

Pueblo County Food System Assessment Key Findings & Promising Opportunities

September 2013



This Food System Assessment was conducted on behalf of the Pueblo City-County Health Department's Health Disparities Program. The Health Disparities Program strives to reduce the risk of developing chronic cardiovascular disease precursors such as obesity by providing education and opportunities for the disparate populations in Pueblo County through a grant from the Colorado Department of Public Health and Environment. Colorado State University and WPM Consulting, LLC conducted the research and analysis to inform this assessment.



Pueblo County Food System Assessment

Key Findings & Promising Opportunities

Table of Contents

I. OVERVIEW	4
II. FOOD SYSTEM ASSESSMENT BACKGROUND & INTENT	4
III. METHODS	5
A. USDA FOOD ENVIRONMENT ATLAS	5
B. PUEBLO COUNTY RESIDENT SURVEY	5
C. PUEBLO COUNTY MAPS	6
D. 2013 FOCUS GROUPS	6
E. KEY INFORMANT INTERVIEWS	6
F. ORGANIZATIONAL INFRASTRUCTURE	7
IV. PUEBLO COUNTY SNAPSHOT	7
V. PUBLIC HEALTH: FOOD ACCESS & FOOD SECURITY IN PUEBLO COUNTY	7
A. UNDERSTANDING FOOD SECURITY, FOOD ACCESS, AND PUBLIC HEALTH CONNECTIONS	7
B. FOOD INSECURITY	8
C. THE ROLE OF FOOD ASSISTANCE PROGRAMS	10
D. PUEBLO'S FOOD ENVIRONMENT	10
E. UNHEALTHY FOOD ACCESS	12
F. FACTORS THAT SUPPORT FRUIT & VEGETABLE CONSUMPTION	13
G. CHALLENGES & SUPPORT FACTORS ACROSS SUBGROUPS	14
VI. CONSUMERS & MARKETS IN PUEBLO COUNTY	15
VII. NATURAL RESOURCES & AGRICULTURE IN PUEBLO COUNTY	18
VIII. SUPPORTING THE FOOD SYSTEM: UNDERSTANDING PUEBLO COUNTY'S ORGANIZATIONAL INFRASTRUCTURE	22
A. ORGANIZATIONAL CHARACTERISTICS	22
B. ORGANIZATIONAL OUTREACH	22
C. ORGANIZATIONAL CAPACITY	23
IX. SUMMARY OF FINDINGS	26
X. NEXT PROJECT STEPS	27
A. DEVELOP A FOOD ACTION COUNCIL	27
B. RAISE AWARENESS OF PUEBLO'S FOOD SYSTEM ASSETS & CHALLENGES FOR POLICY MAKERS AND COMMUNITY LEADERS	27
C. RAISE AWARENESS OF OPPORTUNITIES TO BRING PRODUCERS AND RESIDENTS TOGETHER	28
D. CREATE RESOURCE-SHARING AND NETWORKING OPPORTUNITIES ACROSS ORGANIZATIONS	29
E. DEVELOP TARGETED PROJECTS WITH INDIVIDUAL PARTNER ORGANIZATIONS	29
F. SEEK ADDITIONAL IMPLEMENTATION FUNDS	30

XI. PROMISING OPPORTUNITIES	30
A. PROMOTE HEALTHY COMMUNITY FOOD ASSISTANCE	30
B. INCREASE THE AVAILABILITY OF FRESH MARKETS	30
C. ENHANCE THE OFFERINGS OF EXISTING FOOD RETAILERS	31
D. INCREASE THE USE OF FOOD ASSISTANCE AT DIRECT MARKETS	31
E. INCREASE INFRASTRUCTURE FOR DIRECT MARKETS	31
XII. REFERENCES	32
XIII. APPENDICES	33
APPENDIX A: RESIDENT SURVEY TOOL	33
APPENDIX B: FOCUS GROUP TOOL	33
APPENDIX C: RESIDENT SURVEY RESULTS	33
APPENDIX D: FOCUS GROUP RESULTS	33
APPENDIX E: KEY INFORMANT INTERVIEW TOOL	33
APPENDIX F: KEY INFORMANT INTERVIEW PARTICIPANTS	33
APPENDIX G: ORGANIZATIONAL FRAMEWORK FOR PUEBLO COUNTY	33
APPENDIX H: ORGANIZATIONAL PARTNER SURVEY	33

All appendices referenced in this report are available to view and download here: www.pueblohealthdept.org.

Table of Figures

FIGURE 1: AVERAGE RATE OF HOUSEHOLD FOOD INSECURITY IN PUEBLO COUNTY, 1999-2011 (FOOD ENVIRONMENT ATLAS, 2013).....	9
FIGURE 2: WHERE DO YOU GET MOST OF THE FOODS YOU AND YOUR FAMILY EATS?.....	11
FIGURE 3: AVERAGE 2010 FOOD PREFERENCE EXPENDITURES, PUEBLO COUNTY	17
FIGURE 4: DIRECT MARKET SALES REPORTED BY REGION'S AGRICULTURAL PRODUCERS, 2002 AND 2007.....	18
FIGURE 5: NUMBER OF FARMS REPORTING VEGETABLE, FRUIT, AND NURSERY PRODUCTION, 2002 AND 2007	21
FIGURE 6: HOW PUEBLO COUNTY ORGANIZATIONS RATE THEIR CLIENT SUPPORT IN KEY AREAS	23
FIGURE 7: HOW ORGANIZATIONS ASSESS THEIR OWN CAPACITY TO MEET CLIENT NEEDS	24
FIGURE 8: NUMBER OF CONNECTIONS EACH ORGANIZATION HAS WITH OTHER COUNTY, REGIONAL, AND STATE ORGANIZATIONS.....	25
FIGURE 9: ASSISTING ORGANIZATIONS IN IMPROVING SERVICE DELIVERY IN PUEBLO COUNTY AND THROUGHOUT THE COUNTY	25

Table of Tables

TABLE 1: FOOD ASSISTANCE PROGRAM PARTICIPATION, BY % OF POPULATION IN PUEBLO COUNTY, 2009-2011 (USDA ERS)	10
TABLE 2: LOW ACCESS TO STORE INDICATORS, SUB-POPULATIONS IN THE PUEBLO COUNTY AREA, 2010 (USDA, ERS)	11
TABLE 3: HEALTHY FOOD ENVIRONMENT INDICATORS IN PUEBLO COUNTY, 2007-2009 (USDA, ERS).....	12
TABLE 4: UNHEALTHY FOOD ENVIRONMENT INDICATORS IN PUEBLO COUNTY, 2007-2009 (USDA, ERS)	13
TABLE 5: CHALLENGES AND SUPPORT FACTORS ACROSS SUBGROUPS CONSIDERED "AT RISK"	15
TABLE 6: AVERAGE ANNUAL FOOD AT HOME EXPENDITURES IN DOLLARS, 2000-2010	16
TABLE 7: MARKET VALUE OF VEGETABLES, FRUITS, AND NURSERY CROPS, BY COUNTY (IN \$US), 1992-2007	20

I. Overview

II. Food System Assessment Background & Intent

The Health Disparities Program at the Pueblo City-County Public Health Department (PCCHD) initiated this Food System Assessment (FSA) with a health disparities grant from the Colorado Department of Public Health & Environment. The Health Disparities Program strives to reduce the risk of developing chronic cardiovascular disease precursors such as obesity by providing education and opportunities for the disparate populations in Pueblo County.

The Health Disparities team recognizes the role of the entire food system in affecting Pueblo residents' health and quality of life. Food production, processing, distribution and marketing make important contributions to regional economic vitality, and any elements of the food system that create notable absence or limitations in available supplies of healthy, nutritious food have profound effects on public health outcomes. In order to inform the strategies and practice of the Health Disparities team and its many community partners in addressing chronic illness through preventive strategies, this FSA aims to address the following question: *“How can the local and regional food system of Pueblo County increase the availability of safe, fresh and healthy foods and improve food access, food security, and the health of all Pueblo residents?”*

This assessment, therefore, documents the components and interrelationships of the regional food system—from the natural resource base, to food production, distribution and marketing—and the resulting choices available to and made by household consumers. An in-depth study of food system components allows us to then explore and discuss the array of issues related to healthy foods, and present recommendations for the Health Disparities team to evaluate.

This assessment is the result of a partnership among PCCHD, Colorado State University and WPM Consulting, LLC. The project team developed, implemented, and documented this food system assessment, based on guidance from an FSA Advisory Council consisting of 17 members (including 9 Tier I and 8 Tier II members). Tier I Steering Committee members met once per month to receive updates and provide feedback from the project's inception. The larger council, including Tier II members, has met twice during the course of the project (once in May, once in September). There are representatives from Care and Share Food Bank, Centura Health, Integrated Community Health Partners, Pueblo WIC, Native American Women Warriors, Pueblo School District 60, Pueblo School District 70, mental health providers, Pueblo City-County Health Department staff, and invested private citizens that comprise the full Advisory Council.

This report, all referenced appendices, and Pueblo County food system maps are available at www.pueblohealthdept.org.

Additionally, three in-depth issue area reports are also available at www.pueblohealthdept.org. These issue area reports provide more extensive data and analysis than provided in this report. The three reports are:

- Pueblo County Food System Assessment Natural Resources & Agriculture Report
- Pueblo County Food System Assessment Consumers & Markets Report
- Pueblo County Food System Assessment Public Health & Food Access Report

III. Methods

The data presented throughout this report is derived from both primary and secondary sources including: 1) the United States Department of Agriculture Economic Research Service (USDA ERS), particularly their Food Environment Atlas; 2) the 2013 Pueblo County Food System Assessment resident survey; 3) a set of maps prepared by the Pueblo County GIS Department using available community data; 4) themes from 2013 Pueblo County Food System Assessment primary focus groups and key informant interviews; 5) a survey conducted among organizations and agencies who support the county's food system; and 6) other secondary sources of health and food security data. Beyond government data sources on agricultural production, and consumer purchases of foods and markets, we used more localized data sources for natural resources (USDA-NRCS offices), food businesses and markets (Colorado MarketMaker; USDA Agricultural Marketing Service); and food expenditures in various categories (Colorado MarketMaker, <http://co.marketmaker.uiuc.edu>).

A. USDA Food Environment Atlas

The Food Environment Atlas (<http://www.ers.usda.gov/data-products/food-environment-atlas.aspx>) assembles national statistics on three broad categories of food environment factors: 1) food choices, 2) health and wellbeing, and 3) community characteristics. The Atlas currently includes over 160 indicators of the food environment for all areas of the United States, allowing us to compare these indicators for Pueblo County, the region in which Pueblo County is situated (Arkansas River Basin counties that include Fremont, Otero, Prowers, Crowley and Bent), and the entire state of Colorado.

B. Pueblo County Resident Survey

The Pueblo County FSA resident survey was conducted between April and June 2013, and completed by 684 county residents. Survey questions were designed to understand where Puebloans purchase food, what food they commonly consume, what difficulties they have in accessing healthy food, and what community and personal factors would help them access and consume more fruits and vegetables¹. The resident survey tool and the survey results can be found in Appendices A and C respectively (available at www.pueblohealthdept.org).

In order to recruit a sample of respondents that reflected the demographic profile of the community, a variety of outreach methods were used to contact county residents. These

¹ Throughout this report access to fruits and vegetables is used as a proxy for access to foods that could provide a healthy, balanced diet overall.

methods included social media, radio, newspaper, flyers in public areas, and city and county government website postings. Additionally, hardcopy surveys were disseminated widely in-person at many partner organizations including; emergency food pantries, Cooking Matters classes, the Care and Share Food Bank, the Department of Social Services, one local hospital, numerous faith-based organizations, and classes given to participants in the Pueblo County Women, Infant, and Children program. These targeted spots were chosen because they represented demographics that were otherwise under-sampled in the first phase of surveying.

C. Pueblo County Maps

Visit www.pueblohealthdept.org to view a set of Pueblo County Geographic Information Systems (GIS) maps that depict how and where Pueblo residents are accessing food. The maps include:

- Where do we provide food away from home in Pueblo County?
- Where do we provide food for meals made at home?
- Where do residents encounter barriers to accessing full service grocers?
- Where do we grow food in Pueblo County?
- Where are producers concentrated in Pueblo County?

D. 2013 Focus Groups

Although significant efforts were made to obtain a representative sample of survey respondents, we found that some key, targeted groups were still under-sampled. In order to learn more about under-surveyed populations, PCCHD conducted three focus groups: one in Colorado City to reach a more rural, mountain population; one with older adults at the Senior Resource Development Agency (SRDA); and one with a group of students completing their GEDs through the area Board of Cooperative Educational Services Migrant Education Program.

Each focus group included four to five randomly-selected individuals, and was conducted during the month of June 2013. Although these focus groups provided some interesting insights regarding food access for specific populations, the numbers of participants were too few to allow us to draw any generalized conclusions that can be applied to the general population. Therefore, for this assessment, they are used to reinforce themes or inferences drawn from the other data sources and surveys. See Appendices B (Focus Group Tool) and D (Focus Group Results) for more information (available at www.pueblohealthdept.org).

E. Key Informant Interviews

In order to capture perspectives across the entire food system, a series of key informant interviews was conducted. The food assessment team (including its advisory council) developed a list of potential interviewees who represented organizations involved in hunger and poverty, school food, nutrition education, food distribution, agriculture, and rural development. The consultant team members conducted 14, one-hour interviews in all, the majority of which were conducted in-person at PCCHD on March 30th 2013 (see Appendix F for a list of all participants, available at www.pueblohealthdept.org). Those who

were not able to be interviewed that day were interviewed over the phone in the following weeks. The interview tool can be found in Appendix E, also available online.

F. Organizational Infrastructure

The food system assessment team interviewed 24 agency staff who work for organizations that operate entirely within Pueblo County, or also have some regional and/or state scope. These interviews were conducted using an Internet survey, and one follow-up phone conversation. Each organization directly influences Pueblo's food system, and each possesses resources and knowledge that collectively supports Pueblo's food system infrastructure. Understanding the characteristics, function and interrelationships among and between agencies can assist them in better addressing the food access needs of Pueblo's population.

The list of organizations interviewed is not exhaustive; rather it is representative of those who provide food, supporting resources that increase family and individuals' healthy living skills, or facilitate community and economic development. These organizations, their primary missions, and the interview tool are listed in Appendices G and H.

IV. Pueblo County Snapshot

Pueblo County is the tenth most populous county in the state of Colorado, and has a total area of 2,386 square miles. The land base for Pueblo County and the region is primarily in agriculture. According to the 2007 Census of Agriculture, the land area comprising the six-county study region of this assessment is 5,877,753 acres, with nearly 4.2 million acres (71%) designated for agriculture. Of Pueblo County's 1.5 million acres, 910,566 acres (or 59%) are in agriculture.

The United States Census Bureau reported the county population as 160,582 in 2012, a 13.5% increase from the 2000 Census. As of 2012, children and youth (under 18) comprised 23.7% of the population. The 2010 Census counted 59,956 households in Pueblo County, with a median household income of \$41,273.

In terms of ethnicity, 53.9% of Puebloans are White (not Hispanic), 41.6% are Hispanic or Latino, 2.4% Black, 2.9% American Indian/Alaskan Native and 1% are Asian. Approximately 17.8% of the population lives below the poverty line. Census data for 2011 (from the Small Area Income and Poverty Estimates) places about 27% of those under the age of 18 in poverty. This report also presents detailed information about food insecurity and food assistance participation in the following section.

V. Public Health: Food Access & Food Security in Pueblo County

A. Understanding Food Security, Food Access, and Public Health Connections

According to the 2013 County Health Rankings (CHR), Pueblo County ranks 48th out of 59 counties in Colorado in health outcomes (morbidity and mortality) and 52nd in health

factors that include health behaviors, clinical care, socioeconomic factors, and the built environment (CHR, 2013).

Diet is a significant contributor—or protective factor—related to many chronic diseases, including obesity and diabetes. There is increasing interest in determining how food environment factors—such as full-service grocery store or restaurant proximity, food prices, food and nutrition assistance programs, and community characteristics—interact to influence food choices and dietary quality (USDA ERS, 2012).

Because the food system touches many aspects of a community's quality of life, this assessment helps explain what shapes health rankings and can, therefore, inform targeted public health interventions to improve those rankings by influencing the food environment as well as other community interventions. This section presents information on both national and local trends regarding the role of healthy food access in public health, and explores the ways in which Pueblo's food environment affects food security, healthy food access and, ultimately, overall health.

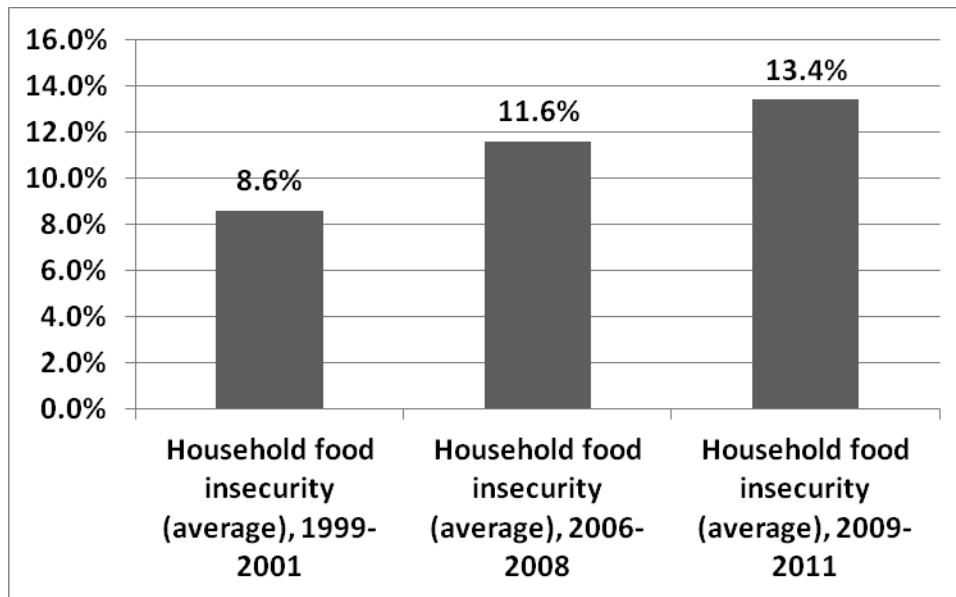
The data presented in this section come from both primary and secondary sources as discussed under "Methods" above. Throughout this report, access to fruits and vegetables is used as a proxy for overall access to the broad array of foods that could provide a healthy, balanced diet.

B. Food Insecurity

Understanding food insecurity and who it affects is critical for understanding not only issues of hunger and malnutrition in the community, but also for identifying who may be vulnerable to chronic diseases, including obesity and diabetes. Though it may seem counter-intuitive, the Food Research and Action Center (www.frac.org) has identified several reasons why food insecurity and obesity are linked across the country. Low-income and food insecure individuals face unique challenges that contribute to high rates of obesity including limited resources; lack of access to healthy, affordable foods; fewer opportunities for physical activity; cycles of food deprivation and over-eating; high levels of stress; more exposure to food marketing; and limited access to health care.

Household food insecurity in Pueblo County, as shown in Figure 1 below, was present in 13.4% of households in 2011 (the most current data). The food insecurity rate grew 4.8% from 1999 to 2011, but overall is still slightly lower than national rates (USDA Food Environment Atlas, 2013). It is important to note is that, according to Map the Meal Gap from Feeding America, 26.3% of Pueblo's children were food insecure in 2011, compared to a state average of approximately 20%.

Figure 1: Average Rate of Household Food Insecurity in Pueblo County, 1999-2011 (Food Environment Atlas, 2013)



Food security data was also collected through the 2013 Pueblo County FSA resident survey to better understand current conditions. Using a question modeled after the USDA Household Food Security module questions, Pueblo County residents were asked, “In the past 12 months, how often were you unable to feed your household all that you wanted because of cost?”

More than half of all respondents reported little to no difficulty:

- 41% reported that they never had difficulty feeding their families because of cost
- 18% reported difficulty less than half the time

The remaining 41% of survey respondents, referred to as “unable to feed” here, include:

- 16% who reported difficulty half the time
- 16% who reported difficulty more than half the time
- 9% who reported difficulty always

Residents were also asked “How often do you have to compromise on healthy or balanced food items because of budget concerns?” A slight majority of responses reported few or no occasions where they felt a need to compromise:

- 29% of survey respondents reported never having to compromise
- 22% reported compromising less than half the time

The remaining 49% of surveyed residents reported compromising on healthy or balanced food items because of budget concerns more commonly:

- 15% reported compromising half the time
- 18% reported compromising more than half the time
- 16% reported compromising always

As an example of the connection between food insecurity, nutrition, and health, those who reported compromising half the time or more also reported the lowest fruit and vegetable intake: 56% of these residents consume only 2 or fewer servings of fruits and vegetables a day.

C. The Role of Food Assistance Programs

Federal food assistance programs play a critical role in abating food insecurity. Overall, these programs are well-established and have high participation rates in Pueblo County, helping to keep overall adult food security levels lower than they might be. The Supplemental Nutrition Assistance Program (SNAP, formerly food stamps) is particularly strong, with approximately 80% of eligible Pueblo County residents participating in 2011 (according to Colorado Department of Human Services caseload data and American Community Survey statistics). Key informant interviews including public health, human services, and school district representatives confirmed that, overall, they are able to reach eligible populations across the county and participation in their programs is steady. Table 1 shows the percentage of Pueblo County residents who participate in various food assistance programs.

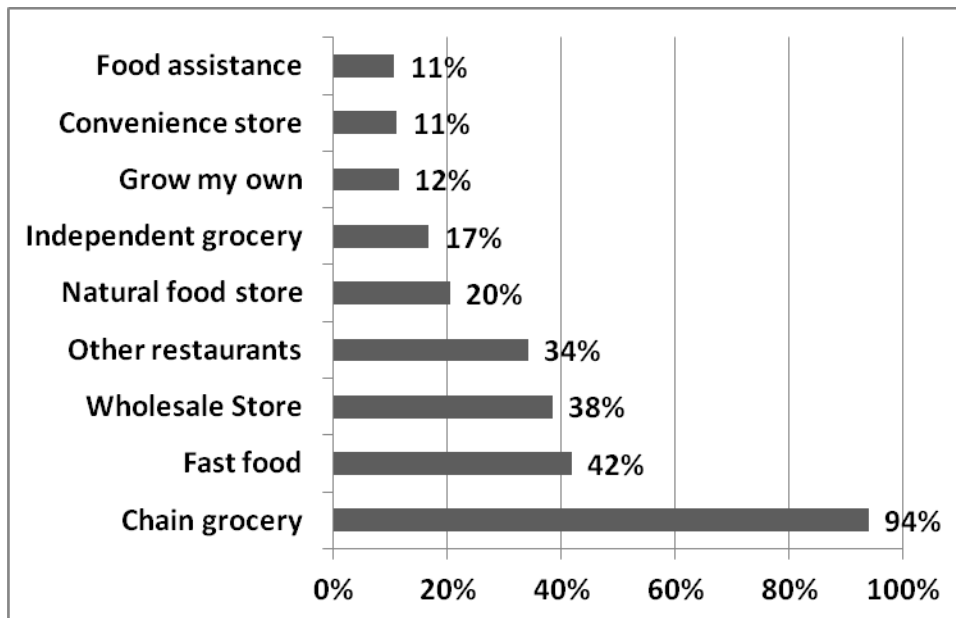
Table 1: Food Assistance Program Participation, by % of population in Pueblo County, 2009-2011 (USDA ERS)

	2009	2011	% change (2009-11)
SNAP participants	6.35	8.86	39.4
School Lunch participants	7.78	7.81	0.3
School Breakfast participants	2.13	2.48	16.2
Summer Food participants	0.25	0.30	19.4
WIC participants	2.15	2.04	(5.3)
Child & Adult Care	0.69	0.65	(4.6)

D. Pueblo’s Food Environment

When studying food availability, it is first important to understand where people are getting most of their food, and how these locations meet their needs. To capture this information, Pueblo County FSA survey respondents were asked “where do you get most of the FOODS you and your family eat?”, and were then asked to pick up to 3 locations, with #1 being where they purchased or received foods most often. Figure 2 shows their responses, with full-service grocers being the most common but, more alarmingly, fast food restaurants were the 2nd most commonly reported source for all food.

Figure 2: Where do you get most of the FOODS you and your family eats?



Note: Since respondents could choose up to three options, these responses total more than 100%.

Another way the food assessment aims to understand healthy food access is by assessing how far residents are from places where they can access fruits and vegetables, as proxies for access to healthy foods overall. To better understand this issue in Pueblo, survey respondents were asked how far they lived from where they obtained most of their fruits and vegetables. Results show that 30% of respondents live 3-5 miles away, and that a considerable percentage (43%) travel 5 or more miles to get their fruits and vegetables.

These survey results are supported by national-level data on distance to food sources that would provide fruits and vegetables. The USDA Food Atlas defines “low access” households as those who live more than 1 mile from a supermarket or large grocery store (if in an urban area), or more than 10 miles from a supermarket or large grocery store (if in a rural area). Table 2 shows the percentage of several sub-populations in Pueblo County with low access to a store, using those federal definitions.

Table 2: Low Access to Store Indicators, sub-populations in the Pueblo County area, 2010 (USDA, ERS)

	Number	Percent of County Population
Population, low access to store	67,049	42%
Low income, low access to store	25,452	16%
Children, low access to store	16,629	10%
Seniors, low access to store	10,439	7%
Households, no car & low access to store	1780	3% of households

While residents often choose to live a great distance from any services and, thus, would not view distance to a store as a barrier, a significant number of residents did identify distance, among other factors, as a barrier to accessing fruits and vegetables. As expected, cost is the primary barrier cited by survey respondents (55%), followed by a large share of residents who perceived “no challenges” (32%). The next two primary barriers cited were distance (24%), and lack of time (15%). Table 5, later in this section, includes the most significant reported challenges from all survey respondents, as well as a comparison to those who reported “access challenges” (classified here as those “unable to feed” and those reporting low consumption rates of fruits and vegetables).

E. Unhealthy Food Access

Another way to examine the role of the food environment on health is to look at the density of food options in a community. Tables 3 and 4 below include food environment indicators provided by the USDA Food Atlas. They show the number of places available in Pueblo County that promote a “healthy food environment” or an “unhealthy food environment”, as defined by the density of commonly used food facilities. Such unhealthy food environments may be just as impactful as healthy food environments on fruit and vegetable intake, rates of obesity, and other chronic diseases.

This context is particularly important given survey results showing how often Pueblo residents get food from fast food restaurants. It is reinforced by information in the following tables, which show a decrease in the number of grocery stores and an increase in the number of fast food restaurants. This abundance of “unhealthy” facilities is also evident in the series of Pueblo County FSA maps, “Where do we provide food away from home in Pueblo County?”; “Where do we provide food for meals made at home?”; and, “Where do residents encounter barriers to accessing full service grocers?” available at www.pueblohealthdept.org.

Table 3: Healthy Food Environment Indicators in Pueblo County, 2007-2009 (USDA, ERS)

	2007	2009	% change 2007-09
Grocery stores (number)	18	16	(11%)
Grocery stores/1,000 pop	0.12	0.10	(13%)
Supercenters & club stores (number)	3	4	33%
Supercenters & club stores/1,000 pop	0.02	0.03	31%
Specialized food stores (number)	11	8	(27%)
Specialized food stores/1,000 pop	0.07	0.05	(29%)

Table 4: Unhealthy Food Environment Indicators in Pueblo County, 2007-2009 (USDA, ERS)

	2007	2009	% change 2007-09
Fast-food restaurants (number)	99	111	12.0%
Fast-food restaurants/1,000 pop	0.64	0.71	10.0%
Full-service restaurants (number)	119	122	2.5%
Full-service restaurants/1,000 pop	0.77	0.78	0.65%
Convenience stores (number)	69	67	(3.0%)
Convenience stores/1,000 pop	0.45	0.43	(5.0%)

Survey and mapping results indicate that access to healthy or unhealthy retail also varies across neighborhoods, with unhealthy food environments overlapping with neighborhoods with high rates of food insecurity. Key informant interviews supported these findings, and participants frequently commented on the significant variation in food options across neighborhoods and across areas of the county. Interview participants repeatedly highlighted the reliance of many low-income residents on a convenience store for their primary shopping, due to a lack of bus routes and full-service grocers nearby. Additionally, in the rural mountain focus group, residents expressed concern about the lack of food stores nearby, and the ability of those with disabilities to both access and travel to food stores.

F. Factors that Support Fruit & Vegetable Consumption

Survey respondents were asked to identify both *community* factors and *personal* factors that would make it easier for them to eat more fruits and vegetables. Among community factors, respondents indicated a desire for more farmer’s markets (63%), followed by more produce or farm stands (37%), better selection of fruits and vegetables at grocery stores (35%), a community garden in their neighborhood (22%), more availability at their worksite or school (19%), more grocery stores near where they live/work (13%), more street or mobile vendors (11%), and more fruits and vegetables provided through their food bank/pantry/meal delivery program (10%).

Respondents overwhelmingly identified greater affordability of fruits and vegetables (72%) as the top *personal* factor that would make it easier for them to eat more fruits and vegetables. They also listed more time to prepare/cook them (39%), knowing how to grow their own food/having the space to grow food (33%), knowing how to prepare them (24%), if they or their family liked eating them (21%), and having someone to cook for/eat with (10%). These support factors are summarized in Table 5 below, across all survey respondents, those “unable to feed”, and those consuming minimal fruits and vegetables.

Focus group participants also discussed personal factors that affect their consumption of fruits and vegetables. In all three focus groups, participants expressed an interest in, and a

desire for, consuming more healthy foods. All three focus groups also expressed an interest in, and a need for, education around nutrition and food preparation. Additionally, two out of three focus groups highlighted time as the main barrier to food preparation, and discussed that eating organic is important, but often organics were perceived as inaccessible due to price and availability.

Even though significant numbers of survey respondents reported that more time and knowledge to grow and cook foods would help them consume more fruits and vegetables, overwhelmingly, the key informant interviews pointed to a lack of community participation in health improvement classes, programs, and activities. These classes are offered by PCCHD, Cooking Matters, and CSU Pueblo County Extension, but employees find it difficult to get people to commit to attending classes. Many organizations commented on the difficulty of recruiting and maintaining a group of volunteers to support these programming efforts. There is an apparent disconnect between the resources and education offered by local organizations, and what the community is using.

G. Challenges & Support Factors Across Subgroups

The sections above discuss how survey respondents, overall, have identified primary challenges and support factors to consuming more fruits and vegetables, as a proxy for overall healthy food access and consumption. A primary focus of this assessment is to inform community strategies that can improve access to healthy foods, food security, and ultimately, healthy food consumption. It is therefore critical to understand how challenges and support factors vary among the groups of people this assessment aims to help—those reporting levels of food insecurity and those reporting minimal levels of fruit and vegetable consumption.

Table 5, below, compares how all survey respondents, those designated as “unable to feed,” and those consuming 3 or fewer servings of fruits and vegetables a day responded to various survey questions. What stands out is how similar responses are across groups. For example, even the “unable to feed” and low-consuming groups selected “no challenges” to eating fruits and vegetables most often, and selected “more farmers’ markets” as their top factor to support eating more fruits and vegetables, even though farmers’ markets are often viewed as cost-prohibitive for many.

The slight differences in response *rates* reveal more information about these populations. For example, the table shows how those “unable to feed” more often selected “distance” as a primary barrier to accessing fruits and vegetables, and more often than the other groups they selected “knowing how to grow them” as a support factor. The low-consuming subgroup selected “more time to prepare them” more often than others as well. Examining these variations can help inform community-level strategies intended to target those who perceive the greatest challenges to accessing sufficient healthy foods.

Table 5: Challenges and support factors across subgroups considered "at risk"

What makes it challenging to GET fruits and vegetables?					
All respondents (n=684)		"unable to feed" (n=276)		3 or less servings of fruits and vegetables daily (n=478)	
Cost	55%	Cost	72%	Cost	59%
No challenges	32%	Distance	30%	No challenges	28%
Distance	24%	No challenges	20%	Distance	26%
What makes it challenging to EAT fruits and vegetables?					
No challenges	47%	No challenges	39%	No challenges	42%
Taste and preferences	30%	Taste and preferences	33%	Taste and preferences	33%
Time to prepare	29%	Time to prepare	33%	Time to prepare	32%
What COMMUNITY FACTORS might make it easier to eat more fruits and vegetables?					
More Farmers' Markets (e.g. more locations or market days, year round markets)	63%	More Farmers' Markets (e.g. more locations or market days, year round markets)	62%	More Farmers' Markets (e.g. more locations or market days, year round markets)	59%
More produce or farm stands	37%	More produce or farm stands	36%	More produce or farm stands	37%
Better selection of fruits and vegetables at grocery stores	35%	Better selection of fruits and vegetables at grocery stores	32%	Better selection of fruits and vegetables at grocery stores	33%
What PERSONAL FACTORS might make it easier to eat more fruits and vegetables?					
More affordable for me	72%	More affordable for me	85%	More affordable for me	77%
More time to prepare/cook them	39%	More time to prepare/cook them	37%	More time to prepare/cook them	40%
Knowing how to grow them	33%	Knowing how to grow them	36%	Knowing how to grow them	29%

VI. Consumers & Markets in Pueblo County

Consumers and markets are the stakeholders and institutions that connect the production of agricultural products and foods and influence how they are demanded, distributed and offered to the intermediary and final end-users in Pueblo County and the region. Therefore, market forces guided by households and private businesses are part of the information one should understand in order to address food access, security and diet-related public health dynamics in this community. The assessment's focus on consumers and markets can be summarized with three key questions:

- Where are people buying their foods and what influences their choices?
- How do buying choices in the region line up with trends in the state and with recommendations from the USDA?
- What markets and institutions may play a role in improving access to fresh produce?

Similar to all Coloradoans, Pueblo residents spent less on food per capita in 2010 compared to 2000, likely due to the declining real wages throughout our state (Table 6). Yet, among all food categories, expenditures on fruits and vegetables decreased the most slowly, showing that households may be prioritizing healthy choices. Still, fruits and vegetables only represent 21% of total food expenditures. Furthermore, only 30% of Pueblo households report consuming 4 or more servings of fruits and vegetables per day: a key benchmark given that this level is the current USDA recommendation. Using responses from the survey, one could surmise that food knowledge and time to prepare fresh produce may be barriers to meeting that USDA recommendation (issues that were addressed above)—but tastes and preferences may also deter greater consumption (a more complicated matter to consider).

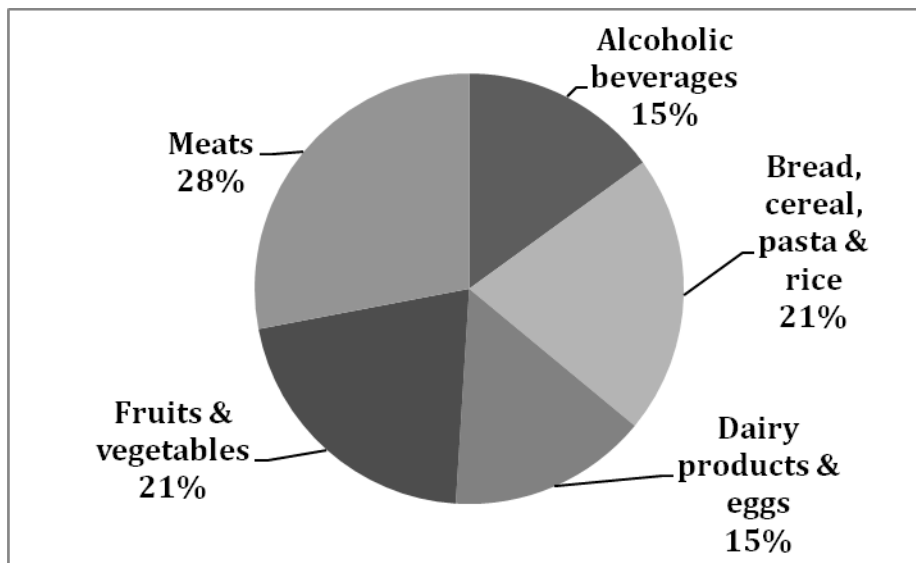
Food away from home represented over half of all food expenditures, even though one might see that as a more costly option. This is a key finding since it suggests that access is not just an issue in more common food retail establishments, but partners in the food service industry may play an important role since consumers are eating away from home more than 50% of the time. In the previous section, we discussed the rising popularity of fast food establishments. Often, fast food establishments offer less-healthy food items that contain high amounts of sodium, sugar, and fat that frequently exceed the recommended daily servings set forth by the United States Department of Agriculture. Therefore, all types of restaurants and food distributors must be considered and integrated into food system programming to address how food markets influence the food choices of Pueblo residents.

Table 6: Average Annual Food at Home Expenditures in Dollars, 2000-2010

	Colorado		Region		Pueblo	
	2000	2010	2000	2010	2000	2010
Bread, cereal, flour, pasta, rice	881	801	591	538	609	552
Meat	1,230	1075	824	710	848	734
Dairy products & eggs	618	570	413	384	425	392
Fruits & vegetables	841	820	546	530	568	550
Total (\$)	4,189	3,879	2,755	2,538	2,855	2,627

Source: Bureau of Labor Statistics as reported via Colorado MarketMaker, 2013. Note: Expenditures are per capita and represent all foods purchased, including those purchased with USDA food assistance benefits. It does not include food assistance provided in channels that do not typically handle cash transactions such as food pantries.

Figure 3: Average 2010 Food Preference Expenditures, Pueblo County



Source: Bureau of Labor Statistics as reported via Colorado MarketMaker, 2013

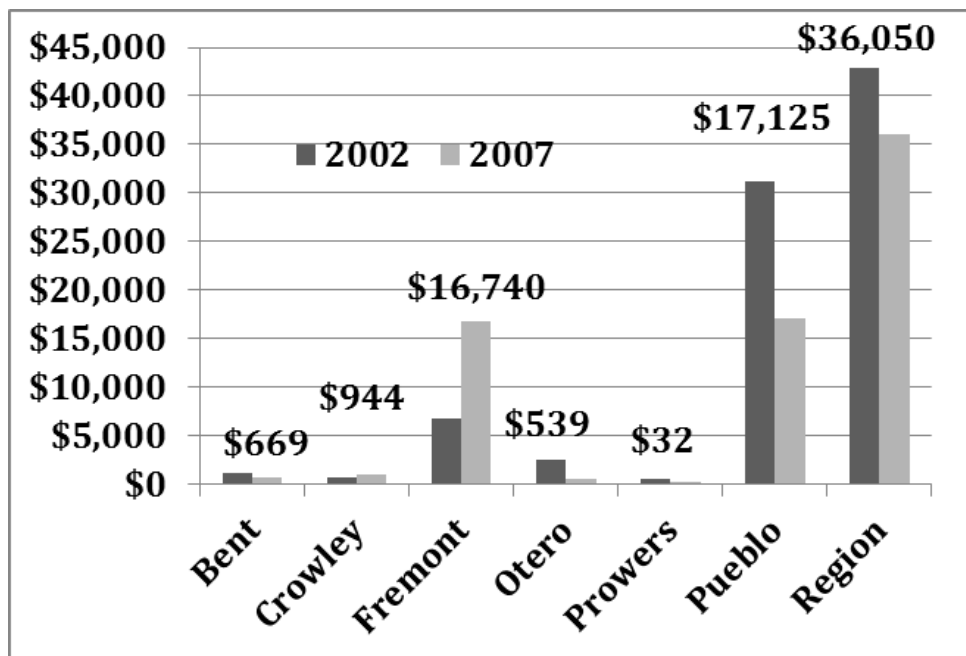
The project team prioritized collecting primary data from community members, and many of our conclusions are drawn from what we learned from surveying 684 Pueblo County residents in June 2013. According to this survey, we learned that grocery and wholesale stores are still the primary source of food purchases, including fresh fruits and vegetables. Over 10% of survey respondents reported growing their own food as a major source of produce. More importantly, a significant number of respondents would like to consider home production as a source of fresh produce (45%), while others would prefer to start buying more fruits and vegetables directly from producers (35%). The former requires education, and perhaps increased access to community gardens, while the latter may require investments or community support for additional market access points.

As one may expect, freshness and quality, followed by cost, were key factors driving produce purchases. Specifically, cost is a dominant determinant and barrier to changes in food purchasing behavior, and this may explain why growing produce is considered the most economically-viable option to some.

On the other hand, surveys show that there is growing interest in procuring locally-grown foods and, even beyond Pueblo county farms and ranches, there was broad interest in buying more Colorado-grown foods. Yet, the market has not responded or seen this interest as sufficient to warrant growth in direct markets. A scan of the market landscape showed there have been stable direct market options in Pueblo and the surrounding counties of the region, and Figure 4 shows no real growth in direct offerings from local farms and ranches. Perhaps concerns about the profitability of direct marketing are a barrier for producers, but the impact it would have on public health or food access may justify public support of these markets to improve the economics of the opportunities for producers.

However, it should be noted that Figure 4 only includes farms and ranches in this region's counties, and there are likely other agricultural operations within Colorado (but outside the region) who could be encouraged to come to more farmers markets if they were in operation and had a stable customer base. And, beyond direct markets, minimal coordination (such as a producer/buyer meet-and-greet or supplying distributors with farmers' contact information) may be necessary to help producers (from the region or broader Colorado) secure wholesale marketing relationships with institutional buyers.

Figure 4: Direct Market Sales Reported by Region's Agricultural Producers, 2002 and 2007



US Census of Agriculture, 2002-2007, adjusted to 2011 dollars.

VII. Natural Resources & Agriculture in Pueblo County

Pueblo County lies in a region known as the Arkansas River Basin. This basin is recognized as one the state's premier agriculture areas, and has long produced Rocky Ford cantaloupes, livestock, and field and vegetable crops. However, the climate, soils, water availability, and access to markets have all shaped the region's agricultural economy. According to the 2007 Census of Agriculture, the region's land area is 5,877,753 acres, with nearly 4.2 million acres (71%) designated for agriculture.

However, in recent years, this area experienced an 18% increase in land in farms, with most of that increase in Crowley and Prowers (20% each), followed by Bent (19% from 2002), and Pueblo (18% from 2002). Seventy percent of all agricultural land in the six-county area is in permanent pastureland (2.9 million acres, US Census of Agriculture, 2007), which limits the amount of land currently available for production of fruits and vegetables.

Across all counties, Pueblo and Fremont seem to be experiencing the greatest change in the agricultural land base, yet only 8.1 % of all agricultural land in Pueblo County and 8.6% in Fremont County is in cropland. For example, one of the most significant indicators of a change in agricultural production potential and land management is that the total number of farms in the region increased substantially from 2,595 to 3,589 from 1992 to 2007 (38% overall).

The greatest increases in numbers of farm units occurred in Fremont County (98%) and in Pueblo County (48%). Overall farms in the region averaged 1,431 acres in 2007, down 17% from 1,736 in 1992. Bent County still has the largest farms, at 2,820 acres on average, followed by Crowley County, with an average 1,684 acres per farm. The greatest changes in farm size, however, occurred in Fremont County, where it decreased by half to 320 acres in 2007, and in Pueblo County, where it decreased by 29% to 1,034 acres over the same period.

Almost all agricultural operations, including the many new smaller-scale farms and ranches,² face similar challenges to remain viable:

1. Significant population growth and resulting demand for municipal water that occurs outside the study region, but will cause water from within the six-county region and the entire Arkansas Basin to be targeted to supply this growth.
2. Increased competition throughout the Arkansas River Basin from other uses including industrial, thermoelectric, and other domestic, mining, and irrigation uses. In addition, the Basin supports significant recreational and environmental uses.
3. Persistent drought, such as the event that began in the fall of 2010 in southeastern Colorado, that decreases crop and livestock producers' revenues, as well as expenditures at businesses and in towns throughout the region.
4. Variable water quality that may affect agricultural production (through both concerns about safety of produce and soil quality), including dissolved solids, salts, minerals and metals (primarily selenium).

Therefore, while there are growing numbers of agricultural operations in the region, those businesses are all competing to maintain water, an adequate land base for agriculture, adequate and timely seasonal labor, and markets for meat, produce and commodity products. Within this context, an analysis of fruit and vegetable operations shows that, as of 2007, Fremont and Pueblo led the region in total value of fruit and vegetable production (see Table 7 below). In Fremont, fresh produce represented 71% of all crop production grown in the county, while it comprised 58% of all crops grown in Pueblo. Overall, however, fruits and vegetables have made up a declining share of the total value of crop production, falling from 41% in 1992, to 25% in 2007. Meanwhile, the land base devoted to fruits and vegetables was only 2% of harvested cropland in 2007 (US Census of Agriculture, 2007).

² From 1992 to 2007 the greatest increases in numbers of farm units occurred in Fremont County (98% to 924 farms) and in Pueblo County (48% to 881 farms).

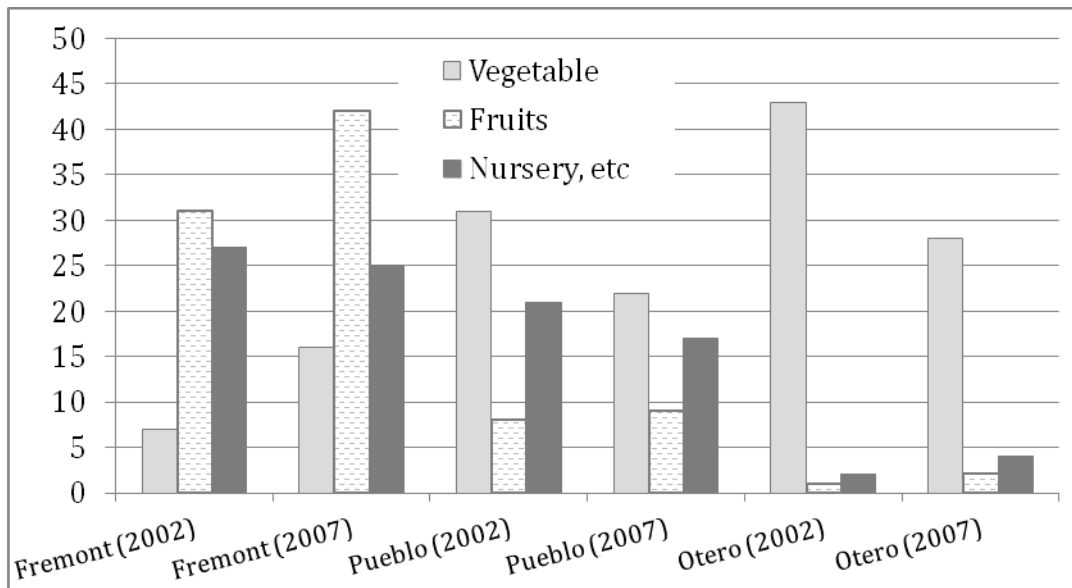
Table 7: Market Value of Vegetables, Fruits, and Nursery Crops, by County (in \$US), 1992-2007

	1992	1997	2002	2007
Bent	(D)	(D)	(D)	1,085
Crowley	405,628	1,579,478	(D)	(D)
Fremont	2,616,539	3,552,775	4,862,634	3,676,623
Otero	8,535,818	9,091,460	6,454,336	(D)
Prowers	(D)	(D)	(D)	(D)
Pueblo	12,011,711	11,658,988	6,458,087	9,902,688
Region	23,569,695	25,882,701	17,775,057	13,580,396

Source: US Census of Agriculture 1992-2007. All data in 2011 dollars. Note: (D) means data are not disclosed to protect individual business information.

Figure 5 clearly shows that, for the counties with the greatest value of sales in vegetable, fruit, and nursery production, only Fremont County has an increasing number of producers growing vegetables and fruits. In Pueblo County, the number of vegetable and nursery growers has declined, while the number of reporting fruit growers increased very slightly. Otero County shows a decrease in vegetable producers from 43 to 28 between the two Census periods, but a slight increase in both fruit and nursery production. In the past few years, Full Circle Farms has been helping farmers build and operate greenhouses in the Pueblo region. Although this growth in vegetable production under cover occurred after 2007 Census of Agriculture data were collected, hopefully this new production will appear in the 2012 data.

Figure 5: Number of Farms Reporting Vegetable, Fruit, and Nursery Production, 2002 and 2007



Source: US Census of Agriculture, 2002-2007.

There is potential to expand fruit and vegetable production in Fremont and Pueblo Counties; however, these are areas where farm operators are not currently generating significant amounts of income or full-time jobs from agriculture. Growth in this sector is contingent on creating new market opportunities within the region, based on residents' food preferences, and a willingness to pay for preferred fruits and vegetables. From June to October every year, the region's farm stands feature a great variety of fresh produce, and many local residents shop at these stands. However, many of the stands are located outside of towns in the region, in sparsely populated farming areas, and are therefore not accessible to individuals without their own transportation.

The most common market outlets for large-scale produce growers in the region are wholesale buyers who have contracts to purchase melons, peppers, potatoes and onions. Farm stands are secondary markets for larger growers who cannot move much volume through local channels, but are primary markets for smaller-scale growers. However, since fresh produce price points are lower in the region's direct markets compared to other metro areas statewide (see <http://www.coopext.colostate.edu/ABM/marketreports.htm> for price reports from farmers' markets around the state), some growers prefer to sell their produce in other areas, such as El Paso County farmers' markets, and/or Denver metro area farmers' markets.

Technical and business development support for new farmers will be critical, so these new business entrants can take advantage of opportunities to enter agriculture and develop sustainable operations as older farmers transition out of agriculture. Less water-consumptive vegetable crops, in addition to controlled growing environments such as

greenhouses, which minimize water use and extend the market season, will be important elements to supporting the region's fruit and vegetable sector in the coming years.

VIII. Supporting the Food System: Understanding Pueblo County's Organizational Infrastructure

A. Organizational Characteristics

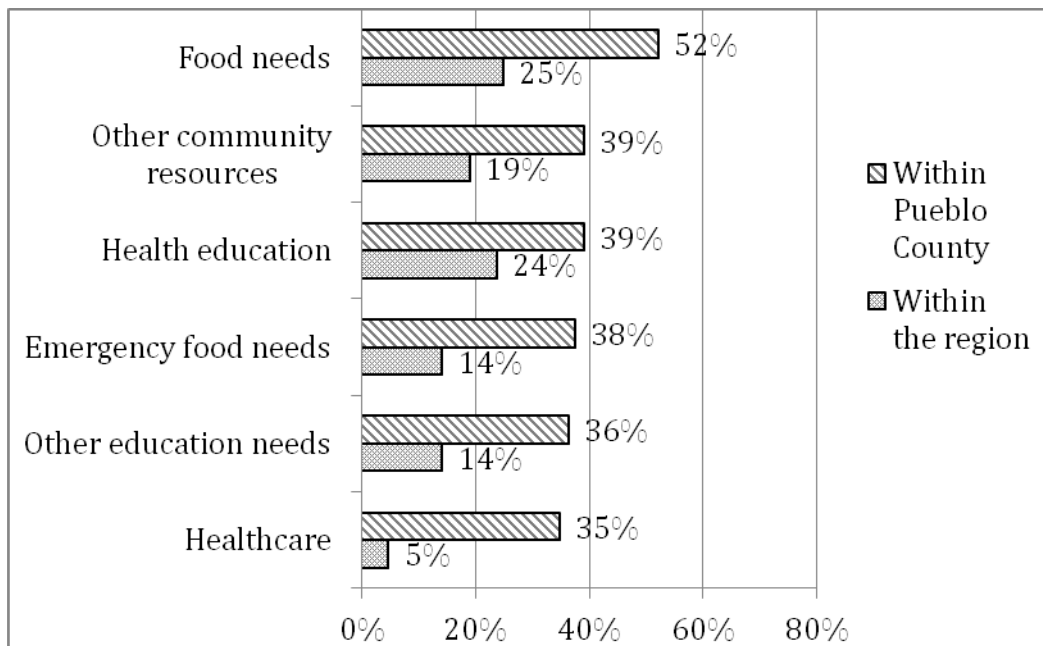
Pueblo County's food system organizations are diverse not only in terms of the client base they serve but also in terms of the resource base from which each organization works. Since interviews were conducted mid-2013, we asked each respondent to look back at 2012 to estimate their client and resource base, and then think about how 2013 compared. According to respondents, the volume of clients served varied significantly, demonstrating a potential to cast a broad net of influence on the part of some organizations and a much narrower reach on the part of others. Overall respondents indicated they served an average of nearly 50,000 individuals per year, the smallest organization serving only 6 and the largest serving a multi-county region and approximately 750,000 people.

The resources with which each organization worked also varied significantly. For example, the average number of employees across all organizations was 140, ranging from no paid employees (in other words, all volunteer work force) to 2,000 total. Most organizations had relatively few paid employees, with half having less than 16 total. The average number of full-time employees was 127 (with half having fewer than 8), and the average number of part-time employees was 58. Volunteers make up the majority of the human capital for many Pueblo County organizations, with an average of 244 per organization/agency. The number of volunteers ranged from none to 1,900. Budgets varied widely, ranging from \$5,000 annually to \$40 million, but half reported organizational budgets of less than \$850,000. This means that the average resources per client were \$274, with half spending less than \$56 per client. Evaluating their resource base overall, 41% of respondents indicated that they anticipated their budget for 2013 would remain the same, while 24% anticipated an increase and 35% expected a decrease in resources.

B. Organizational Outreach

When asked how well they felt their organization performed in meeting various client needs in Pueblo County, 52% of respondents said they met their clients' food needs the best (by responding either extremely well or very well in terms of meeting each identified need), followed by helping them find other community resources and providing health education (both 39%). Overall, the staff perceived that they performed better at meeting client needs within Pueblo County, with much less ability to provide outreach and resources outside of the county.

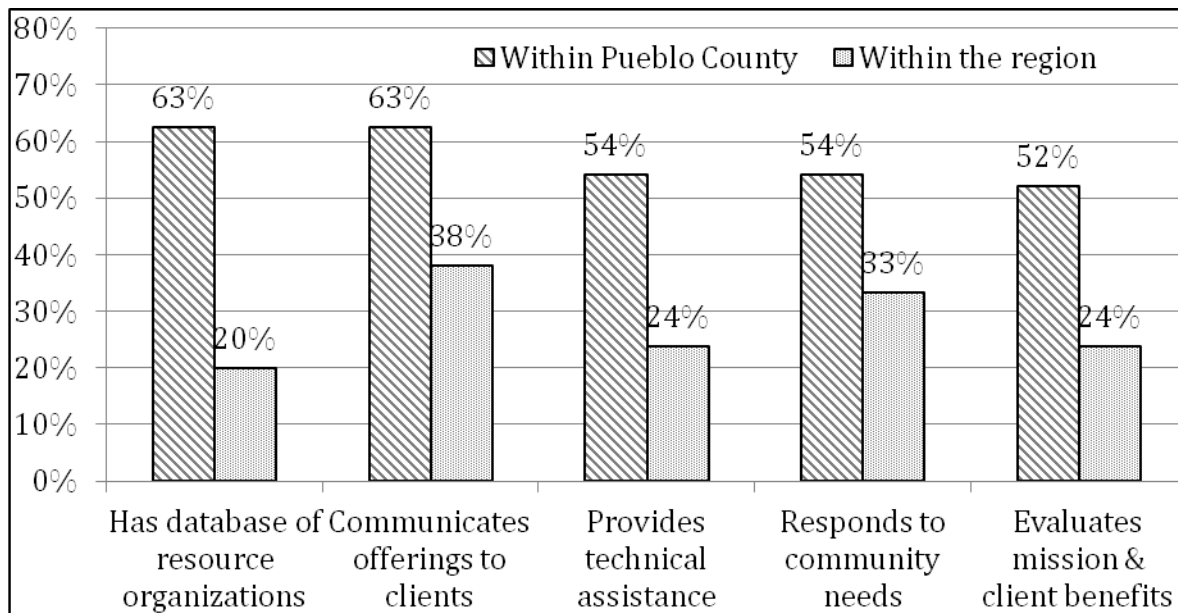
Figure 6: How Pueblo County Organizations Rate their Client Support in Key Areas



C. Organizational Capacity

When asked about the resources and activities they engaged in to build and maintain their ability to serve client needs, overall, staff rated highest their ability to collect information by using a database of resource organizations and communicate their programs and services, followed by providing technical support to other organizations in the community and being responsive to emerging needs. An important element of making sure that an organization truly is responsive involves asking the service recipients if they feel the services provided really meet their needs. A little more than half (52%) indicated they study and interact with their clients to assess how well they are meeting client needs in the field. Within the region as a whole, 38% got the word out about available services and resources to clients in the other five counties and 32% felt they responded to community needs outside of Pueblo County, but relatively few (less than 25%) dedicated any organizational capacity-building to other counties in the region.

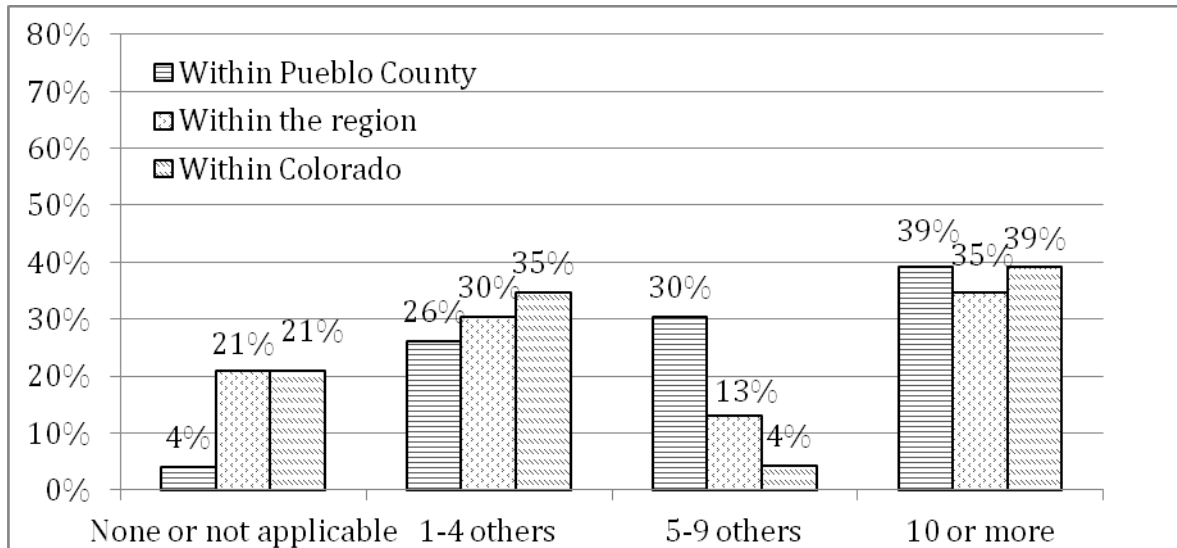
Figure 7: How Organizations Assess their own Capacity to Meet Client Needs



Comparing responses across these two questions, exactly half of those interviewed felt that they were more effective at immediately meeting client needs through direct service provision than they were effective at building capacity to serve those clients. At a six-county regional level, however, only one quarter felt they were effective at providing client services, and no one organization felt they placed greater emphasis on building regional capacity to serve those clients.

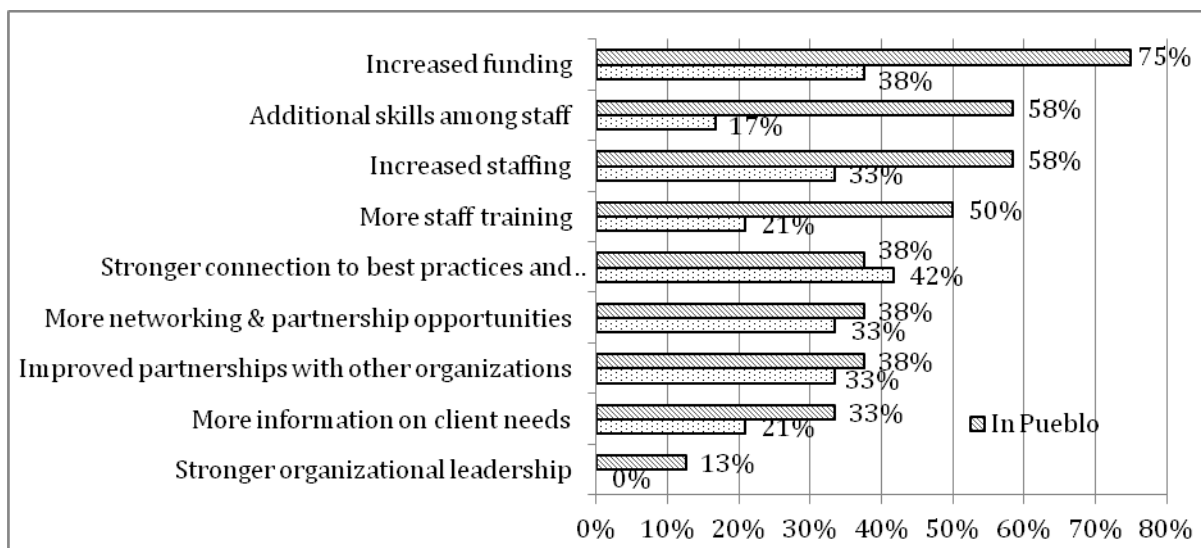
We also asked each staff member to estimate the number of other organizations with which they actively partnered in Pueblo County, within the six-county region, and around the state. Those that had a lot of connections to other organizations—10 or more partnerships—had developed active partnerships outside of Pueblo to about the same degree. Only 4% felt like partnering with other organizations within Pueblo County was not applicable to them, while one-fifth felt that way about organizations around the region and the state. Those who partnered with fewer organizations in Pueblo County—1 to 4 others—also maintained strong partnerships outside the county, while those with a moderate number of partnerships—5 to 9 other organizations—appear to focus on Pueblo County organizations much more than those outside the county.

Figure 8: Number of Connections Each Organization Has with Other County, Regional, and State Organizations



As noted before, the resource base for Pueblo County’s food system organizations is quite variable. When respondents were asked what would help their organizations improve service delivery to their clients, respondents overwhelmingly replied “increased funding,” followed by additional skills for staff (see Figure 9 below). At a regional level, however, respondents first identified establishing a stronger connection to best practices and research, followed by increased funding, and then more staffing and networking and partnership opportunities. Interestingly, there was less interest in stronger organizational leadership—the presence of which might help some organizations reach out and develop stronger partnerships in the community.

Figure 9: Assisting Organizations in Improving Service Delivery in Pueblo County and Throughout the County



IX. Summary of Findings

Collectively, the findings from this assessment have examined characteristics of the regional food system that feeds – or could feed – Pueblo County residents. Findings on agriculture, markets, food security, food access, and consumption reveal an untapped potential to leverage the region’s ability to produce healthy foods at all scales (from larger farms to personal gardens) to address critical health issues related to poverty, obesity, food insecurity, and very low consumption rates of fruits and vegetables. Some key findings that demonstrate the need – and ability – of the region to bring more elements of its food systems in alignment (e.g., regional food grown is used to feed residents in need) include:

- Pueblo County faces higher obesity, food insecurity, child food insecurity, and childhood poverty rates than the state.
- While most Puebloans are not eating the recommended fruits and vegetables, low-income families are disproportionately forced to compromise on healthy food consumption to make ends meet.
- Cost and distance are consistently found to be the primary challenges to accessing more fruits and vegetables across the county.
- Many Puebloans live in an “unhealthy” food environment and have “low access” to a healthy food environment, which is affecting their food consumption choices. This is particularly true in rural and low-income areas of the county. According to the Pueblo County FSA resident survey, the 2nd most commonly reported source of all foods in the county (behind full-service grocers) is fast food.
- Not surprisingly, food away from home, particularly food consumed from fast food restaurants, represents a significant share of the region’s food budget, and access to these sources is increasing. Generally, such restaurants have limited fresh fruit and vegetable options, but such facilities need to be engaged to promote healthy food access for all residents.
- Even though distance to grocers is significant, survey respondents reported a strong desire for access to more fresh and local foods. The need for more direct farm-to-market sales in the county was consistently mentioned by key informant interviews and desired by a large share of residents surveyed.
- Commonly selected means for increasing fruit and vegetable consumption that could be addressed as a community included more farmer’s markets, more produce stands, better fruit and vegetable selection at the grocery store, and community gardens.
- Commonly selected personal factors for increasing fruit and vegetable consumption focused on food and nutrition skills and education, such as knowing how to prepare or grow your own foods.
- There is potential to expand fruit and vegetable production in Fremont and Pueblo Counties to help meet some of this demand; however, growth in this sector is contingent on creating new market opportunities within the region, based on residents’ food preferences, and a willingness to pay for preferred fruits and vegetables.

- Technical and business development support for new farmers is critical so they can take advantage of opportunities to enter agriculture and develop sustainable operations as older farmers transition out of agriculture.
- A strong network of organizations reflecting the entire food system could greatly help address all of these challenges and opportunities. However, the organizations providing technical support and client outreach and education within Pueblo's food system are sometimes difficult to contact and they have varying endowments of staff and financial resources to support their activities.
- Additionally, several organizations expressed doubt about the value of partnerships—in an environment where partnering could help leverage and extend scarce resources.

The immediate project actions as well as long-term opportunities outlined below were developed with all of these key findings on need, interests, real and perceived barriers, and strengths and assets in mind.

X. Next Project Steps

A. Develop a Food Action Council

A county-wide, on-going advisory body will be needed to oversee the sharing and implementation of this assessment's findings. The coordination of a food systems-focused collective would also address the need for enhanced networking, sharing of resources, and coordination of client services as highlighted in this assessment's survey of food and agriculture organizations and the two food assessment forums. Specific and immediate action steps could include:

- Transition the Food Assessment Advisory Council to a Food Action Council under the Health Disparities Mid-Level Obesity Stakeholder group. This will provide long-term sustainability for the group, as members will be meeting biweekly. This aligns with the current Mid-Level Obesity Stakeholder group approach of using healthy, food-centered initiatives to reduce obesity in the Pueblo Community.
- Work to share all available community assets through continued collaboration between all members of the new partner organization network.
- Such action is supported by the Centers For Disease Control's (CDC) guidance on strategies to increase fruit and vegetable intake. The CDC recommends the promotion of food policy councils as a way to improve the food environment at and local levels (CDC, 2011).

B. Raise Awareness of Pueblo's Food System Assets & Challenges for Policy Makers and Community Leaders

This assessment has uncovered both significant challenges as well as opportunities related to the county's food system. The reports of findings include extensive data points regarding the growth of Pueblo's agricultural economy and its untapped potential to feed more local residents as well as data on the current realities of Pueblo's residents who currently lack consistent access to healthy foods.

A critical early step will be to raise awareness of residents, local government staff, and of local elected officials around what we have learned through this assessment. Engagement and awareness building will pave the way for quicker and more effective implementation of needed policy and financial strategies to strengthen Pueblo's food system.

Specific action steps include:

- Develop at least two, two-page "stats and stories" documents to disseminate widely and raise awareness amongst key stakeholders. Focus these on the potential to grow Pueblo's local economy through the food system and on the realities of food insecurity and poor healthy food access (and related health concerns) throughout the county.
- Collect stories from Pueblo residents to provide context to the "stats" (statistics) provided extensively throughout the assessment's report of findings.

C. Raise Awareness of Opportunities to Bring Producers and Residents Together

From the report findings on consumers and markets, there is evidence that both education (on growing your own produce) and increasing outreach and awareness about current direct market outlets would benefit many Pueblo residents. There may be some rationale for supporting current (or investing in new) direct market access points for the community.

Further, research has shown that marketing campaigns about the recommended servings of fruits and vegetables work to increase consumption – when people are aware of the recommended servings and familiar with specific campaigns to promote them, they eat more (Erinosho et al, 2013). Other research has shown that state-sponsored agricultural marketing campaigns to promote state-grown produce can and does lead to increases in fruit and vegetable consumption when compared to other states. Such programs, when available, should be maximized (Howlett et al, 2012).

Specific action steps to increase awareness of opportunities for both producers and consumers include:

- Use findings from this assessment to develop fact sheets about fruit and vegetable consumption in Pueblo County relative to the state and to national recommendations. Initiate an awareness-building campaign to call attention to the national recommendations and specific ways residents can access and consume more produce in the county. For example, integrate stories of how gardening education has already addressed barriers to eating recommended servings.
- Work with the Arkansas Valley Organic Growers and other regional producers to raise awareness for more regional producers about the potential interested markets (individual and institutional) in the county, and facilitate connections between them. Models from other Colorado communities could be replicated, including collaborative workshops, meet-and-greets, and "speed dating" events that bring producers and consumers or institutions together in a casual environment. Growth in direct markets across the state suggests there remain untapped possibilities in Pueblo.

- Examine how Colorado Proud or Colorado MarketMaker could play a role in better connecting food system buyers and sellers. There is interest in purchasing directly, but fewer farms and ranches are choosing to serve that market. If opportunities were clearer, or producers from a broader area of Colorado were considered, it may facilitate more direct marketing options.

D. Create Resource-Sharing and Networking Opportunities Across Organizations

- Create regular opportunities for county and regional food system organizations (food producers and distributors, county health department and social services staff, health professionals, and relief and outreach staff) to come together to discuss persistent and emerging issues pertaining to food access and health outcomes for the populations they serve. Discuss funding opportunities and ways they could partner to share information and resources.
- Consider a facilitated community capacity-building event that would help improve staff competency and identify areas where training might be secured. Several entities are available to provide ongoing technical assistance for capacity-building, including:
 - The Colorado Non Profit Association, www.coloradononprofits.org, works with and for all of Colorado's nonprofits to create impact in the state's communities. They offer webinars and in-person trainings around the state on a variety of subjects. Contact information: 455 Sherman St. Suite 207 Denver, CO 80203; (303) 832-5710 or (800) 333-6554.
 - Community Resource Center, <http://www.crcamerica.org/>, is a 501(c)(3) nonprofit organization that provides training, technical assistance and consultation to nonprofits and community-based organizations in Colorado and across the country. Contact information: Denver, 444 Sherman Street Suite 102, Denver, CO 80203-3520; (303) 623-1540 or (800) 516-6284.

E. Develop Targeted Projects with Individual Partner Organizations

Beyond awareness building, there are several targeted projects which are already ripe for implementation. The results of this assessment could be summarized for specific project partners with recommendations for project implementation. Examples include:

- Provide health education to restaurant owners in the community, and work to explore how local fast food and other restaurants can begin to offer or better promote existing healthier menu items.
- Modify hospital discharge instruction (patient education) for the 85,000 Medicaid/Medicare-eligible residents to include questions about food security and access to nutritious options during the post-hospital visit period to reduce chronic re-admissions and co-morbidities. Also, learn from and build upon the "Prescriptions for Produce" program initiated in 2013 by St. Mary Corwin Medical Center, Southern Colorado Medicine, and the St. Mary Corwin Foundation. Through this program, primary care physicians provide vouchers that were funded through the Foundation to patients with chronic conditions that could benefit from fresh, healthy foods.

F. Seek Additional Implementation Funds

The findings from this assessment, and any other developed materials, should be used to seek stable sources of continued funding. Support could be secured for a Food Action Council as well as for staff time, incentives, support materials, meeting space and more to support the project listed above. This would increase the long-term sustainability of these initiatives, while affording the opportunity to address identified gaps from the study.

XI. Promising Opportunities

Long-term, the findings from this assessment should help inform the development of several diverse strategies to promote an abundance of healthy food options where they are most needed throughout the county. Some promising, and needed, interventions include those discussed below.

A. Promote Healthy Community Food Assistance

- Establish a strong Farm-to-Food Bank system to increase the availability of fresh, nutritious produce items at emergency food bank and commodities locations within Pueblo County. Use Colorado MarketMaker as an electronic platform to make this connection.
- Build a network of volunteers to participate in regular field gleaning and produce harvest activities. This could minimize field rot by harvesting excess produce directly from the fields of participating local producers at the end of the season and help address food insecurity issues in Pueblo County. In addition, connect to those with home gardens to direct excess produce to those in need and educate Pueblo residents about food insecurity in their community (see app at HarvestShareDenver.org).
- Similar recommendations are included in the CDC guidance on strategies to increase fruit and vegetable intake. The CDC recommends including fruits and vegetables in emergency food programs since they can significantly increase client access to healthy foods by partnering with local grocery retailers, farmers markets and other venues to supply these foods and by getting donations of surplus from local farmers (CDC, 2011).

B. Increase the Availability of Fresh Markets

- Host regular farmers' markets at District 60 and District 70 schools that are not only in food desert census tracts, but are also located in food swamps. This would allow residents to experience increased access to safe, healthy foods each week, without needing to construct a full-service grocery store in each neighborhood.
- Revamp the hospital gift shops to become fresh produce micromarkets. St. Mary Corwin Hospital is working to eliminate unhealthy foods of minimal nutritional value from the campus gift shop and, instead, replace them with fresh fruits and vegetables. Although the market would serve allied health professionals, patients, and visitors, it would also be large enough to serve as a secondary nutritious food access point for individuals living south of Minnequa Avenue that have poor access to full-service grocery stores.
- Such action is supported by the CDC's guidance on strategies to increase fruit and vegetable intake. The CDC recommends ensuring access to fruits and vegetables in

workplace cafeterias (including medical centers) and other food service venues (CDC, 2011).

C. Enhance the Offerings of Existing Food Retailers

- Build upon the outreach to partner organizations discussed under “next steps” to develop a “healthy and convenient” campaign with convenience stores throughout the county. Begin by partnering with Loaf n Jug (because of its connection to a full-line food retailer with established supply chains for fresh produce), but a campaign could extend to all convenience stores. The campaign could focus on tips, tools, and resources (including financial incentives) for stores to promote healthy and fresh options, and could also include trainings and monitoring from the public health department.
- This is in line with the CDC guidance on strategies to increase fruit and vegetable intake. The CDC recommends improving access to retail stores that sell high-quality fruits and vegetables or increase the availability of high-quality fruits and vegetables at retail stores in underserved communities (CDC, 2011).

D. Increase the Use of Food Assistance at Direct Markets

- Given how strong and well-established federal food assistance programs are in Pueblo County—it has one of the highest SNAP participation rates in the state—these programs could be leveraged to bring more dollars to local agriculture, which can in turn provide fresh, healthy foods to those who need it. This could include enacting policies in support of EBT access at farmers markets, the use of Women, Infants, and Children (WIC) vouchers at markets or CSAs, and the Senior Farmers’ Market Nutrition Program.
- Explore the potential to work with local foundations, businesses, and county government to establish an incentive program that would enhance the dollar amount of SNAP benefits redeemed at farmers markets or on healthy foods in corner stores.

E. Increase Infrastructure for Direct Markets

- Work with existing partners to enhance local processing and distribution of local fruit and vegetables by developing a network – or a co-operative for direct farm-to-market sales to restaurants, grocery stores, and schools.
- Support sustainable farm businesses and ensure the next generation of farmers by bringing back Colorado State University Extension’s Building Farmers and Ranchers program.
- Support emerging food businesses (cottage food³ and commercial scale), especially those that will purchase local produce and process it into healthy food products (including minimally processed food with increased shelf life).

³ Cottage foods tend to be home-based and are subject to different, very limited, regulatory oversight, but can be an appropriate path for individuals to slowly grow a food business when executed according to best practices.

XII. References

- County Health Rankings. 2013. University of Wisconsin Population Health Institute. Available from www.countyhealthrankings.org.
- Food Environment Atlas. 2013. United States Department of Agriculture. Economic Research Service. Available from <http://www.ers.usda.gov/data-products/food-environment-atlas.aspx>.
- Natural Resources Conservation Office. 2013. United States Department of Agriculture.
- U.S. Census of Agriculture, National Agricultural Statistics Service (NASS). Multiple years' data. Available from <http://www.agcensus.usda.gov/index.php>.
- Coleman-Jensen, A., M. Nord, M. Andrews, and S. Carlson. 2012. Household Food Security in the United States in 2011. USDA Economic Research Service. Report 141. Print.
- Economic Research Service. United States Department of Agriculture. 2009. Report to Congress. Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences. June 2009.
- Hayden, S., J. Hyman, J.C. Buzby, E. Frazão, and A. Carlson. 2011. How Much Do Fruits and Vegetables Cost? United States Department of Agriculture. Economic Research Service. EIB-71.
- Strategies to Prevent Obesity and Other Chronic Diseases: The CDC Guide to Strategies to Increase the Consumption of Fruits and Vegetables. 2011. U.S. Department of Health and Human Services Centers for Disease Control and Prevention; http://www.cdc.gov/obesity/downloads/fandv_2011_web_tag508.pdf
- Erinosho T, Moser R, Oh A, Nebeling L, Yaroch A. Adults who are knowledgeable of the daily fruit and vegetable recommendation and are aware of the United States fruit and vegetable campaign eat more F&V. 2013. http://www.ifava.org/media/42627/the_ifava_scientific_newsletter_80_07-08_2013.pdf
- Howlett A, Burton S, Newman C, Faupel A. 2012. The positive influence of state agricultural marketing programs on adults' fruit and vegetable consumption. September/October 2012, Am J of Health Promot, 2012; Vol. 27: 17-20.

XIII. Appendices

All appendices referenced in this report are available to view and download here:
www.pueblohealthdept.org.

Appendix A: Resident Survey Tool

Appendix B: Focus Group Tool

Appendix C: Resident Survey Results

Appendix D: Focus Group Results

Appendix E: Key Informant Interview Tool

Appendix F: Key Informant Interview Participants

Appendix G: Organizational Framework for Pueblo County

Appendix H: Organizational Partner Survey