organizations interviewed are not currently involved, but would like to be involved in composting in the future. The organizations that are not currently involved in these efforts, but who plan or want to become involved, represent the core groups that should be targeted with increased comprehensive education in order to support the development of enhanced program and advocacy opportunities on this topic. In addition, almost 10% of organizations interviewed "had not previously considered this option, but will consider it for the future."

> *"Composting is also a good job opportunity. That is a green job right there. And you could do it with a bike, a bike and a trailer - just go around collecting from restaurants, or municipally. But it does have a big education shift. For building owners, it saves them money to have less trash. So there are multiple incentives to composting, and there are some business opportunities there."*
>
> -- Central Pioneer Valley Organic Waste Management Working Group participant

The high rate of organizations that are considering or planning to engage in composting in the future signifies a clear opportunity to promote activities such as improving household or business composting facilities and trainings, as well as advocating for regional or municipal composting facilities and pickup.

Figure 4: Organizational Involvement in Regional Composting Programs



Thompson 2011, n=22

2.4.5c Food Waste Disposal Costs

There are many costs associated with disposing of food waste. Tipping fees are the waste processing fees collected at the gate of waste disposal facilities. They are set based on the cost of processing the wastes, plus fixed costs (e.g. rent or mortgage costs) and profit, less revenues generated by selling the finished product. These fees are also affected by the total quantity of wastes processed at the facility. Tipping fees for composting are generally set based on costs, as well as the revenue that can be generated by selling finished compost.

In successful composting systems, tipping fees for compost are substantially lower than landfill or other alternative waste tipping fees. On average, tipping fees at the Northampton, South Hadley and Granby landfills are $74 per ton. The average tipping fee is expected to rise when the Northampton landfill closes in 2012 or thereafter (Table 35). In contrast, compost tipping fees in the region are about $45 per ton. This $29 per ton difference presents sufficient savings and economic incentive for haulers to add organic waste collection to their services, provided they have a destination for delivery of the material. Haulers can pass on some of this savings to encourage customers to separate organics. Lower tipping fees for organics have the added benefit that they increase the distance that it is economically feasible to transport wastes to the composting facility, allowing more organics to be recovered from the waste stream.

Hauling costs, of course, will vary by generator and are a factor of hauling distance to the facility, as well as route and waste generator characteristics. A hauling route that consists of a few large generators along major roads presents a certain economy of scale.

Table 17: Current Tipping Fees and Potential Composting Savings in the Central Pioneer Valley

	Cost per Ton
Average Landfill Tipping Fee	$74
Average Compost Tipping Fee	$45
Potential Tipping Fee Savings for Source Separated Food Wastes	**$29**

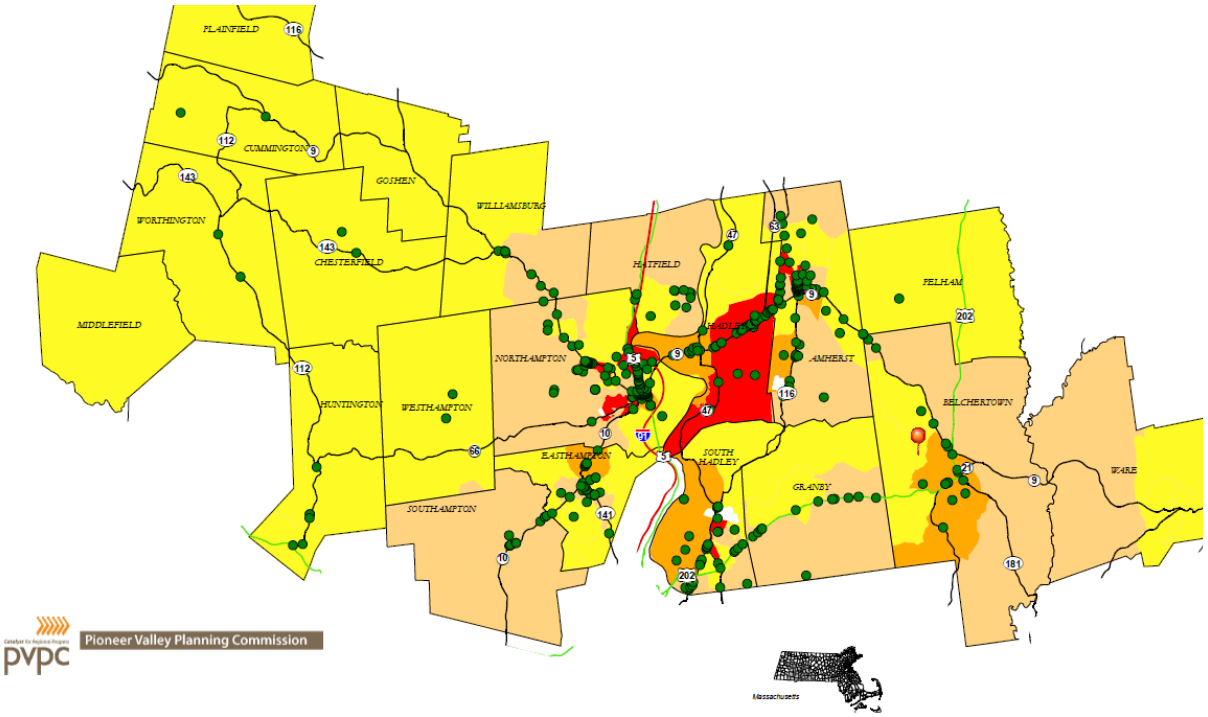
Source: Constructing a Regional Waste Management Program for the Central Pioneer Valley. PVPC, December 2010

The working group's findings suggest that the region can support additional small and medium-scale composting facilities, and that these facilities will be economically viable if they are able to operate with tipping fees of $40 to $45 per ton. In addition, the working group believes that new facilities would lower the costs of waste disposal for both municipalities and the private sector, so the region as a whole could realize cost benefits from new facilities. Further study is still needed to assess the economic feasibility of new composting facilities in the region. Addition information is needed on the following topics:

- Desired composting facility characteristics and technology(ies).
- Collection strategies.
- Feasible hauling routes.
- Waste volumes needed to support a centralized composting facility or facilities for the entire Pioneer Valley.
- Reduced impacts to municipal landfills and wastewater treatment facilities.
- Potential cost savings to municipalities, homeowners, and businesses.
- Potential market for compost products (fertilizers, soil enrichment).
- Potential capital and operating costs of one or more regional composting facilities.
- Assessment of environmental benefits and impacts of one or more regional composting facilities.

CENTRAL PIONEER VALLEY ORGANIC WASTE MANAGEMENT WORKING GROUP

Figure 5: Estimated Collectable Organic Waste with Large Commercial Generators and Compost Facility Locations



The Central Pioneer Valley Organic Waste Management Working Group found that large quantities of waste are generated by commercial sites along major transportation corridors in Hampshire County—especially Route 9. This presents opportunities for more efficient and consolidated waste collection and re-use.

Tons per Day

- 0 tons
- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- > 1 ton
- Commercial and Institutional Generators
- New England Small Farm Institute Compost Site

2.5 POLICY ENVIRONMENT

In response to increasing popular awareness and interest in local food and healthy eating during the 2000s, the food policy environmental is changing rapidly. Some of the most well-known evidence of this is First Lady Michelle Obama's initiative to improve school lunches and access to fresh fruits and vegetables. This effort and many others have been enormously successful, leading to new federal and state policies that focus squarely on serving healthier food in schools, promoting healthy choices, connecting school children to the foods they eat, and supporting local food production. Efforts to address nutrition and food choices in schools are making how we eat an integral part of the national health care debate. At the same time, the policies and regulations to support the growth of local food systems are now, for the first time in contemporary history, advancing.

This section summarizes food-related policies and initiatives that are relevant to the food system of the Pioneer Valley.

2.5.1 Massachusetts State Food Policy Council

The Massachusetts Food Policy Council was established in 2010 to make proposals that support agriculture and local food consumption in Massachusetts, including:

- Increased production, sales and consumption of Massachusetts-grown foods.
- Programs that bring healthy local foods to state residents.
- Protection of land and water resources for sustained local food production.
- Training, retention, and recruiting of farmers.
- Enhanced economic viability of local food production, processing and distribution throughout the state.

The council is composed of appointed state legislators, state agency representatives, and industry representatives. There is also an advisory committee to the council made up of members who represent farmland protection and conservation, farm entrepreneurship and business development, the University of Massachusetts Amherst, nutrition and public health, healthcare interests, anti-hunger advocates and similar entities.

The Food Policy Council is currently developing a framework for a statewide comprehensive strategic food plan. Topics to be addressed by the Food Policy Council and the state food plan include targeted state subsidies; increased state purchasing of local products for school and summer meals and other child and adult care programs; increased institutional purchases of Massachusetts grown foods and other programs to make access to healthy Massachusetts products affordable; increased access to healthy Massachusetts-grown foods in communities with disproportionate burdens of obesity and chronic diseases; increased collaboration and communication between state and federal agencies; innovative public-private partnerships; institutional purchasing agreements; changes to state or federal laws or regulations; changes

in the manner in which state and federal programs are implemented; and new federal, state, local or private investments.

One important issue this body may address are state requirements that result in the purchase of frozen, pre-packaged meals from out-of-state sources for Meals-on-Wheels programs, rather than promoting purchase of food for these programs from local sources.

2.5.2 U.S. Healthy Hunger Free Kids Act of 2010

The Healthy, Hunger-Free Kids Act of 2010 is federal legislation that recently revamped the Child Nutrition Act of 1966. This new legislation committed an additional $4.5 billion to child-nutrition programs over 10 years and implemented sweeping changes to federal child-nutrition programs, including the National School Lunch Program, the School Breakfast Program, the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), and Summer Food Service Program, and the Child and Adult Care Food Program.

In response to media coverage revealing significant flaws in government programs that are responsible for guaranteeing food safety, this legislation renews the USDA's focus on the importance of school wellness policies and directs the USDA to make real reforms to the school lunch and breakfast programs in order to improve food safety and nutrition for millions of children. The law includes provisions to improve training for cafeteria workers and to alert schools more quickly about recalls of contaminated food. It also directs USDA to set new nutrition standards for all food served in schools, from lunchrooms to vending machines. Further, it expands the number of students eligible for free or reduced-price meals; provides financial incentives for schools to adopt the new nutrition standards; authorizes all types of child feeding programs, including farm-to-school programs that encourage schools to buy produce from local farms and establish school gardens; and establishes a greater emphasis for federal funds to be used for implementation, assessment and reporting of results to the public.

The legislation also strengthens existing requirements for local wellness policies, which are required in all school districts and are an important tool for promoting student health and reducing childhood obesity. The act encourages local education agencies to review their local wellness policies and to begin implementing the new requirements right away.

2.5.3 Massachusetts School Nutrition (MGL ch.111 Sec. 222)

In July 2010, Massachusetts joined the ranks of many other states that have recently passed school nutrition and nutrition education laws. The School Nutrition Law ("An Act Relative to School Nutrition" - M.G.L.c.111, s.222) requires the establishment of School Wellness Advisory Committees within school districts and provides for the creation of standards for the operation of these committees. The law directs the Department of Public Health to work with the Massachusetts Department of Elementary and Secondary Education to develop nutritional standards for all foods sold in schools. The resulting standards ban the sale of salty and sugary snacks and high-calorie sodas in public schools, including snacks from vending machines.

The School Nutrition Law also bans the sale of deep fried foods and requires schools to sell fresh fruits and vegetables, to provide food nutrition information, and to buy locally grown food from farms where possible. The law makes it much easier for school districts to buy fresh produce directly from Massachusetts farmers. As long as reasonable business practices are followed and each purchasing contract is below $25,000, local school districts can purchase fruits, vegetables and other foods from Massachusetts farms without going through the normal bidding process. For larger contracts where bidding is required, state purchasing agents are directed to purchase products grown in Massachusetts unless the price is more than 10% more expensive than products grown outside of Massachusetts.

2.5.4 Massachusetts School Wellness Advisory Committees (MGL 222, Ch 111, CMR 215.00)

Under this legislation, each public school district in the Commonwealth is required to have by August 2012 a School Wellness Advisory Committee in place. One committee may serve an entire district. The intent is that the committee will encourage development of a program that actively promotes wellness in schools and to maximize the school district's opportunities for grant awards. These committees are intended to ensure that each public school district has an established group of school staff and concerned community representatives to recommend, review and help implement school district policies addressing school nutrition, nutrition education, physical activity and related issues that affect student health.

2.5.5 Agricultural Land Preservation

Preserving land for current and future food production needs is a policy priority in the Pioneer Valley. Since 1980, the Commonwealth has permanently protected about 65,000 acres of farmland through its Agricultural Preservation Restriction (APR) Program. This is a voluntary program that offers farmers and other owners of "prime" and "state important" agricultural land an alternative to selling it for residential or commercial development. The APR program offers to pay owners the difference between the fair market value and the agricultural value of their farmland in exchange for a permanent deed restriction for agricultural use only.

The Pioneer Valley leads the state in APR protected acreage. Approximately half of Massachusetts' protected land area is located within Franklin, Hampden, and Hampshire Counties. The Town of Hadley, with 2,200 acres in protection, is the state's APR-leader.

Table 18: APR Projects and Protected Lands, 1980-2010

County	Projects	Acres
Franklin	201	14,379
Hampden	47	4,083
Hampshire	162	11,453
Total	**410**	**29,915**

Source: Massachusetts Department of Agriculture

Despite the APR program, much agricultural land in the region has been converted to large-lot single-family housing, as well as commercial strip malls and industrial development, during

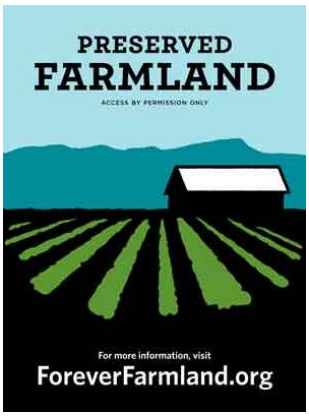
recent decades. This "sprawling" trend continues. Since 1972, about 23,000 acres of cropland and pastureland in Hampden, Hampshire and Franklin Counties have been lost to development (MassGIS Land Use data, 1972-2005), and until recently the number of working farms in the region was in decline. In 1997, American Farmland Trust listed the Connecticut River Valley in Massachusetts and Connecticut as one of the 20 "most threatened agricultural regions in the United States." In recent years, the process of obtaining an APR has generally grown more lengthy and costly, which can discourage interested landowners from participating. State funding is increasingly limited, requiring substantial municipal contributions.

In recent years, state and local governments have collaborated with individual land owners, land trusts and non-profit organizations to preserve key agricultural parcels in the Pioneer Valley. This collaboration has helped achieve about 30,000 acres of APR-protected farmland (of the statewide total) since 1980.

Efforts by organizations such as Community Involved in Sustaining Agriculture (CISA), the New England Small Farm Institute, the Massachusetts Department of Agricultural Resources, and the U.S. Department of Agriculture to provide technical assistance, grants, and other support to existing and beginning farmers have been critical in supporting farmers who can work the land. In addition, the state's Chapter 61A program offers owners of farmland a tax reduction while the land is in agricultural use, which also helps support farm businesses.

THE FOREVER FARMLAND INITIATIVE

The Forever Farmland Initiative seeks to permanently protect farmland in the Pioneer Valley by enacting an Agricultural Preservation Restriction (APR) or an agricultural Conservation Restriction (CR) on existing farmland. The Forever Farmland sign publicly recognizes permanently protected farmland across the Pioneer Valley region, and honors the landowners who have chosen to conserve their farms. The Forever Farmland initiative is a collaborative project with multiple land trust organizations in the Pioneer Valley including the Kestrel Land Trust, Franklin Land Trust, Valley Land Fund, Trust for Public Land, Trustees of Reservations, Mt. Grace Land Conservation Trust, and the Passcommuck Conservation Trust.



For more information visit: www.foreverfarmland.org

2.5.6 Urban Agriculture

In recent years, there have been numerous successful efforts in the region to increase the amount of land in urban areas that produce food. These include community gardens and farm plots; bylaws regulating livestock, such as chickens and goats; and gardens for produce at institutions such as schools, colleges and universities. Notably, the University of Massachusetts Amherst Permaculture Program, which converts unproductive grass lawns on campus into growing areas—many for food that is consumed on campus—a has been featured in numerous national publications and in March 2012 won first-place in the White House Campus Champions of Change Challenge (www.umasspermaculture.com).

Currently there are more than a dozen registered community gardens in the Pioneer Valley, as well as numerous ad-hoc and informal community gardens scattered across the region.

Table 19: Community Gardens in the Pioneer Valley (partial list)

Name of Community Garden	Host Organization	Municipality	County
La Finquita	Nuestras Raices	Holyoke	Hampden
La Piedra	Nuestras Raices	Holyoke	Hampden
El Girasol	Nuestras Raices	Holyoke	Hampden
Cuenta Con Migo	Nuestras Raices	Holyoke	Hampden
Beaudoin Village	Nuestras Raices	Holyoke	Hampden
Cuidad Verde	Nuestras Raices	Holyoke	Hampden
Lyman Terrace	Nuestras Raices	Holyoke	Hampden
Gasoline Alley Green Street Gardens	Gasoline Alley Foundation	Springfield	Hampden
Springfield Community Gardens	(various locations)	Springfield	Hampden
Ted Sparko Memorial Community Garden at Park Hill	Easthampton Conservation Commission	Easthampton	Hampshire
Northampton Community Garden	None	Northampton	Hampshire
South Hadley Community Garden	Grow South Hadley	South Hadley	Hampshire
North Quabbin Community Garden	Tillers of the Community	Orange	Franklin
Pleasant Street Community Garden	Greening Greenfield	Greenfield	Franklin

Source: American Community Garden Association

NUESTRAS RAICES COMMUNITY GARDENS

Nuestras Raíces is a grass-roots organization that promotes economic, human and community development in Holyoke, Massachusetts through projects relating to food, agriculture, and the environment. Nuestras Raíces was founded in 1992 by members of the La Finquita community garden in South Holyoke with the goal of developing a larger scale farm and greenhouse in downtown Holyoke. Nuestras Raíces currently manages eight community gardens and two youth gardens, with plans to continue to expand Holyoke's network of gardens each year. These gardens improve the environment of Holyoke, bringing neighbors of all ages together to transform Holyoke's abandoned urban lots into colorful and active spaces where food and new relationships can grow. *La Finca* is the Nuestras Raices Farm, which serves as a beginning farmer-training project, a new business incubator, an environmental conservation and stewardship project, a youth development initiative, and a cultural development project. Nuestras Raíces also builds cultural pride, promotes youth leadership, addresses environmental justice issues, educates residents about energy efficiency, and advocates for healthy food policy in Holyoke and beyond.



For more information visit: www.nuestras-raices.org

3.0 ANALYSIS

In the Pioneer Valley, there is a high degree of cooperation among anti-hunger organizations and food system resilience advocates. Both groups share an understanding of, and are working together toward, a broad and inclusive vision of food security.

This section presents an analysis and summary of the initiatives and resources in the Pioneer Valley with respect to the two main goals of this food security plan: 1) No one goes hungry, and 2) We grown our own food.

3.1 NO ONE GOES HUNGRY: ADDRESSING HOUSEHOLD FOOD SECURITY

Section 3.1 focuses on three key food security concerns in the Pioneer Valley: 1) hunger among individuals and families and the assistance programs that exist to help combat it; 2) the public health consequences of the food insecurity that exists in the region; and 3) emergency nutrition programs.

3.1.1 Hunger Among Individuals and Families

Every day, thousands of people in the Pioneer Valley go hungry. Thousands more do not know where their next meal will come from. These are the general conditions of being "food insecure." According to the Food Bank of Western Massachusetts, 1 in every 8 residents in the agency's four-county service area (which includes Berkshire County[9]), or about 110,000 people, are in one of these situations—and about 22,000 are children.

Household food insecurity stems from multiple factors, the main one being poverty. In addition to poverty, many low-income urban communities in the U.S. lack adequate accessibility to supermarkets or the means to purchase fresh produce. This is a historic legacy of supermarket redlining, racial discrimination and urban-rural divides.

There are four major federal programs designed to alleviate household hunger and food insecurity. One is the Supplemental Nutrition Assistance Program (SNAP, formerly Food Stamps) program of the U.S. Department of Agriculture. It is one of the most important resources that is available to help low-income residents combat food insecurity. In addition, the USDA Women, Infants and Children (WIC) program provides financial support to mothers raising children. In addition, the Summer Food Service program, provides meals to low-income children when school is not in session.

At the state level, public schools are a principal source of food for low-income children. There are a total of 54 providers of child and adult food programs in the region (including SNAP and

[9] *The Berkshire Regional Planning Commission (BRPC) has also received funding from US HUD to develop and implement a regional sustainability planning process—for details go to www.berkshireplanning.org*

WIC) with 40 of these providers in Hampden County, 8 in Hampshire County and 6 in Franklin County (Massachusetts Department of Elementary and Secondary Education 2011).

As the following table shows, utilization of SNAP benefits has increased dramatically, and much faster than population growth, since 2000. The SNAP program was explicitly designed and structured to be elastic, expanding in tough economic times, and contracting when people get their jobs back and have more money to spend on food. As a result, as the Pioneer Valley, like the rest of the country, has experienced tough economic times, the number of SNAP participants has increased. It is also true that in the past, many families eligible for SNAP benefits did not take advantage of this important resource for a variety of reasons, including stigma about taking advantage of government assistance and lack of awareness of eligibility. As our regional food system gets stronger, and anti-hunger advocates collaborate with local food system supporters, more and more people are learning that they are eligible for SNAP benefits and are taking advantage of this important resource. Local food system advocates are working to make sure that farmer's market have the equipment necessary to allow low-income shoppers to use their SNAP benefits and so SNAP use increases, benefitting not only families that are food insecure, but also local farmers and the local economy, as SNAP benefits replace local currency in stores and at farmer's markets. The number of SNAP participants in the region rose from 37,436 to 137,464 from 2000 to 2011, more than quadrupling in just 11 years while population grew less than 5%. The total dollar amount of benefits disbursed through the SNAP program grew from approximately $25 million in 2000 to $143 million in 2009 (the most recent year for which data is available).

Table 20: Supplemental Nutrition Assistance Program (SNAP) Information 2000-2011

	2000	2001	2002	2003	2004	2005
Participants	**37,436**	**40,748**	**51,165**	**66,304**	**71,246**	**83,195**
Hampden	34,022	36,961	45,149	56,397	59,782	71,538
Hampshire	1,597	1,839	2,422	5,605	6,595	6,324
Franklin	1,817	1,948	3,594	4,302	4,869	5,333
Annual Benefits (1,000s)						
Hampden	$21,727	$22,159	$26,315	$32,934	$39,133	$46,377
Hampshire	$1,798	$1,833	$2,177	$2,725	$3,238	$3,837
Franklin	$1,726	$1,760	$2,090	$2,616	$3,108	$3,684
	2006	**2007**	**2008**	**2009**	**2010**	**2011**
Participants	**85,872**	**93,491**	**110,307**	**117,564**	**133,036**	**137,464**
Hampden	73,711	79,904	93,933	99,285	111,134	114,784
Hampshire	6,714	7,537	9,216	10,112	12,199	12,447
Franklin	5,447	6,050	7,158	8,167	9,703	10,233
Annual Benefits (1,000s)						
Hampden	$53,108	$59,385	$79,964	$123,034	--	--
Hampshire	$4,394	$4,913	$6,616	$10,179	--	--
Franklin	$4,218	$4,717	$6,352	$9,773	--	--

USDA Economic Research Service, SNAP Time-Series Data

The following table shows that the proportion of the population utilizing SNAP benefits has increased significantly since 2000. It has more than doubled in Hampden County, quintupled in Hampshire County, and almost tripled in Franklin County. However, the statewide SNAP utilization rate—the percentage of eligible people who are enrolled in the program—hovers around 65%.

Table 21: SNAP Ratio of Program Participants to Population

	2000	2006	2007
Ratio of Program Participants to Population			
Hampden	7%	16%	17%
Hampshire	1%	4%	5%
Franklin	3%	8%	8%

USDA Economic Research Service, SNAP Time-Series Data

Data for WIC utilization in the region is more limited (available only from 2008 to 2009) but again shows significant utilization growth in the region. The number of redemptions in the entire region rose 10% from 243,047 in 2008 to 269,142 in 2009.

Table 22: WIC (Women, Infants and Children) Data for the Pioneer Valley

	# WIC stores, 2008	# WIC stores, 2009	% Change stores, '08-09	WIC stores/ 1,000 pop, '08	WIC stores/ 1,000 pop, '09	% Change WIC stores/ 1,000 pop, '08-09	WIC redemp-tions/ WIC stores, 2008	WIC redemp-tions/ WIC stores, 2009	% Change WIC re-demp-tion/ WIC stores, '08-09
Hampshire	18	19	6%	0.12	0.12	5%	73,041	64,533	-12%
Hampden	115	95	-17%	0.25	0.20	-18%	98,886	116,677	18%
Franklin	8	7	-13%	0.11	0.10	-12%	71,120	87,932	24%
REGION TOTAL/AVG	141	121	-8%	-	-	-		-	-

USDA Economic Research Service Food Environment Atlas (Retrieved September 2011)

While SNAP payments and WIC coupons are generally accepted at most supermarkets, they are not always accepted at farmers markets, farm stands, and other direct sources of local food.

SNAP OUTREACH AND ENROLLMENT BY FOOD BANK OF WESTERN MASS.

Supplemental Nutrition Assistance Program

Putting Healthy Food Within Reach

The Food Bank of Western Massachusetts is using three core strategies to increase participation in SNAP throughout its service area: providing enrollment and application assistance; increasing SNAP outreach and promotion; and building SNAP advocacy. Changes in federal and state requirements and procedures have resulted in skyrocketing participation that permits income eligible households—including many working families—to use the equivalent of an ATM card to buy food at a supermarket or grocery store. In the four counties of Western Massachusetts, 80,546 families and households received SNAP in November 2010. During a typical year, more than $200 million in federal benefits will be dispensed in the region to help put food on family tables, which helps people be productive on the job, in the classroom, and in their communities. These federal dollars also have a multiplier effect that generates some $420 million in local economic benefits. (http://www.foodbankwma.org/what-we-do/community-outreach/snap/)

Above: Volunteers receive training from Food Bank SNAP Outreach workers.

3.1.2 Public Health Consequences of Hunger and Food Insecurity

Many people in the region are experiencing health problems and are at risk of getting worse because of hunger. Highly processed food generally has less nutritional value relative to fresh produce and meats, but is usually cheaper and more available to hungry people in low-income neighborhoods. The lack of access to healthy food for individuals has significant and broad public health consequences. Therefore, promoting individual and household food security is critical for improving regional public health outcomes, and enhancing the possibilities for economic development and economic growth within the region.

Though perhaps not intuitive, high obesity rates have been shown to be positively correlated to high rates of food insecurity. This is because food insecure households tend to rely on highly processed low-cost foods that are low in nutrition but highly dense in calories. Because highly processed foods are typically the most widely available and inexpensive sources of food in low-income areas, they are over-consumed and cause unhealthy weight gains, while failing to provide adequate nutrients needed for the healthy physiological development and growth of children (Dixon, Omwega, et. al. 2007).

Further, high rates of obesity are directly related to diet-related illnesses, such as diabetes, heart disease and hypertension, which are also disproportionately high among people who do not have access to healthy food. These follow-on health problems have enormous consequences and associated costs. Nationally, mortality rates for individuals with obesity indicators, relative to healthy-weight individuals, display an excess of 112,000 deaths due to cardiovascular disease, over 15,000 additional deaths due to cancer, and over 35,000 excess deaths due to non-cancer and non-cardiovascular disease causes per year (NIH 2008). The obesity epidemic is now estimated to cost the United States about $139 billion per year in direct costs, including prevention, diagnosis, and treatment services, and indirect costs including absenteeism and loss of future earnings due to premature death (Finkelstein, Ruhm, et. al. 2005). Many of these costs are borne by individuals and families with limited or no health care coverage, which further reduces their ability to access healthy food and other needs for healthy living. It is a vicious cycle.

Public health in the Pioneer Valley is mirroring these national trends. An increasing number of residents are experiencing health problems from eating a poor diet. The Massachusetts Department of Public Health reported in 2007 that between 1995 and 2005 the proportion of overweight (up to 20% heavier than a healthy body weight) adults in Western Massachusetts (Hampshire, Hampden, Franklin and Berkshire Counties) increased from 50% to 62% of the population. In Springfield, the proportion of overweight adults increased from 54% to 66% during this period. This means that two-thirds of Springfield adults are in a health-risk category related to being overweight.

By 2005, an estimated 23% of adults in Western Massachusetts were obese (more than 20% over maximum healthy body weight), as compared to 21% statewide (O'Keefe 2007).

Of greatest concern is the high rate of food insecurity and related health problems among children in the region. Children who experience diabetes and heart disease will usually require care and treatment for the rest of their lives, placing a greater burden on the health care system. Childhood onset of obesity-related diseases also has related adverse impacts on individual learning, academic achievement and social development, which in turn have long term consequences for population health and economic development outcomes.

Table 23: Health Outcomes in the Pioneer Valley

	Hampden	Hampshire	Franklin	MA
% Overweight: Male	72.8%	64.5%	67.5%	67.5%
% Overweight: Female	55.4%	42.5%	50.2%	47.8%
% Obese: Male	31.7%	23.0%	17.8%	23.8%
% Obese: Female	26.3%	17.8%	28.8%	19.6%
< 5 servings of fruit or vegetables/day: Male	79.5%	72.1%	81.7%	78.2%
< 5 servings of fruit or vegetables/day: Female	70.0%	60.7%	56.2%	67.4%

Source: O'Keefe 2007

Obesity rates in Western Massachusetts are disproportionately high among racial and ethnic minority populations. In 2005, 21.6% of White residents in Western Massachusetts were obese, compared to 33.7% of Hispanics and 47.7% of Blacks. Increasing rates of obesity and

rising weight concerns in Western Massachusetts are found in similar or more drastic trends across the nation. Weight gain is directly related to higher rates of heart disease, hypertension and diabetes, as well as increased hospital visits and higher mortality rates, particularly among ethnic and racial minority populations (O'Keefe 2007).

Table 24: Obesity by Race and Ethnicity – Western Massachusetts 2005

	Western Massachusetts*	Massachusetts
White Non-Hispanic	21.6%	19.9%
Black Non-Hispanic	47.7%	32.7%
Hispanic	33.7%	27.4%

Source: O'Keefe 2007 (*Hampden, Hampshire, Franklin and Berkshire Counties)

3.1.3 Emergency Nutrition and Food Distribution

Emergency nutrition and food distribution encompass the system of emergency food facilities (i.e., soup kitchens, food pantries, shelters with meals, mobile kitchens, food banks) that provide meals and food to people who are in dire need. This also includes distribution of food to people who may lack the ability to procure or prepare their own food after disasters, such as tornados, flooding or power outages.

The emergency nutrition and food distribution system in the region includes five major, interrelated components, which are shown below.

The Food Bank of Western Massachusetts is the leading emergency nutrition provider and food distributor in the region. In 2011, through its network of 350 local meal sites, food pantries, shelters, and other emergency food sites, The Food Bank distributed7.7 million pounds of food, the equivalent of more than 6 million meals, to 110,000 residents in its four-county service area.

Table 25: Emergency Food Distribution in Western Massachusetts 2011

County	Lbs of Food Distributed	% Total lbs of food
Berkshire - Food Bank	1,269,835	16%
Franklin - Food Bank	1,030,028	13%
Hampden - Food Bank	3,810,256	50%
Hampshire - Food Bank	1,495,480	19%
Total lbs. of food distributed:	**7,774,015**	**100%**

Source: Food Bank of Western Mass. Annual Report 2011

Of note in 2011 was the Food Bank's rapid response to the June 1 tornado in Hampden County. Within 30 days, the Food Bank distributed 60,000 pounds of disaster relief food in Springfield, West Springfield and other hard hit communities to residents affected by the tornado.

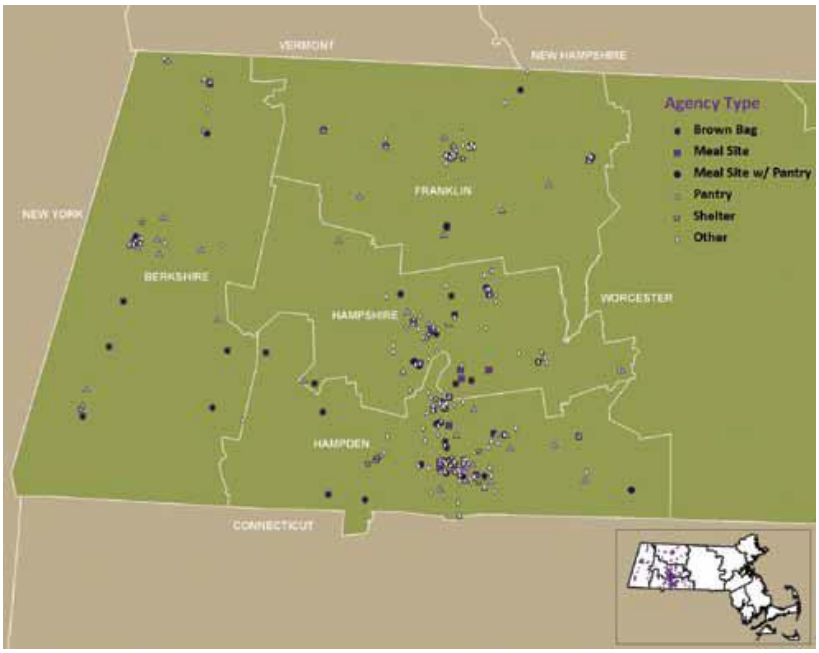
Emergency food distribution occurs through a variety of agencies and outlets. These are summarized and presented below.

Table 26: Emergency Food Distributed by Agency Type

Type of Agency Distributing Food	Lbs. of Food Distributed	% of Total
Food Pantries	5,238,486	68%
Brown Bag	758,366	10%
Meal Sites	678,713	9%
Shelters	219,642	3%
Residential Programs	215,345	3%
Youth Programs, Camps, Childcare	149,514	2%
Other Food Banks	168,417	2%
Drug Rehabilitation	128,202	2%
Internal Pantries	90,633	1%
Adult & Elder Care	19,653	0%
Total lbs. of food distributed	**7,774,015**	**100%**

Food Bank of Western Mass. Annual Report 2011

Figure 6: Pioneer Valley Emergency Food Distribution Locations



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3.2 WE GROW OUR OWN FOOD: A RESILIENT REGIONAL FOOD SYSTEM

This section discusses current and future aspects of resiliency and the regional food system. Section 3.2.1 addresses resiliency in the current economic context, which involves understanding and leveraging the economic benefits of the system, such as the product sales, multiplier (or "spin-off") effects of spending on food, and jobs. Section 3.2.2 addresses the future and how our region's food system can move toward greater future capacity and long term sustainability. On this issue, this plan embraces the broad goal that New England states will produce 50% of the food it consumes by the year 2060 – a vision proposed in The New England Good Food Vision advanced by Food Solutions New England (foodsolutionsne.org). This goal is adopted as a means to increase awareness of the level of effort that would be necessary to significantly increase the proportion of food that is produced locally.

3.2.1 Economic Impacts and Benefits

The Pioneer Valley food system is a significant part of the region's economy. Food-related sales and purchases top $1.3 billion per year, and there are nearly 5,000 people with jobs in the food system (including food manufacturing and forestry sectors). This section describes the economic benefits of the system with estimates of food sales and employment produced by CISA using the IMPLAN (Minnesota IMPLAN Group Inc. 2008) economic model. Therefore, the total share of Massachusetts agricultural industry in the state economy in 2010, which had a total gross state product of $362 billion, was approximately $3.1 billion, measuring the value of agricultural output as statewide sales generated directly from the industry and estimated multiplier effects on other industries impacted (McHale 2011).

3.2.1a Regional Farm Sales

In the agricultural sector alone, the analysis found that the Pioneer Valley farms sell $181 million dollars worth of agricultural products and employ 2,260 people annually. This represents 0.4% of all economic activity in the region.

Table 27: Massachusetts's Farm and Food-production Economy

	Total sales/revenues ($millions)	IMPLAN Multiplier	Value of Secondary Impacts	Total Economic Impact ($millions)
Farm Production	$490	1.5	$245	$735
Farm Related	$63	1.5	$32	$95
Food Processing (using local farm inputs)	$855	$1.7**	$599	$1,453
Forestry and Lumbering[10]	$713	NA	NA	$713
Total	**$2,121**	**NA**	**$876**	**$2,996**

Source: (McHale 2011)

[10] *Forestry sales of $713 million reflect the mid-point of the range provided in the DCR report. Multiplier estimate from Maine report Jesse Gandee, "Economic Impact of the Maine Food System and Farm Vitality Policy Implications," (Report for Joint Standing Committee on Agriculture, Conservation and Forestry Second Regular Session of the 120th Maine Legislature, 2002)..*

Therefore, the combined direct and indirect impact of the Massachusetts farm and food economy is an estimated $3 billion dollars, using the 2008 multiplier data for Massachusetts farm production and the economic multiplier figure (for Maine, the only New England state for which a multiplier was available) for food processing (McHale 2011;Gandee 2002).

3.2.1b Direct Farm Sales

Direct farm sales are those that occur when farmers sell directly to consumers at farm stands, farmers' markets, mobile markets, and through Community Supported Agriculture arrangements. These sales are an important part of the farm economy and the local foods movement in the Pioneer Valley. Statewide, Massachusetts ranks second only to Connecticut in the per-farm value of direct sales to consumers, indicating that direct sales are important to the bottom line of many farms in the Commonwealth. For many consumers interested in sourcing fresh, local food, purchasing direct from the farmer offers an opportunity to know the people who grow the food, to visit the farm, and to enjoy the social and community benefits of farmers' markets or Community Supported Agriculture share pick-ups.

Direct sales have increased in recent years by a variety of measures. The national Census of Agriculture reports that Franklin, Hampshire and Hampden County farms sold $8,945,000 of agricultural products directly to consumers in 2007, double the $4,467,000 reported in 2002. The number of direct sales outlets has also increased dramatically.

In recent years, both the number and type of direct sales outlets has grown, reflecting the benefits that they bring to both farmers and consumers. Since 2007, the number of farmers' markets in the three-county region has grown from 21 (check this number) to 45. Springfield, Northampton, Greenfield and Amherst all have farmers' markets that run all year round.

Many communities and businesses recognize the benefits of a farmers' market, which include not only fresh food but opportunities to draw shoppers to a business district and occasions for civic engagement, entertainment, and education. Starting and supporting a successful farmers' market, however, is not a simple prospect. Markets must attract a diversity of vendors and products in order to draw shoppers, and the volume of sales must be high enough to create an adequate return for each vendor. Market managers' tasks include outreach and promotion, event planning, vendor management, electronic benefit transfer (EBT) tracking, customer service, and much more. New farmers markets will benefit the local food system when they attract new shoppers and make locally grown food available to new communities, but not if they simply divert current farmers' market shoppers to new markets.

The number of Community Supported Agriculture (CSA) farms located in, or selling to, the Pioneer Valley, tripled between 2007 and 2012, from 19 to 58. CSA farms the Pioneer Valley grow vegetables, fruit, meat, grain, and more. (A CSA farm has members that generally pay a lump sum for their "share" of the farm's produce for the growing season.) Shares are available year-round and in a growing variety of delivery locations, sizes, and formats. The number of CSAs accepting SNAP benefits or providing payment plan options has also expanded.

Farm stands are a traditional direct sales outlets. Signs announcing "Native Corn" or "Fresh Asparagus" area seasonal fixtures in the region. Some farm stands, such as Atkins Country Market and Randall's Farm and Greenhouse, have become full-service, year-round grocery stores. Others operate from a temporary table or truck bed during the height of the season. An increasing number now offer additional diversity such as eggs or orchard fruit grown by other farms or value-added products, such as cheese, pickles, ice cream, jams and pies.

In addition to these outlets within the region, many Pioneer Valley farms supply direct outlets in the Boston region. Several Pioneer Valley farms deliver CSA shares to the Boston area and participate at Boston area farmers' markets. Also, Pioneer Valley farms also supply farm stands and CSAs in Eastern Massachusetts.

3.2.1c Food System Employment

Within the agricultural sector, fruit and vegetable farming account for the majority of agriculture related jobs.

Table 28: Agricultural Employment and Output

	Employment		Output	
	Jobs	% of Area	Amount	% of Area
Franklin	921	2.6%	$94,570,399	2.1%
Hampden	512	0.2%	$25,353,574	0.1%
Hampshire	827	1.1%	$61,391,683	0.6%
Total for Region	**2,260**	**0.7%**	**$181,315,660**	**0.4%**

Source: IMPLAN, 2008 analysis by CISA

When the food manufacturing and forestry sectors are added, total food-related economic activity rises to $1.3 billion dollars and 4,954 jobs, which is 2.8% of all economic activity in the region.

Table 29: Agriculture and Food Processing Employment and Output

	Employment		Output	
	Jobs	***% of Area***	***Amount***	***% of Area***
Franklin	1,361	3.9%	$256,500,589	5.7%
Hampden	2,513	1.1%	$957,942,025	2.9%
Hampshire	1,079	1.4%	$109,580,108	1.1%
Total for Region	**4,954**	**1.4%**	**$1,324,022,706**	**2.8%**

Source: IMPLAN, 2008 analysis by CISA

Sales of farm products have an important multiplier effect on the regional economy. The secondary "spin-off" from food-related purchases is estimated to be nearly $3 billion per year for the entire state of Massachusetts.

3.2.2 Local Food System Future Capacity and Long-term Sustainability

Beyond the present-day economic and employment benefits of the local food system described above, it is important to understand how the region's food system may be able to respond to the changes in the economy and environment that are likely to occur in coming years—and for future generations of residents in the region. These likely changes include continued conversion of productive farmland to other uses, increased volatility in energy prices and markets, a transition from fossil fuels to renewable energy, continued population growth, and adaptation to the effects of climate change.

In addressing these questions of future capacity and long-term sustainability, the preparers of this plan have embraced the vision of the New England Food Vision, produced by Food Solutions New England, a food research institute based at the University of New Hampshire in Durham. The vision proceeds from the assumption that: "Given a land base of 6 million acres in agricultural production, and over 6,000 miles of coastline, with 17 million New Englanders to feed, we could provide a large part of our food supply from close to home." (April 2012 – see sidebar on next page)

The vision expresses two goals for the amount of food that can be produced for consumption in New England:

- **At least 50%** of food consumed in New England could be grown within the six-state region by 2060, assuming the continuation of present development, population growth and environmental trends (see sidebar).
- **Up to 80%** of the food consumed in New England could be grown here by 2060 in the event of dire scarcity in food supplies and/or prohibitively high energy costs, and assuming residents adopted diets with significantly less animal protein than today.

This plan adopts the 50% goal of local food production for the Pioneer Valley, based on the general assumption that this is the region's fair share of the overall goal for New England. However, as Section 2.2 presents, the Pioneer Valley may contain significant core food system assets—such as prime farmlands, favorable topography, accessible transportation networks, a large number of existing farms and more—that could enable the region to exceed the 50% goal. Additional research and planning would be necessary to refine this goal.

3.2.3 Resources for Increasing Local Food System Capacity

Advancing toward the aspirational goals expressed above will require that significant additional resources be devoted to local food production. One necessary step is a comprehensive "food shed" study of the region involving an inventory available farmland in the region and an estimate of additional land that would need to be put into production to attain the goals. In addition, substantial additions to food distribution, farming supply, markets and other aspects of the food system would be required.

A food shed study of this type was completed for Franklin County in 2012 by the Conway School of Landscape Design

(http://issuu.com/conwaydesign/docs/franklincounty20120522_hires). This study estimates that to feed the county's expected population of 77,000 residents in 2035, another 7,828 acres of farmland would need to be added to the existing 37,257 acres of farmland, for a total of 45,085 acres of farmland, or about .6 acres of farmland per resident. Applying this ratio to the expected population of 650,000 people in the PVPC service area (Hampden and Hampshire Counties) in 2040 (the nearest year for which U.S. Census projections are readily available), approximately 390,000 acres of farmland would be required. This is significantly greater than the 90,000 acres in the region that are presently in active farming use.

In addition to physical resources, there would need to be a major effort to train new farmers in both agricultural and business practices and production technologies to meet these goals. The Hudson Valley AgriBusiness Development Corporation offers a model for such an effort with its "Incubator Without Walls" program, which focuses on value-added processing and business technical support. (http://www.hvadc.org/what-we-do/our-incubator-without-walls).

THE NEW ENGLAND GOOD FOOD VISION 2060 – NEW ENGLAND FOOD SOLUTIONS

Reproduced and condensed from http://foodsolutionsne.org

How much food could New England really produce?

- New England could produce the bulk of its own vegetables and about half of its fruit. This would require less than 1 million acres: about 500,000 devoted to green, orange, red, and starchy vegetables and 350,000 to fruit—mostly apples, cranberries, blueberries, and grapes.
- New England could once again produce most of its own dairy products, and along with most of its own lamb and beef. This would require limiting per capita dairy consumption to today's level of 1.7 cups a day (which is below the USDA recommendation), and reducing red meat consumption by one-third. This … would occupy about … about 2.5 million (acres) for the dairy herd and 2 million (acres) for beef, lamb, and goats.
- …less than 1 million acres of cropland could be devoted to … grain for direct human consumption and livestock feed, protein crops, or oil crops such as canola, sunflower, or soy…
- New England could produce its own pork, chicken, turkey, and eggs. Many of these animals could be integrated into grazing systems without requiring additional acreage… However, the feed grain requirements of these animals could amount to more than 2 million additional acres, which is far more than New England could supply.
- Restored and thriving regional fisher(ies)… (would produce a greater share of fish products than are available currently).
- Enhanced regional "good food" production (that) promote(s) a more equitable food system, job development, and greater access to healthy food for all New England citizens.

Assumptions:

- Population growth in the six-station New England region from the current 14.5 million to 17 million with settlement in more clustered patterns to preserve farmland.
- Expansion of farms and … the rural economy, from the current 33,000 farms to a maximum of 100,000, with similar increases in food sector employment.
- Widespread adoption of diets that are "nutrient dense" with vegetables and fruits, and sharply reduced in empty calories and red meat.
- Increased production and use of sustainable energy.
- Significant climate warming which will lengthen the growing season, bring wetter conditions, more pests, and more extreme weather events.
- More sustainable approaches to agriculture, such as organic farming, elimination of petroleum-based fertilizers and use of no-till crop planting.
- Farmland expansion constrained to protect forests—at least 70% forest cover.
- Key marine resource restoration efforts to protect ocean and fresh-water fishing stocks.

4.0 STRATEGIES AND IMPLEMENTATION PROJECTS

Sections 4.1 and 4.2 below present 30 strategies developed through the Pioneer Valley Food Security planning process. These strategies have been developed and refined through three major planning activities:

- Qualitative and quantitative assessments of food security issues in the region, as presented in the prior sections.
- Research on best practices in regional food security across the United States to identify solutions that are most likely potential to address the food security needs of our region.
- Consultation with the members of the Pioneer Valley Food Security Advisory Committee, as well as other food organizations, farming advocates, anti-hunger groups, community-based organizations and the general public.

Section 4.3 presents implementation projects to begin advancing these strategies.

4.1 NO ONE GOES HUNGRY: HUNGER RELIEF STRATEGIES

1. Seek Inter-organizational Collaboration
Continue and expand ongoing communication and collaboration between hunger relief organizations, such as the Food Bank of Western Massachusetts, with Buy Local food organizations, such as CISA, via the regional food system network in the Pioneer Valley, PVGrows.
Partners: Food Bank of W. Mass., CISA, PV Grows, PVPC

2. Support Emergency Food Systems Programs
Facilitate wider acceptance of Supplemental Nutrition Assistance (SNAP-formerly food stamps), WIC coupons and other programs at farmers' markets and CSA farms to assist more people in accessing healthy food.
Partners:Hunger relief organizations, state agencies, farmers market organizers

3. Seek Consumer Education
Continue to educate consumers about proper nutrition and food safety through community outreach, education and advocacy. Focus on healthy, local and culturally appropriate foods.
Partners: Hunger relief and food community organizations, local food policy councils

4. Access Information About Where to Buy Healthy Food
Address food access issues by creating "feedability guides" that connect consumers with healthy food retail locations and availability information.
Partners: Local food policy councils

5. Seek New Retail Outlets for Healthy Food
Support, expand and replicate initiatives that increase the number or neighborhood retail outlets selling healthy food, such as the healthy bodega program in Springfield.
Partners: Local food policy councils

6. Increase Neighborhood Access to Fresh Food
Work to bring full-line grocery stores with a full line of fresh produce and meats to neighborhoods that do not have one.
Partners: Community-based organizations, local food policy councils

7. Provide Access to Sources of Healthy Food
Provide free or reduced-fare bus passes to low-income riders for trips to garden plots, farmers' markets and other community food sources.
Partners: Community-based organizations

8. Provide Training and Technical Assistance
Provide ongoing technical assistance and training to community based organizations working to feed hungry people, such as volunteer recruitment/retention, management training, organizational development, strategic planning and fund-raising.
Partners: Hunger relief organizations, Community Foundations, Leadership Pioneer Valley

9. Expand Access to Healthy Food for Low-income Residents
Expand the number of low-income Community Supported Agriculture (CSA) models to increase access to fresh food in low-income areas by improving access for seniors, increasing the use of SNAP for CSA membership payment, and similar efforts.
Partners: Hunger relief organizations and agencies, CISA

10. Provide Zoning and Regulatory Assistance
Work with member municipalities to assess how local zoning and other regulations may help or hinder residents' access to healthy food, and develop solutions to fix problems that are identified. This may include easing restrictions on vegetable gardens and livestock in residential districts, facilitating adoption of right to farm bylaws and similar actions.
Partners: PVPC, local planning officials

11. Support Retail Best Practices for Healthy Food
Support retail policies and practices, such as in-store displays requirements and signage that promote healthy food. Work to implement these at all levels of government and community, such as healthy locally grown snacks at public meetings.
Partners: Municipalities, Local Food Policy Councils, Community-based Organizations

12. Encourage More Local Food Purchases by Schools and Other Institutional Meal Providers
Support, incentivize and facilitate purchases of local food for lunches by schools, as well as elder care facilities, senior meals programs (i.e., Meals on Wheels). Includes developing

contract requirements and incentives to increase private contractor purchases of local foods and services.
Partners: School boards and districts, senior centers, care facilities, CISA, MA Farm to School

13. Assure Food Assistance Benefits are Fully Used
Work to assure that all people eligible for SNAP, WIC and similar program benefits are enrolled in the program.
Partners: Hunger relief organizations, social service agencies

14. Overcome Assumptions and Stereotypes
Work to de-stigmatize poverty in general and the use of hunger assistance benefits. Provide information about the nutritional needs of low-income residents of the region and the public health benefits of a healthy population, especially to growing children.
Partners: PVPC, hunger relief organizations, public officials

4.2 WE GROW OUR OWN FOOD: LOCAL FOOD ECONOMY STRATEGIES

15. Aspire to Produce 50% of Food Consumed in the Region
Collaborate with organizations across New England, throughout the Commonwealth and within the Pioneer Valley to work toward the goal of producing 50% of the food that is consumed in the region.
Partners: CISA, PVPC, Food producers and distributors, MA Food Policy Councils

16. Share Information About Food Production
Create an online electronic platform for food-related data to enable food organizations to share existing data and describe future needs. This service could also provide training and education about food data collection and use, and technical assistance for farm business operators, food distributors and retailers.
Partners: CISA, Food Bank of W. MA,,PVPC

17. Promote Local Food Businesses
Support local policies and regulations that address food insecurity and promote local agriculture, such as "Right-to- Farm" bylaws, local agriculture commissions, and municipal laws to regulate fast food establishments.
Partners: PVPC, CISA, municipalities

18. Protect Prime Agricultural Lands
Continue incentives and programs to keep agricultural land in production. Support regulations that direct new development to urban and suburban infill areas with the existing infrastructure to support it. Use Agricultural Preservation Restrictions (APRs) and other regulatory/ policy means to preserve prime farmland and convert available land that may not currently be used as farmland to agricultural purposes. Work with land owners and land protection organizations to develop new, innovative strategies for protecting agricultural lands. Utilize local funds from Community Preservation Act (CPA) and transfer of development (TDR) rights to leverage and

match state APR funds. Actively outreach to farmers to encourage APR applications. Produce a brochure about the benefits of the APR program.
Partners: Land owners, MA Dept of Agriculture, PVPC, municipalities

19. Connect Farmers with Land Owners
Connect land owners with farmers to facilitate agricultural production. Actively participate in Hampden County pilot project collaboration with the New Entry Sustainable Farming Project and its partners.
Partners: PVPC, MA DAR

20. Encourage Urban Agriculture
Support urban agriculture, including livestock ordinances, GIS mapping of available parcels, and foster partnerships among property owners and businesses to develop and expand community gardens and commercial urban agriculture projects
Partners: Municipalities, PVPC, MA DAR, gardening stores and businesses

21. Increase the Number of School Gardens
Support on-site vegetable gardens at schools, day care facilities, adult care facilities and other similar entities.
Partners: School districts, care facility operators

22. Create Renewable Energy and Efficiency
Support development of on-farm clean and renewable energy sources and systems. Help improve the efficiency of existing energy systems. This includes participation in Massachusetts Clean Energy Center municipal pilot program for community renewable energy development.
Partners: MA Farm Energy Program (MFEP) , PVPC, municipalities

23. Grow Food in All Seasons
Facilitate and expand year-round food production capacity in the region, including hydroponic greenhouses.
Partners: Farmers, DAR, CISA

24. Invest Financial Resources in Local Food Businesses
Provide flexible capital for innovative local farm and food businesses, particularly those to improve food system infrastructure.
Partners: Common Capitol, PV Grows, Financial Institutions

25. Increase Large-scale Composting Opportunities
Develop new and expand existing large-scale composting of food waste generated by retail food stores, businesses, institutions. Support and/or establish waste source separation programs and hauling routes. Help strengthen the composting market with greater incentives (i.e., landfill tipping fees) to divert organic wastes to composting and develop stronger consumer demand for finished compost products.
Partners: PVPC, municipalities, food businesses and institutional meals providers

26. Encourage More Residential Composting
Expand residential composting by encouraging sales of in-home and outdoor bins by municipalities and local businesses. Widely distribute easy-to-understand information about how to compost at home.
Partners: Municipalities, DEP

27. Connect Farmers and Institutional Meals Providers
Help develop and expand the capacity of farmers to sell produce directly to institutional meal providers, such as colleges, universities, schools, hospitals, day-care, senior meals programs and nursing homes
Partners: MA Farm to School, CISA, DAR, AFT

28. Scale Up Local Food Production
Facilitate implementation of recommendations from CISA food system infrastructure report, Scaling Up Local Food. Key steps include facilitating efficient and successful working relationships between meat producers and slaughter, processing and marketing outlet; improving the capacity of dairy processing in the region; establishing a temperature-controlled regionally shared root cellar facility; expanding capacity for local value-added processing, freezing and co-packing; logistical support for ordering; and grain processing.
Partners: CISA, state agencies, municipalities, food businesses, Common Capitol, PV Grows, MA Workforce Alliance

29. Support the Business Needs of Local Food Producers
Provide technical assistance and business development support to local farms and food businesses, including compliance with food safety requirements. This may include enterprise development, marketing and financial management. Initiatives could include creation and staffing of a Valley-focused agricultural business support center, and greater collaboration with new Greenfield Community College's Farm and Food Systems degree and certificate program. A designated municipal point person could serve as liaison between local farmers and these services.
Partners: CISA, financial institutions, municipalities, Common Capitol, PV Grows

30. Create More Jobs Throughout the Local Food System
Work to fill gaps in all sectors of the local food system with local jobs, especially in the food production and waste/compost sectors. Provide education and training to increase the skills and capacities of food system workers through formal programs, such as the GCC Farm and Food Systems degree and certificate programs, as well as apprenticeships and internships at local farms and food businesses.
Partners: Community college academic and training programs, MA Workforce Alliance, Regional employment agencies, CISA

4.3 FOOD SECURITY PLAN IMPLEMENTATION PROJECTS

PROJECT NAME	LEAD ROLE	TIMEFRAME
1. Healthy Food Conformance Analysis Develop a "Best Practices" library for the region of municipal regulations for healthy and local food promotion. Work with at least two communities to undertake reviews of existing municipal zoning, subdivision and other regulations to determine conformance with best practices that support both household and regional food security. Provide a technical assistance program to help at least two communities adopt zoning for food security.	PVPC in collaboration with municipalities	Spring 2014
2. Connecting Farmers with Farmland Establish at least one model "New Entry Sustainable Farmers" initiative by matching land owners with available farm land with farmers who have no land through meetings, GIS mapping and facilitating legal and/or informal agreements.	PVPC in collaboration with MA DAR, New Entry Sustainable Farmers and municipalities, AG commissions, Planning Boards	Spring 2014
3. Assure Comprehensive Use of Supplemental Nutrition Assistance Program (SNAP) Research and promote best practices for facilitating CSA acceptance of SNAP for at least two CSAs. Improve the administration of the free lunch program that children in SNAP households are supposed to be receiving in at least one local school. Work with the Massachusetts Division of Transitional Assistance to publicize recommendations of the USDA Healthy Incentives pilot. Work with at least one grocery store to adopt a key recommendation.	PVPC, MA Div. of Transitional Assistance, Elected officials, Food Bank of W MA, CISA, Schools, and School Boards, grocery store, residents	Spring 2014
4.		

Facilitate Region's Healthy Food Access Initiatives Collaborate with area Mass in Motion coordinators to provide technical assistance to participating small stores for marketing and display of healthy food purchased through planned cooperative food hubs in Holyoke and possibly other municipalities in the region.	Pioneer Valley Planning Commission, Holyoke Food and Fitness Policy Council, Live Well Springfield, Mass in Motion, MA DPH, SPIFFY	February 2014
5. Facilitate schools purchase of healthy and local food Organize a regional workshop on the topic of how local school districts, charter schools, private schools can incorporate healthy food and/or local purchase requirements into procurement of their contracts with commercial food service providers. If possible, address the issue of how to get more food cooked on site. Provide model contract language and best practice examples from other regions.	PVPC, Massachusetts Farm the School initiative, City Fresh, School committees and School staff, PVGrows	December 2014
6. U.S. EPA and Project Bread Massachusetts Food Map Support joint effort of U.S. EPA Region 1 and Project Bread to identify and map food system resources statewide. This project is intended to support strategic investments in anti-hunger initiatives, strengthen farm and food businesses within the Commonwealth, and reduce food waste in landfills to help mitigate methane emissions.	Pioneer Valley Planning Commission, U.S. EPA Region 1, Project Bread	ongoing (3-5 year project)

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APPENDICIES

A: Qualitative Research Survey Findings

B: Demographic Profiles of Pioneer Valley Communities

to reduce printing costs, this information is available online at: www.pvpc.org/member_communities

C: Pioneer Valley School Meals Data

D: Food System Tool Kit