

Santa Clara County Food System Assessment



A Practical Tool for Food System Change

Santa Clara County Food System Alliance

DECEMBER 2013



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The Santa Clara County Food System Alliance (SCCFSA) is a collaborative of stakeholders concerned with issues of healthy food access, agricultural production, and food distribution in Santa Clara County. The Alliance collaborates with stakeholders in our neighboring counties that share concerns about the same issues.



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Executive Summary

Let food be thy medicine and medicine be thy food. —Hippocrates (460–377 BCE)

The future health of Santa Clara County's food system, from its approximately 1,100 farms and ranches to its growing population of 1.8 million people, is the driving force behind the Santa Clara County Food System Assessment (the Assessment). The Santa Clara County Food System Alliance (the Alliance) produced the Assessment to be a practical tool that will serve as a foundation for positive change in our county's food system. To that end, the Assessment functions as a tool to educate and engage food system stake-holders and the public at large, as well as a basis for planning the Alliance's future actions.

The information in the Assessment was gathered over a period of a year and a half, beginning in January 2012. It contains data such as the amount of farmland that remains in the county; what is being done to preserve it; what crops are grown here; how and where this food is distributed; what factors most affect the viability of farming operations; how many residents do not have access to affordable, healthful food; how that is affecting their well-being; what is being done to educate the community about our food system; how much food is being wasted; and what do we do with this waste.

The Alliance analyzed this and other key baseline data of the county's food system to date to formulate recommendations that work toward achieving the Alliance's vision for our local food system: A diverse and viable agriculture system on rural and urban lands that are protected and well-stewarded. The Alliance sees agriculture continuing to play an ever-enhancing role in the health of our local economy and ecosystem and supporting social justice in our community. This ideal system will provide healthful, affordable food for all residents in Santa Clara County and beyond, regardless of financial status. Locally grown produce and value-added products will be available in abundance through retail, direct-marketing, and institutional venues. All residents will participate in and have a deep understanding of our local food system as well as the importance of healthy food choices to their well-being.



Key Findings

Currently, there are many positive aspects of our county's food system on which to build this vision:

- 25 different agricultural commodities grown in the county exceeded \$1,000,000 in crop value in 2012.
- The proportion of farms with direct sales in Santa Clara County (10.5%) is greater than that of California as whole (8.7%).
- There is renewed interest and demand for locally grown foods and community gardens.
- A new agricultural marketing campaign—Buy Fresh Buy Local Santa Clara Valley—was recently launched to raise awareness of locally grown food and increase local farmers' incomes.
- More than half (19 of 36) of the county's certified farmers' markets accept benefit cards from food assistance programs.
- The Campaign for Healthy Food San José is making successful steps toward its goal of ensuring access to fresh fruits and vegetables in all neighborhoods.
- An evaluation by Santa Clara University of La Mesa Verde's program to increase healthy food access for impoverished communities demonstrated the successes of the program: 91% of families ate more vegetables, and 25% of families reported saving over \$720 annually by eating fresh organic produce they grew at home.
- The cities of San José and Palo Alto are both constructing anaerobic digestion facilities to handle food waste.

There are also a number of challenges that our county's food system faces in order to attain this vision, such as:

- 55% of the county's remaining farmland is at risk of being developed over the next 30 years.
- Up to 40 disparate regulatory agencies can encumber farmers' and ranchers' abilities to more efficiently run their operations.
- 14% of the county's population was food insecure in 2010.
- More than half of the adults in the county are either overweight (38%) or obese (17%).
- Only 4 of the county's 15 cities currently collect food waste curbside.

The recommendations build on these and other existing strengths of our food system while seeking to address issues of concern. The individual explanations for each recommendation are listed in Chapter 7.

Recommendations

Agriculture and the Economy

- 1. Protect the agricultural lands in Santa Clara County, many of which are threatened by development.
- 2. Uphold policies focusing growth within urban boundaries and limiting their expansion.
- 3. Increase public awareness of the challenges of farming at the urban/ rural edge.
- 4. Retain reduced water rates for agricultural users.
- 5. Address local agricultural workers' housing shortages.
- 6. Provide more funding opportunities for farmers and ranchers.
- 7. Streamline the regulatory process for agricultural operations.
- 8. Promote local origin labeling to increase sales of locally grown food at point of purchase.
- 9. Encourage wholesale produce companies in Santa Clara County to procure goods from local farms and source-identify farm origin.
- 10. Encourage direct purchasing contracts to increase viability of farming operations.
- 11. Adopt a local food ordinance.

Hunger, Food Justice, and Health & Nutrition

- 12. Plan for food production within urban areas to improve the county's urban social and environmental conditions.
- Increase the acceptance of CalFresh at all city and county farmers' markets.
- 14. Increase CalFresh enrollment and nutrition education.
- 15. Increase the percentage of retail food outlets that offer healthy, affordable food.
- 16. Use county nutrition standards as a model.

Environment

- 17. Encourage more local governments to adopt programs that divert food waste from landfills.
- Support education programs to help individuals reduce and reuse food waste.





Next Steps

Continuing on the overall theme of building on strengths while addressing challenges, the Alliance will work to:

- 1. Engage key stakeholders and the public across Santa Clara County by raising awareness about the data and recommendations contained in the Assessment.
 - a. The Alliance will seek opportunities to increase residents' knowledge and appreciation of their role in our food system; this an important step toward strengthening the local food system. Readers should note that while the recommendations serve to inform the Alliance's future work, all county residents can and do play a part in making these recommendations a reality. Our choices and actions, such as food purchases or voicing opinions to local or county representatives on issues impacting our food system, have a real-life effect.
 - b. The Alliance will engage a variety of partners to accomplish the recommended changes within the system.
- 2. Set its future priorities based on the recommendations. The Alliance will approach implementation of its priorities based on a systems perspective. By taking into account how and which recommendations overlap, the Alliance will be able to anticipate how working on one recommendation can potentially affect another or others. The Alliance will develop strategies for accomplishing multiple goals simultanously within the system.
- 3. Recognize the changing dynamics of the county's food system and the need to take emerging issues into account. While this document outlines many of the key components of the Santa Clara County food system, there are other important topics that the Alliance will seek to address more fully in future iterations of the Assessment, including:
 - a. Labor: from field labor to labor connected with the aggregation, processing, and distribution of food
 - b. Education: efforts aimed at building capacity among food system stakeholders, including farmers, laborers, distributors, retailers, and consumers
 - c. Environment: the impact on and benefits provided to the environment by agriculture, and the potential impact that the environment including climate change and water availability—could have on the Santa Clara County food system
 - d. Culture and Food: the various ways in which the food system interacts with and impacts different cultures.

The Alliance considers the Assessment a living document that will continue to evolve over time to reflect the changing nature of our local food system. The Alliance will periodically review this document to update and capture new issues and data so that their work can reflect changing circumstances and the document can remain a relevant source of information for all. Since the Assessment is a document by and for the community, the Alliance invites community members interested in contributing to the evolution of the document to contact the Alliance. Please refer to the contact information on the back cover.

In the meantime, this assessment provides the Alliance a broad snapshot of our system at this point in time for the development of a work plan based on solid data and current conditions.

From the outset, the Alliance acknowledges that building a resilient local food system requires an all-hands-ondeck approach. Respecting that all residents already play a part in this invaluable system, the Alliance calls on the people and governments of Santa Clara County to join us in this effort. From seed to plate, a robust local food system will benefit us all by improving the social and physical well-being of our communities and bolstering our local economy and environment. The Alliance looks forward to working with the greater community to make a positive impact on our local food system so that we may all reap its full benefits.





I. Introduction

I.I What Is a Food System?

All residents of Santa Clara County participate in our food system. A food system includes the entire set of inputs, processes, and activities that bring food from the places where it is produced to our plates. In addition to providing sustenance, the food system has the potential to support the health and well-being of our community members. Food systems, as defined by the Center for Agroecology & Sustainable Food Systems, are "the people and resources involved in producing, processing, distributing and consuming food and managing waste."¹ The creation of a robust, vibrant, and sustainable food system allows us to provide all of our residents with access to culturally appropriate, healthy food resources at affordable prices. In this assessment, we evaluate these four core components of the food system:

Food production includes cultivating plants and raising domestic animals and takes place in both urban and rural areas. Food processing transforms food into value-added food products. It can occur close to the site of production or off-site at places such as commercial kitchens and bakeries.

Food distribution is the process of moving food from sites of food production to places, such as stores, farmers' markets, and cafeterias, where consumers acquire food. Often farm products are transported to intermediate sites, where they undergo processing and packaging, before they are distributed to consumers.

Food consumption involves all the processes through which people acquire, prepare, and use food. Food retail and consumption occur at a wide range of places, including grocery stores, farmers' markets, restaurants, institutions, and home kitchens.

And, finally, the **management of food waste** refers to the various activities involved in handling discarded food materials, which may end up in compost piles, recycling facilities, or landfills.²

In addition, a food system operates within and is affected by social, political, economic, and environmental contexts (Figure 1.1). Awareness of how these forces shape a food system is crucial for guiding efforts to strengthen it. Educational outreach to communities, organizations, agencies, and elected officials raises the level of understanding about how these conditions impact the local food system.

Figure 1.1. Model of the Food System³





I.2 Why a Food System Assessment?

A sustainable food movement has taken root across the country, born out of a growing awareness that the food system impacts our health, our economy, and our environment. Individuals, communities, and organizations are concerned that the current food system contributes to food insecurity, the prevalence of unhealthy foods, diet-related health problems, food safety issues, and the economic concentration of the food industry. Strong local food systems can help to address some of these problems by linking the needs of consumers, producers, and the natural resource base in ways that meet human nutritional needs, strengthen regional economies and self-reliance, and promote environmental stewardship.⁴

A food system assessment can play an important role in meeting the goal of building a sustainable, accessible, effective local food system. Such an assessment looks at the connections between all the elements of the food system—food production, distribution, consumption, and waste disposal—and highlights their impacts on the county's residents, economy, and environment. A food system assessment is designed to be a practical tool, assembling locally specific information that can serve as a foundation for food system change.⁵ By helping us to understand the condition of our current food system and to identify areas of concern as well as areas of strength, a food system assessment informs efforts to set goals, create policies, and take actions that will improve the local food system.⁶

This assessment is a product of the Santa Clara County Food System Alliance. It supports the Alliance's work to identify points in the food system where positive and beneficial changes can be made and to increase community understanding of the food system that serves Santa Clara County. It is also a resource that can be used by others with an interest in developing sustainable food systems. Through a renewed focus on local food systems, we hope that people will gain greater access to locally grown foods, thereby improving nutrition, health, and community food security. Further, by gaining a deeper understanding of how their food is produced, we believe that people will become more aware of how individual and collective choices about food affect human and environmental health and well-being. Finally, growing interest in and demand for locally grown food can provide essential financial support to local agricultural producers, who have been an important part of Santa Clara County's history, culture, and economy for more than 150 years.

I.3 Goals of the Assessment

This food system assessment has two main purposes. First, the Assessment is an educational tool. It provides a comprehensive overview of and baseline information about the Santa Clara County food system to the Santa Clara County Food System Alliance, local policy makers, and interested community members. We have tried to select indicators that highlight the connections between the elements of the local food system and several areas of interest: the well-being of communities throughout Santa Clara County, the viability of agriculture in the county, and the health of local ecosystems. By updating this data in the future, we can track changes in the county's food system over time.

Second, by identifying areas where positive changes can be made, the Assessment is a basis for taking action to improve our county's food system. In Chapter 7, we have made recommendations that we believe can contribute to a more robust food system in Santa Clara County—one that includes viable agricultural production on both urban and rural lands; retail, direct-marketing, and institutional venues that offer locally produced food; and healthy and affordable food for all residents of our county.

In addition to these overarching objectives, our work has been guided by the Santa Clara County Food System Alliance's four main goals: enhancing community engagement and education; improving access to a healthy, affordable food supply; strengthening agriculture and food system viability; and advancing environmental stewardship. These goals are explained in more detail below.

I.4 The Santa Clara County Food System Alliance

The Santa Clara County Food System Alliance⁷ (the Alliance) is a collaborative of stakeholders who are concerned with issues of healthy food access, agricultural production, and food distribution in Santa Clara County. It has 25 members representing rural and urban agriculture, health, food security, County government, education, business, and the environment. The Alliance was formed in 2011 with the support of the Health Trust, a charitable foundation dedicated to transforming Silicon Valley into the healthiest region in America. The Alliance grew out of the Silicon Valley Food System Collaborative, which was a group convened by the Health Trust to promote a sustainable, regional food system in the South Bay and address concerns about health, access to healthy food, and loss of agricultural land in the region. The Alliance is facilitated by the Ag Innovations Network. To attain a vibrant, robust, and sustainable food system, the Alliance has four main goals:

- Enhance community engagement and education. Increase awareness of the importance of food choices, food access, and the role of community members in creating a healthy food system.
- Improve access to a healthy, affordable food supply. Ensure that all residents are food secure and have access to sufficient, affordable, healthy, and whenever feasible, locally grown food.
- Strengthen agriculture and food system viability. Create a resilient food system that ensures the long-term economic sustainability of agricultural and ranching operations in the county, including but not limited to a robust regional infrastructure, a dependable network of food system workers, and access to viable land.

 Advance environmental stewardship. Ensure (1) the protection and preservation of farm and ranch lands, and (2) the conservation of natural resources, such as soil, air, water, and natural habitat, to sustain the long-term viability of both agriculture and the environment.

In addition to undertaking the Santa Clara County Food System Assessment, the Alliance has two committees to carry out preliminary work: one on agriculture and food system viability, and the other on food access issues. These committees will make recommendations for further consideration and consensus by the full Alliance membership.

1.5 Scope and Methodology

To guide our study of the Santa Clara County food system, we collected potential indicators from other California food system assessments, particularly Assessing the San Diego County Food System (2010). We modified this initial list of indicators to fit the unique circumstances in Santa Clara County and the goals of the Santa Clara County Food System Alliance. Most of the data in this assessment comes from secondary sources. It has been collected from federal, state, and local agencies as well as from other organizations working on food issues in the region. The chapters on production and distribution include some primary data, which comes from interviews and surveys that members of the Alliance conducted with local farmers. For more information about those interviews, please see Appendix A. Data sources are indicated with endnotes throughout the text, both as a reference for readers and to assist with tracking these indicators in the future. Because the goal of this study is to enhance our understanding of the entire Santa Clara County food system, we focused on gathering data at the county level. However, in some cases, the best available data existed for a geographical or demographic subset of the county (e.g., the city of San José) or for the broader region (e.g., the Bay Area or the Central Coast).

Creating this assessment was a collaborative endeavor by the members of the Santa Clara County Food System Alliance. Many Alliance members contributed, some by writing portions of the Assessment and others by providing data. At monthly meetings in the fall of 2012, Alliance members gave feedback on the content, organization, and direction of successive drafts of the Assessment. Once a draft was completed, the Assessment was sent out to a wider group of stakeholders for their review and comment. This feedback was incorporated into the final version of the Assessment. In spring 2013, the Alliance reviewed recommendations that were developed from the Assessment and brainstormed what conclusions to draw from them. Finally, at two monthly meetings in summer 2013, the Alliance discussed and agreed to an outline for the conclusions and then reviewed and approved the completed Conclusion chapter (Ch. 7).

2. Santa Clara County

In this chapter we present an overview of Santa Clara County and its agricultural sector in order to provide some background for the evaluation of local food production, distribution, consumption, and waste management that follows. We introduce the area's geography, which has made it a prime site for both agriculture and urban development. We describe the county's current population and economy, paying particular attention to farmers and farms. We trace its history, from a landscape carefully tended by the Ohlone to one of the nation's leading agricultural centers to a region known internationally for technological innovation and development. To frame our discussion of the local food system, we also introduce the land-use policies that shape how and where food in Santa Clara County is produced and acquired. In conclusion, we outline some of the key challenges and opportunities for a robust, vibrant, and sustainable local food system in Santa Clara County.

2.1 County Profile

Geography. With an area of 1,315 square miles, Santa Clara County is the second-largest county in the nine-county San Francisco Bay Area (Figure 2.1).⁸ The fertile Santa Clara Valley is at the center of the county, ringed to the east by the Diablo Range, to the west by the Santa Cruz Mountains, and to the northwest by the Baylands. The Santa Clara Valley floor is where most of the county's remaining cropland is located. Covering the eastern half of the county, the Diablo Range consists mainly of grasslands, chaparral, and oak savannah and is used primarily for cattle grazing. The Santa Cruz Mountains contain rolling grasslands and oak-studded foothills, along with mixed hardwoods and

dense evergreen forests, redwood forests, steep slopes, and active earthquake faults. Limited timber harvesting takes place on private lands in the Santa Cruz Mountains. The Baylands, which border the southernmost portion of San Francisco Bay, consist mostly of vast salt evaporation ponds, remnant areas of salt marsh, and wetlands where restoration is underway.⁹

Santa Clara County enjoys a temperate, Mediterranean climate. Over the year, average daily high temperatures range from 55–77 degrees Fahrenheit in the winter to 65–82 degrees Fahrenheit in the summer. Rainfall, which occurs primarily between November and April, ranges from an average of 15 inches annually in San José to more than 40 inches annually in the Santa Cruz Mountains.¹⁰



Heavily urbanized over the last 50 years, Santa Clara County is made up of 15 cities and towns as well as large unincorporated areas. The North Valley, which is home to 13 of Santa Clara County's 15 cities and 88 percent of county residents, is extensively urbanized. The South Valley remains predominantly rural, with the exception of Gilroy and Morgan Hill.¹¹

People. In 2010, the population of Santa Clara County was an estimated 1,781,642, making it the most populous county in the Bay Area and the sixth most populous county in the state.¹² With an estimated population of 971,372, San José is the largest city in the Bay Area, the third-largest city in California after Los Angeles and San Diego, and the 10th-largest city in the United States.¹³

Santa Clara County's population has been growing at a rapid rate since the 1950s. Most recently the population grew by 6 percent between 2000 and 2010, adding 99,057 people, mainly in North Valley cities.¹⁴ This growth is expected to continue, so that Santa Clara County is projected to have a population of 2,431,400 in 2035 (which represents a 36 percent increase from 2010).¹⁵



Figure 2.2. Population by Race/Ethnicity in Santa Clara County, 2012

People of diverse national and ethnic backgrounds call Santa Clara County home. As illustrated in Figure 2.2, Santa Clara County's population is majority-minority, meaning that no racial or ethnic group makes up a majority of the population.¹⁶ Thirty-seven percent of county residents were born outside the United States, and more than half speak a language other than English at home. About 60 percent of foreign-born residents emigrated from Asia and about 30 percent from Latin American counties.

The agricultural sector is less diverse than Santa Clara County's population as a whole, but farmers in Santa Clara County are much more diverse than farmers nationwide, as shown in Figure 2.3.¹⁷ According to the most recent U.S. Department of Agriculture (USDA) Census of Agriculture from 2007, 79 percent of the farm operators in Santa Clara County were white, 10 percent were Hispanic or Latino, and 9 percent were Asian. There were seven farm operators who were American Indians or Alaska Natives, seven who were Native Hawaiians or other Pacific Islanders, and 12 who identified as having more than one race. No African American farm operators were reported.

Slightly more than a third of farm operators were women, but they are the principal operators of only a fifth of all farms in the county. The average age of a principal farm operator was 59.3 years, compared with a national average age of 57.1 years.¹⁸ The average age of principal farmers has steadily risen for years, a trend that concerns many nationwide.





Economy. Manufacturing, educational services and health care, and professional and business services are the three largest industries in Santa Clara County. Less than one percent of the employed population works in agriculture.¹⁹ Between 2007 and 2011, Santa Clara County's median household income was \$89,064, and the average per capita income was \$40,698 annually.²⁰ Santa Clara County's median household income is nearly 45 percent higher than the state median (\$61,632) and was ranked one of the highest in the nation in 2006.²¹

Although Santa Clara is one of the wealthier counties in the United States, there are still large pockets of poverty. And since the start of the Great Recession in 2007, poverty has been on the rise. In 2010, 186,051 people, or roughly 11 percent of the population, lived at or below the federal poverty level. More than 56,500 of those living in poverty were children, which equals roughly 13 percent of the county's youth population. Because of the high cost of living in Santa Clara County, the federal poverty level—a uniform national measure based only on the cost of meeting minimum nutritional needs—fails to capture all of the county residents who are struggling financially. As an alternative, the Self-Sufficiency Standard is a county-specific measure of the actual cost of living.²² In 2008, when the federal poverty level was \$17,170 for a family of three, the Self-Sufficiency Standard for Santa Clara County was \$58,512 for a family of three (two adults and one infant).²³ That year, a quarter of all households in the county did not meet the Self-Sufficiency Standard.²⁴ Across the Bay Area, Latino and African American households are more likely to have insufficient incomes to meet their basic needs than whites.²⁵

The self-sufficiency standard for a family of three rose across California from 2008 to 2011, but the largest increases in the state were in Contra Costa and Santa Clara Counties, which both saw the cost to meet basic needs rise 21 percent.²⁶ In 2011, an adult would need to work more than four full-time minimum wage jobs to meet the basic expenses for a family of three (\$77,973). And for a family of four (two adults, a preschooler, and a schoolaged child) in Santa Clara County, the Self-Sufficiency Standard was \$83,640, just slightly below the median household income for the county.²⁷ The cost of food for such a family—estimated to be \$852 per month—consumes more than 12 percent of household income on average. Because the federal policy level determines eligibility for many public benefits, the Self-Sufficiency Standard reveals that many families earn too much to qualify for public programs but not enough to make ends meet.²⁸

Agriculture. The U.S. Department of Agriculture currently defines a farm as any place from which \$1,000 or more of agricultural goods (crops or livestock) were sold or normally would have been sold during the year under consideration. According to the 2007 Census of Agriculture, Santa Clara County was home to 1,068 farms, with a total of 1,692 farm operators. Many of the farms in Santa Clara County are small; just under half are one to nine acres in size (see Figures 2.4 and 2.5). Forty-seven percent of principal operators in Santa Clara County reported that farming was their primary occupation, and 53 percent of principal operators reported that their primary occupation was something other than farming. This data suggests that about half of farmers are able to make their living from their agricultural operations, while the other half support their operations with outside income. Some farmers may also get off-farm jobs for the benefits they provide, such as health insurance. In 2007, 841 farms representing 131,709 acres were owned outright in Santa Clara County, and another 106 farms on 133,636 acres were partly owned. Part owners operate a combination of land that they own and land that they rent from others.²⁹

Latino and Asian growers in Santa Clara County operated smaller-than-average farms; on average, farms operated by Latino growers were 103 acres and farms operated by Asian growers were 43 acres, compared with a county average of 281 acres across all operators. However, both Latino and Asian growers realized an average market value of product sales over \$400,000, compared with a county average of only \$220,000.









Figure 2.5. Changes in Average Farm Size for Santa Clara County and California, 1978–2007

History: From the Valley of Heart's Delight to Silicon Valley. Santa Clara County's economy, landscape, and food system have changed profoundly over the past 250 years. The Ohlone, the region's first inhabitants, moved between ecosystems throughout the year to harvest a wide variety of seasonally available food resources. While the Ohlone took part in regional trade networks, they harvested, processed, and consumed most of their food locally.³⁰ Domestic agricultural production in the Valley began in 1777 when Spanish missionaries first planted fruit trees and vineyards to supply the Mission of Santa Clara de Asis. Small-scale, subsistence agriculture took place around the mission, until failed miners realized that Santa Clara Valley's fertile soil, moderate climate, and abundant water were California's real gold. Stone fruit orchards, with their beautiful springtime blossoms, soon dominated the landscape, earning Santa Clara Valley the title of "Valley of Heart's Delight."

By the late 19th century, Santa Clara County was a leading producer of apricots, cherries, grapes, pears, and prunes. Canning facilities, which were established in the 1870s, gave growers another outlet for their produce. Soon the Santa Clara Valley was the largest fruit canning and dried-fruit packing center in the world. Anecdotal evidence suggests that by the 1920s, there were over 125,000 acres of fruit and nut trees in Santa Clara County. Until World War II, Santa Clara County grew one-third of the stone fruit produced in the United States.³¹ During this time, the Santa Clara Valley also led the nation in vegetable and flower seed production. Agriculture continued to dominate the local economy, and orchards continued to dominate the local landscape through the mid-20th century. When adjusted for inflation, Santa Clara County's agricultural production value peaked in 1946 (see Figure 2.6).³²



Figure 2.6. Consumer Price Adjusted Value of Agricultural Commodities from 1940 to 2005

After World War II, Santa Clara County's economy shifted from agriculture to manufacturing, its urban population expanded dramatically, and the valley landscape was transformed from farms and orchards to subdivisions. Similar changes occurred throughout California and the Bay Area, but they were especially pronounced in Santa Clara County. The Second World War opened up new employment opportunities in research, manufacturing, and the military around the Bay Area. Between 1950 and 1955, 126 plants opened in Santa Clara County.³³ New manufacturing jobs drew a wave of migration to the region. Over the same five-year time period, one-third of new Bay Area residents settled in the Santa Clara Valley, causing the county's population to grow by nearly 57 percent.

New arrivals needed housing and services, and much of the South Bay's agricultural land was snatched up for subdivisions. Between 1950 and 1955, 25 square miles of prime orchard lands were turned into subdivisions. Thus new economic opportunities and population growth drove major land-use changes, particularly the loss of farm-land to urban and residential uses, as shown in Figures 2.7 and 2.8. Beginning a trend that continues to this day, soaring land values threatened the economic viability of even those crops that grew better in Santa Clara County than anywhere else. As subdivisions and cities expanded in a haphazard fashion, a great deal of high-quality agricultural land was lost, and the farmland that remained became so fragmented that as early as the mid-1950s people were worried about the future viability of agriculture in the region.³⁴

Today, Santa Clara County has transformed again into "Silicon Valley," the geographic center of technological innovation and development in the United States. Local technological advances combined with a culture of entrepreneurship have created hundreds of firms, groundbreaking products, and great wealth. The number of technology firms in Silicon Valley has grown from about 100 in 1959 to 840 in 1975 to more than 3,200 in 1990. Along the way, Silicon Valley has produced the semiconductor, the microprocessor, the personal computer, search engines, and social networking platforms. Today, Silicon Valley is recognized as the leading hub for the global high-tech sector and is home to such companies as Apple Computer, Google, Intel, Cisco Systems, Oracle, Facebook, and Yahoo!.³⁵



Figures 2.7 and 2.8. Changes in Land Use: Agriculture vs. Population from 1945 to 2010

2.2 Land-Use Policies

The development patterns that began after World War II and continue to this day pose a challenge to agriculture in Santa Clara County and around the Bay Area. Development pressure at the urban edge has driven land prices up significantly, creating an economic incentive for some farmers to sell their land because it is worth more as the site of future development than as a place for agricultural production. Higher land values also make it difficult for farmers who wish to stay in agriculture to expand their operations and for new farmers to enter the industry.³⁶ Furthermore, the poorly planned development that took place as cities raced to annex undeveloped land, along with extensive growth in county unincorporated areas, has fragmented the agricultural lands that remain. Without a critical mass of farmers and ranchers in the same area, it becomes much harder to support the services (e.g., tractor dealers, large-animal veterinarians) that their operations depend on. Having agricultural and residential land uses in close proximity can also create friction between suburban residents and farmers.³⁷

In the face of these development pressures, local and county officials have a variety of policy tools they can use to preserve agricultural land and to help maintain the economic viability of local agriculture.

Urban Service Areas. To combat sprawl and promote the efficient delivery of urban services, the state legislature established the Local Agency Formation Commissions (LAFCOs) in 1963. LAFCOs, which operate in almost every county, are local agencies that oversee the boundaries of cities and special districts with the goals of discouraging urban sprawl and preserving agricultural and open space lands.³⁸

In 1973, countywide urban development policies were incorporated into Santa Clara LAFCO's policies and guidelines. The Urban Development/Open Space Plan acted as a framework for urban growth management policies. The new plan explicitly rejected expansion of urban development into remaining valley agricultural lands and hillsides. The basic premise of the new policies was that (1) urban development should occur only within formally adopted urban service area boundaries and (2) cities should plan for orderly, efficient urban development. The agreement included the following provisions: urban development should occur only within cities; no urban development is to happen in unincorporated areas; cities adopt urban service area (USA) boundaries to guide the timing and location of urban development; LAFCO is to adopt city urban service area boundaries; and all changes in USAs must be approved by LAFCO. These urban development policies and urban service area boundaries have been the single most important factor in maintaining agriculture in Santa Clara County over the past 40 years.

Williamson Act. After almost two decades of losing farmland to urban development following World War II, Santa Clara Valley farmers began to look for legislative solutions to this problem at the state level. Santa Clara County farmers and County staff were instrumental in the development and approval of the California Agricultural Land Conservation Act of 1965, commonly referred to as the Williamson Act. The Williamson Act protects agricultural land by providing tax incentives to property owners who agree to keep their land in agricultural production for a 10-year period. Enrolled lands are assessed based on their agricultural value rather than the market value. In Santa Clara County, where development pressure is high, an agricultural land valuation can result in a significantly smaller property tax bill. Because of large state budget deficits, in 2009 the State stopped reimbursing counties for the tax revenue they lose when landowners participate in this conservation program, though Santa Clara County has continued to fully fund the contracts.³⁹ Lands enrolled in the Williamson Act in Santa Clara County have decreased over time as agricultural acreage shrunk and farmland was converted to other uses. Nonprime lands, typically used for grazing, represent the lion's share of Williamson Act lands in the county. In 2009, 10,189 acres of prime farmland and 296,362 acres of nonprime lands were enrolled in the Williamson Act in Santa Clara County (Figures 2.9 and 2.10).⁴⁰





Agricultural Zoning Designations. The Santa Clara County General Plan establishes two farmland designations—Agricultural Large Scale and Agriculture Medium Scale—that are meant to help protect farmland from urban development. Minimum parcel sizes in agriculture areas are 40 acres for large-scale agriculture and 20 acres for medium-scale agriculture. County lands designated as agricultural may be used for the following: "agriculture and ancillary uses; uses necessary to directly support local agriculture; and other uses compatible with agriculture which clearly enhance the long-term viability of local agriculture and agricultural lands."⁴¹ The County's "Hillsides" and "Ranchlands" land-use designations allow agricultural and grazing uses. In 1998, the County revised zoning requirements for agricultural areas to allow additional processing and agriculture-serving uses and to discourage or limit uses incompatible with long-term agriculture.

Right-to-Farm Ordinance. Agricultural practices and agricultural lands under the jurisdiction of Santa Clara County and the City of Morgan Hill are protected by right-to-farm ordinances. A right-to-farm ordinance is a statement of policy that ongoing agricultural practices conducted in a manner consistent with accepted customs and practices should not be deemed a nuisance to nearby residences.⁴² Enacted in the 1990s, both the County's and the City of Morgan Hill's ordinances are a response to the problem of urban growth encroaching on adjacent farm operations. Such measures have reduced the opposition of urban neighbors. **Urban Growth Boundaries.** In the 1990s, cities in Santa Clara County began establishing 20-year planning boundaries, also known as Urban Growth Boundaries (UGB), as another tool for managing growth. Although lands outside these boundaries could eventually become eligible for urbanization, they give farmers and other rural landowners a more realistic basis for assessing future land-use options.

Agricultural Mitigation. The purpose of agricultural mitigation policies is to lessen the impact of farmland conversion to urban uses. Developers who convert agricultural land are required to pay fees, which are used to conserve agricultural land elsewhere.⁴³ In Santa Clara County, agricultural mitigation policies were adopted by the City of Gilroy in 2004 and by Santa Clara LAFCO in 2006. Gilroy's policy allows for three methods of mitigation: (1) purchase an amount of agricultural land equal to that which was converted to urban use, (2) purchase the development rights on agricultural land based on a 1:1 ratio, or (3) pay an in-lieu fee based on the lowest appraisal of development rights. To date, three projects totaling 64 acres have been determined to be worthy of mitigation under Gilroy's policy, and in each case, developers have opted to pay the in-lieu fee. Mitigation lands for these projects have not yet been purchased by the City of Gilroy. LAFCO's policy also calls for a 1:1 mitigation ratio but applies only to cities without an agricultural mitigation policy, the City of Morgan Hill began developing agricultural mitigation policy, the City of Morgan Hill began developing agricultural mitigation policy.



photo credit: Nancy Barrera

City and Regional Plans. Local land-use policies affect the location and size of healthy food resources. General plans, which "set a broad policy vision for development in a community," and zoning, which determines "what can and cannot be built and what activities can or cannot take place," present cities with an opportunity to adopt or enact policies and programs that encourage healthy food resources.⁴⁴ For example, the Gilroy General Plan encourages agriculture in undeveloped areas within the city boundaries. In contrast, Sunnyvale has a zoning ordinance that prohibits owners of agricultural lands from permitting activities, such as emission of dust, noise, or odor, that are offensive or create a nuisance to people on adjacent properties.⁴⁵ To give residents more opportunities to buy healthy, affordable produce, the City of San José recently passed an ordinance making it easier to open farmers' markets and requiring all farmers' markets on private land to accept food assistance benefits.⁴⁶ At a regional level, California's Sustainable Communities and Climate Protection Act of 2008 (SB 375) requires regions in California to develop a plan for meeting greenhouse gas reduction goals by integrating land use, transportation, and housing plans. By attempting to limit suburban sprawl, this law could also promote agricultural land conservation.

2.3 Challenges and Opportunities

Continued Loss of Farmland. Between 1984 and 2000 the Bay Area as a whole lost more than 200,000 acres, or 8 percent, of its agricultural land (both farmland and ranchland). Of the nine Bay Area counties, these losses were greatest in Santa Clara County, which lost 45 percent of its farmland over that period.⁴⁷ According to a recent report by Greenbelt Alliance, the region could lose an additional 15 percent of its farmland and 7 percent of its grazing lands over the next 30 years.⁴⁸ Their research identifies southern Santa Clara County (along with central Sonoma County and eastern Contra Costa County) as one of three areas in the Bay Area most at risk for losing agricultural land to development.⁴⁹ In Santa Clara County, 15,285 acres of farmland, or 55 percent of the county's farmland, is at risk for development—the highest percentage of any Bay Area county. As much as 28,630 acres, or 7 percent, of the county's rangeland is at risk for development.⁵⁰

As these numbers show, despite the efforts to control urbanization through land-use policies, agricultural land is still dwindling in Santa Clara County. Development pressures and rising land values, which continue to create a powerful incentive for agricultural landowners to sell their land or convert it to other, more lucrative uses, are unlikely to subside.⁵¹ For instance, the Association of Bay Area Governments projects that Santa Clara County will receive the largest share (32 percent) of the region's total population growth by 2035.⁵² Future infrastructure projects, including California's high-speed rail system, could also further fragment, develop, or jeopardize existing farmland.⁵³

Urban/Rural Interface. Growers in Santa Clara County face challenges due to the urban/rural interface that are not present in more rural areas. Although the Farmland Map and Monitoring Program identifies 27,751 acres of farmland in Santa Clara County, farms in Santa Clara County are interspersed among uneven and unpredictable city limit lines, rural residential homes, subdivisions, unincorporated areas with thousands of people, and other incompatible land uses. Although the County has adopted a Right to Farm Ordinance, growers often receive complaints regarding dust, noise, spraying activities, and unsightly but necessary infrastructure such as portable toilets and hand washing stations for employee sanitation. Moving farm equipment becomes incredibly difficult on roads used for commuter traffic in areas with large populations in the rural part of the county. Very few large lots are available on the valley floor, limiting the economies of scale that can be achieved on large lots.

Many of today's farmers and ranchers in Santa Clara County are from families that began farming farther north in the Bay Area. When talking to multigenerational farm families, it is not uncommon to learn that their grandparents or great-grandparents began farming in South San Francisco, Cupertino, Mountain View, or San José. As urban development became more valued than agriculture in these areas, farmers and ranchers found greener pastures in the southern part of the county. Now that development has increased in that area, growers are looking farther south still, to relocate their farming operations outside the county. Moving operations to allow for development has been a pattern in Santa Clara County and throughout California. Once urban development begins to occur in an agricultural area, the rural/urban interface creates a significant burden for farming operations. Farmers are left with few viable options and may choose to sell their land to developers or develop it themselves. Although many multigenerational farmers believe the end of agriculture is near in Santa Clara County, it is important to note that this perspective is not shared by the new crop of farmers who show an interest in small-scale farms. Indeed, a 2011 study conducted for the City of Morgan Hill states that small-scale agriculture can be viable in South Santa Clara County.⁵⁴ Community farms and gardens, community supported agriculture, niche farming, and other small-scale practices do show promise as more and more young farmers hope to grow local food.



Urban Dwellers' Perception of Agriculture. If the viability of agriculture is allowed to decline, South County's economy and the agricultural land supply will become less secure. Although agricultural production no longer makes up a majority of the economic output of Santa Clara County, it remains an important commercial industry that provides a wide range of environmental, economic, and social benefits. To ensure its continued presence, it is important to build connections between farmers, ranchers, and their urban neighbors. Improving local food distribution systems and developing strategic marketing and branding programs would help to increase consumption of local agricultural products and raise public awareness of the important linkages between urban and agricultural areas. In addition, maintaining support for sound land-use planning and bolstering technical support for farmers and ranchers are some of the key tools that can help support agricultural viability in the county.

Public Health, Food Access, and Regional Planning. Recent public health challenges such as the rise in diabetes rates have encouraged municipalities, communities, and others to make a stronger connection between land-use policies, food production, food access, and health. Food deserts (places with limited access to fresh, healthy, and affordable food⁵⁵), the obesity epidemic, an aging population, and rising poverty rates are focusing attention on the need to increase access to fresh local produce and other healthy foods. Appropriately located, well-planned urban neighborhoods for all income levels that promote healthier, non-automobile-dependent lifestyles within existing urban areas can have significant positive public health impacts and lessen development pressure on agricultural lands.

In addition, state legislation to reduce the emissions that contribute to climate change has spurred improvements in land-use and transportation planning that can also benefit agriculture. California's Sustainable Communities and Climate Protection Act of 2008 (SB 375) requires each region to develop a Sustainable Communities Strategy—an integrated land-use, transportation, and housing plan—to help meet greenhouse gas reduction targets.⁵⁶ The Bay Area's Sustainable Communities Strategy, known as Plan Bay Area, has a goal of directing all nonagricultural development within the existing urban footprint in order to protect agricultural lands and open space.⁵⁷

3. Food Production

What Is a Farmer?

A **farmer** raises crops for sale, such as apples, corn, hay, garlic, walnuts, sunflower seeds, chrysanthemums, and lettuce. Farmers are often called growers because they grow crops. The two terms refer to the same people and can be used interchangeably.

A **rancher** raises livestock such as beef cattle, goats, sheep, or chickens. For the purposes of this assessment, food production means crops and livestock that are raised within Santa Clara County. This includes food crops that are grown in the county and foods like meat, eggs, and honey that are the products of animals raised in the county.

Local food production increases access to fresh, nutritious food, creates jobs, and diversifies the region's economy. It has an economic multiplier effect, enabling farm support businesses to remain profitable and, in turn, sustaining local and regional agricultural economies. With \$247 million in agricultural revenues in 2011, Santa Clara County ranked 28th among California's 58 counties in agricultural production value.⁵⁸ Among Bay Area counties, Santa Clara County has the fourth-highest agricultural production value and is comparable to its more rural neighbor San Benito County, which had \$263 million in agricultural revenues in 2011 (Figure 3.1).⁵⁹ Agricultural production also provides ecosystem services including pollination, groundwater recharge, wildlife habitat, carbon sequestration, and many other environmental benefits.

	Figure	3.1.	20		Crop	Revenue	Compo	arison	with	Nei	ghb	oring	Counties ⁶⁰
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0	1	1	0 0		
	Santa Clara	San Mateo	San Benito	Santa Cruz	
Timber, Field, and	\$6,610,700	\$3,474,000	\$10,060,000	\$2,935,000	
Seed Crops					
Fruit and Nut	\$12,355,800	\$1,666,000	\$35,613,000	\$377,836,000	
Crops					
Vegetables	\$130,138,000	\$16,648,000	\$171,120,000	\$55,801,000	
Livestock and Ani-	\$6,506,000	\$3,790,000	\$29,670,000	\$6,570,000	
mal Products					
Floral and Nursery	\$92,383,400	\$111,431,000	\$16,902,000	\$122,598,000	
Crops					
TOTAL	\$247,993,900	\$137,009,000	\$263,365,000	\$565,740,000	

3.1 Crop Production

Top Crops. Santa Clara County's soils and climate offer opportunities to produce a diversity of crops. Farmers in the Santa Clara Valley have responded to rising land values by transitioning to high-value crops (Figure 3.2). In response to increasing land pressures, some growers have moved indoors; the county's top two crops—nursery crops, valued at \$86.4 million, and mushrooms, at \$61.5 million⁶¹ —tend to be building-intensive, are not generally dependent on native soil, and are often grown in climate-controlled facilities. Santa Clara County is well suited to the production of nursery crops because of its proximity to urban areas with high demand for landscaping materials. Nursery crops include bedding plants, ornamental trees, roses and shrubs, Christmas trees, orchids, indoor decorative plants, turf, vegetable transplants, and more.⁶² Santa Clara County ranks second in mushroom production in California,⁶³ which is the number-two mushroom-producing state in the country behind Pennsylvania.⁶⁴ In 2011, Santa Clara County boasted 26 crops with a production value over \$1 million.



Figure 3.2. Gross Value of Agricultural Production from 1940 to 2010

Vegetables. Peppers are the highest-value outdoor crop in Santa Clara County. Some of the leading pepper processors in the state are based in Santa Clara County, due in part to favorable climate conditions, demand for spicy vegetables from Bay Area ethnic populations, and early successes in growing peppers that encouraged support infrastructure. In 2011, \$11.3 million worth of bell peppers were grown on 1,466 acres, and \$6.5 million worth of wax and chili peppers were grown on 612 acres.⁶⁵ Other high-value crops include lettuce (\$6.4 million from 1,244 acres), salad greens (\$5.4 million from 1,052 acres), fresh tomatoes (\$8.6 million from 778 acres), processed tomatoes (\$4.1 million from 1,060 acres), and Chinese vegetables (\$4.0 million from 410 acres). Though Gilroy is known as the garlic capital of the world, only 232 acres of garlic were harvested countywide in 2011, accounting for \$684,000 in agricultural production value.⁶⁶ Despite declining garlic production, Gilroy remains the leading garlic processing center in California and the nation.⁶⁷

Tree Fruits. Santa Clara County is still home to its once-famous fruit trees, but the current acreage of fruit and nut trees is just 2.6 percent of what it was at the start of World War II (Figure 3.3). In 2011, Santa Clara County growers harvested 476 acres of cherries, 225 acres of apricots, 164 acres of walnuts, and 241 acres of miscellaneous tree fruits, including apples, pears, nectarines, olives, peaches, persimmons, and plums.⁶⁸ Santa Clara County still has over 900 acres of cherries, though spring rains may prevent cherry growers from harvesting a portion of the crop.⁶⁹ Prunes, once a dominant crop in the Santa Clara Valley, have largely disappeared as changing consumer preferences and new technologies (such as refrigeration) have led to a reduction in the consumption of dried fruits and driven a shift toward the production of other crops.





Wine Grapes. Santa Clara County was one of California's early wine producing regions.⁷¹ Today the county has over 60 wineries⁷² and harvested 1,546 acres of wine grapes in 2011. The region mostly grows red varietals, and many wineries supplement their wine offerings with white wine grapes from cooler regions such as Monterey County. In 2011, 1,141 acres of red varietals were harvested along with 405 acres of white wine grapes.

Berries. Though Santa Clara County berry growers do not rival their neighbors in the Watsonville area, they grow enough berries for locals to enjoy at fruit stands. There were 70 acres of strawberries and 21 acres of bushberries harvested in 2011, with a combined value of \$1.5 million.⁷³

Field Crops. The primary field crop in Santa Clara County is grain hay, which is typically grown without the use of irrigation. Grain hay has become a dominant crop in areas of the county where residential parcels are too large to be landscaped and landowners lease their lots to local hay growers in exchange for managing the lands. In 2011, hay worth \$1 million was harvested on 3,508 acres. The 2011 Crop Report also shows 465 acres of irrigat-ed pasture and 390 acres of alfalfa and other field crops.⁷⁴ Alfalfa, a perennial that is irrigated with sprinklers or flooding, is a higher-value feed crop than grain hay.

Other Crops. In 2011, 556 million board feet of timber, valued at \$300,400, were harvested in Santa Clara County.⁷⁵ Vegetable and flower seed crops—once extensive in Santa Clara County⁷⁶—were harvested on 612 acres and worth \$2 million in 2011.⁷⁷ Chrysanthemums were big business in Santa Clara County until trade agreements increased international competition.⁷⁸ Today, 1.3 million square feet of greenhouses are still dedicated to mums, which accounted for \$1.2 million in revenue in 2011. Other cut flowers—including asters, carnations, delphiniums, eucalyptus, gardenias, lisianthus, snapdragons, stephanotis, and sunflowers—brought in \$4.8 million in 2011.⁷⁹

3.2 Livestock Production

Beef Cattle. The beef cattle industry is the primary livestock industry in the county. In 2011, Santa Clara County had 213,101 acres of rangeland, which account for more than a quarter of the county's total area.⁸⁰ County ranchers sold 6,735 steers and heifers as well as 1,108 cows and bulls in 2011. That year the total value of the county's beef industry was \$6.2 million.⁸¹



Santa Clara County is home to some of the world's leading producers of agricultural seeds. Gilroy boasts three locations of Syngenta, a Swiss company that ranks third in total sales in the worldwide commercial agricultural seeds market. Morgan Hill is home to the headquarters for Sakata Seed America, a Japanese-based world leader in breeding and producing vegetable and ornamental seed and vegetative cuttings. Seeds are developed at these sites, and the companies work with local growers to reproduce the seed for commercial sale.

Beef cattle have long been a part of agriculture in Santa Clara County, with the Diablo Range providing forage for beef cattle for over a hundred years. Due to its steep slopes, rolling hills, and soil types, much of Santa Clara County's undeveloped land is best suited for rangeland beef cattle production. The Mediterranean climate and good rangeland soils provide excellent forage.

Historically, the foundation for the Bay Area's beef cattle industry has been the cow-calf operation. In a cow-calf operation, the rancher keeps a permanent herd of cows that produce young beef cattle, which are usually sold once they have been weaned. Cows are raised and grazed year-round, often on a mix of property that is owned by the rancher or leased from another rancher or public landowner. Today, many ranchers manage both cow-calf herds and stocker operations, in which calves are purchased, grown to a heavier weight, and then sold.

It should be noted that whether forage in Santa Clara County is used to provide year-round feed to a breeding cow herd or seasonal feed to a stocker or growing animal, its seasonal quality and availability limit opportunities to develop beef cattle animals to market weight. Cows typically calve on Santa Clara County rangelands each fall, producing one calf a year. The calves are weaned and removed from the rangeland in the spring as both forage quality and quantity become limiting. Weaned calves are often sold and become stockers on forage elsewhere or feeders to be finished in a feedlot. Most stockers will also eventually be finished in a feedlot but can be finished on grain or forage (grass finished). There are no confined-animal feeding operations in Santa Clara County. Although there is some summer forage in California—i.e., irrigated pasture, mountain meadows, and a few feedlots in central and southern California—most cattle will be moved out of state to reach market weight and for processing into beef products and by-products. Stockers arriving for winter-spring seasonal grazing on Santa Clara County's rangelands are often from spring calving cows raised outside of California. They may be coming from the Midwest, Mexico, or even Hawaii.

The number of beef cattle peaked in Santa Clara County in 1955 at 51,500 head, as shown in Figure 3.4.⁸² Numbers have steadily declined since that time, due in part to urban encroachment, conversion of rangeland to other agricultural uses, and reduced margins throughout the beef industry. Perhaps the most significant loss of working rangelands has come about through public acquisition of rangeland for parks and open space. In the mid-1990s, several ranches were converted to nonagricultural use by public acquisition for open space or parks. The most prominent example is the 87,000-acre Henry W. Coe State Park, much of which was occupied by working cattle ranches prior to acquisition but is no longer grazed.⁸³ Although some public agencies managing open space and park land have accepted livestock grazing as an integral part of land management, their managers have typically reduced historical stocking rates and in some cases moved to seasonal grazing, which has resulted in fewer cowcalf operations. Also in the mid-1990s, drought conditions forced ranchers to reduce their herds or transport them to pastures elsewhere in California or Oregon. Although ranchers returned their cow herds to the Bay Area when the grass began to grow again, some of them never rebuilt their cow herd size. According to the Santa Clara County Department of Agriculture, the number of cattle grazing in the county has dropped by approximately 50 percent (17,000 head to 8,000 head) since the mid- to late 1990s.⁸⁴

Santa Clara County's contributions to beef cattle production and the continued sustainable use of cattle grazing for land management in Santa Clara county depends on the availability of feed—namely forage—and infrastructure, which includes feedlots and processing plants outside of the county and state.



Figure 3.4. Head of Beef Cattle from 1940 to 2005⁸⁵

Historical Perspective. According to annual crop reports, Santa Clara County's animal industry was more diverse in the mid-20th century. In the 1940s, it included beef cattle, swine, sheep, broilers, turkeys, and chicken and turkey eggs. In 2011, miscellaneous livestock production, including chicken eggs, goats, llamas, pigs, sheep, etc., was valued at \$271,000 in Santa Clara County.⁸⁶

Poultry. A booming poultry industry sold over 1.5 million broilers and 2.5 million chicks in 1940 and by 1950 those numbers had increased to 1.9 million and 5 million, respectively. After reaching nearly 6 million chicks in 1955, poultry production declined sharply; only half a million chicks were sold in 1960. Until 1970, sales of broilers held steady at about 1 million annually, but by 1975 only 34,000 broilers were produced.⁸⁷ Poultry production has since dwindled to one small commercial chicken egg farm and several hobby farms.



Dairy. The dairy industry in Santa Clara Valley once thrived due to its proximity to population centers. In 1940, there were 303 dairies in Santa Clara County, but by 1962 that number had dropped to 95 as part of a statewide trend toward consolidation in the dairy industry. Despite a marked reduction in the number of dairies, the number of head hovered between 20,000 and 25,000 during that period.⁸⁸ Facing fierce regulatory pressure, dairies in Santa Clara County experienced further consolidation and closures until the last dairy closed its doors in the mid-2000s.


3.3 Urban Agriculture

Urban agriculture represents a number of types of agricultural production, including vegetable, fruit, flower, honey, egg, and animal production, distribution, and consumption within cities. Urban agriculture has been continuously present in U.S. cities since the 1890s in many forms, including home gardens, school gardens, community plot gardens, relief gardens, job-training gardens, and horticultural therapy gardens. Gardens have served as a tool to improve urban conditions, especially during times of economic crisis, when gardens have expanded to city or nationwide projects, such as the victory gardens that were common during World War II.⁸⁹ Urban agriculture contributes to community food security by increasing access to fresh, healthy foods. It provides a host of other benefits as well: increasing consumption of fresh produce; freeing some household food dollars for other expenses; providing a source of exercise and mental relaxation; creating safe, healthy, green environments in urban areas; and building social capital in urban neighborhoods.⁹⁰

In Santa Clara County, urban agriculture takes many different forms, including home gardens, community gardens, community farms, and school gardens. New spaces at the interface of urban and rural areas may provide a significant increase in land available for farming.

Building an Urban Agricultural Network

The Silicon Valley Health Corps, an innovative partnership with the Health Trust, AmeriCorps, and 10 local organizations, aims to improve community health by providing ongoing garden-based nutrition education to youth in Santa Clara County. HealthCorps member volunteers work to increase the availability and affordability of locally grown produce through the development of new community and school gardens, low-cost farm stands, and community supported agriculture (CSA) programs. The 24 members of the Health Corps are creating a strong network to promote urban agricultural education and outreach.

Agricultural Parks on the Urban Edge. A new form of agriculture is starting to appear: agricultural parks at the urban edge. Sustainable Agriculture Education (SAGE) describes agricultural parks as areas that are "designed for multiple uses that accommodate small farms, public areas, and natural habitat. They allow small farmers access to secure land and local markets; they provide fresh food, and are an educational, environmental, and aesthetic amenity for nearby communities."⁹¹ In Santa Clara County, Martial Cottle Park is a 288-acre property under development as an agricultural park. The park is located in a residential area of South San José that previously was an agricultural farm. The park will provide opportunities for youth agriculture, community gardens, demonstration gardens, and an agricultural marketing area.⁹² Additionally, SAGE recently completed an agricultural feasibility study for the Coyote Valley—an area of 7,408 acres that is mostly farmland, situated between San José and Morgan Hill—to determine the potential for preserving agriculture in this urban edge location.⁹³

Community Farms. Community farms have emerged as a popular new model of urban agriculture. Unlike community gardens, community farms operate as more collaborative enterprises where staff and community members grow food, engage in education about agriculture and food systems, and enhance community development through vocational training. Organizations frequently have the explicit goal of changing the food system. One of the benefits of this model is that it can serve many more community members than the community garden model.

Three community farms operate in Santa Clara County: Veggielution in East San José, Full Circle Farm in Sunnyvale, and Gilroy Educational Gardens in Gilroy. All three have educational and vocational programs and either sell produce to the community or host farmers' markets. Most of the organizations doing this work are nonprofits that have the mission of growing local food and providing garden-based education. One community garden manager explained that community farms may become a more attractive model for cities than community gardens because the benefits are more widespread.

Barriers for community farms include access to land and the much higher cost of providing programming. Fundraising is often a burden, as the time spent "chasing funding" can take away from other potential activities. While community farms do make money from produce sales, these generally do not provide enough funding for the staffing needs. Furthermore, because many of the community farms are on public land, they are constrained in some of their activities.

Community Gardens. Because many urban residents do not have access to land in which to grow their own vegetables, community gardens and community farms play an important role in providing access to affordable fruits and vegetables and engaging urban residents with their local food system. Community gardens allow urban residents to grow their own produce on plots that are generally divided among individuals.

There are many benefits to community gardens, including the consumption of more fruits and vegetables. Community gardens are particularly beneficial in low-income neighborhoods because they can reduce household expenditures on healthy foods and provide healthy foods in areas where access to produce in stores is limited. Benefits go beyond fruit and vegetable consumption, however, as gardeners in Santa Clara County have noted that gardening reduces stress, provides exercise, and helps immigrant communities feel more connected to their birth communities.⁹⁴

Most community gardens in Santa Clara County are in urbanized areas on public land and have been established for a relatively long period. Santa Clara County currently has 28 active community gardens with an estimated 1,250 residents gardening. The City of San José has the largest community garden program, with 18 gardens operating within the city. The City funds a three-quarters-time garden manager who works with the different volunteer management teams at each of the gardens. This contrasts with other cities where gardens are for the most part run by volunteers and nonprofit organizations, although several cities provide land for community gardens (e.g., Sunnyvale and Morgan Hill).⁹⁵



Gilroy Demonstration Gardens is a .75-acre plot of land in the heart of downtown Gilroy. It was initially conceived as a community garden with rented plots but instead became a garden where the whole community could participate, sharing in the work and harvest. They provide education programs with schools and general community members, focusing on teen leadership, school gardens, and education around gardening, health, and nutrition. Community workdays provide opportunities for local residents to work in the garden and "take home dinner." Gilroy Demonstration Gardens is largely run by volunteers but has several income generating opportunities to support programming, the largest being a weekly farmers' market located on the site.

A 2010 study by ChangeLab Solutions identified several barriers to participation in community gardens in Santa Clara County, the most significant of which is their long wait lists.⁹⁶ The average wait list for space in community gardens in Santa Clara County was 46 people long, indicating that demand for community garden plots greatly exceeds available space. Another barrier is the yearly fee, which is \$56 on average. While not exorbitant, this fee may be a deterrent for some residents. Another potential barrier for low-income participants is that most community gardens do not allow the sale of produce, although many do encourage the donation and sharing of produce. Few community gardens offer garden-based programming such as gardening courses, plant sales, or seed exchanges. **School Gardens.** School gardens are defined as intentional plantings for the benefit of students. They range in size from a few garden beds to designated areas of the schoolyard. A growing body of literature on the positive effects of school gardens on children has found their benefits to include the improvement of overall academic performance, the social development of the individual student, strengthening of the school community, and increasing nutritional and environmental awareness.⁹⁷ For instance, a study by researchers at UC Davis found that nutrition education lessons complemented by school garden activities increased elementary school students' knowledge of nutrition and their preference for vegetables.⁹⁸ School garden programs and curricula strive to build on models of hands-on, problem-based environmental science education and promote a sense of connectedness, wonder, and exploration.

Since the California Department of Education launched the Garden in Every School initiative in 1995, the state government has made an effort to promote school gardens across California. A 2002 California Department of Education survey found that at least 24 percent of California schools had a school garden.⁹⁹ Gardens were more frequently reported in elementary and K–8 schools than in secondary schools. A large majority of the principals (89 percent) surveyed in that study viewed academic enhancement as the purpose of the garden in their school. Teachers were most frequently responsible for managing the garden program, and the subjects most frequently taught in the school gardens were science, environmental studies, nutrition, language arts, and math.

As of 2010, 112 public schools, or nearly a third of Santa Clara County's public schools, had a school garden. Santa Clara County is a highly diverse region, in terms of both ethnic and economic measures. As students from economically disadvantaged families are not likely to have the same access to fresh produce and backyard space, the benefits of school gardens are particularly important for those children. Yet a recent study by Santa Clara University found that schools that serve primarily economically disadvantaged neighborhoods and neighborhoods with a high percentage of minority students are less likely to have a school garden than schools that serve wealthier neighborhoods.¹⁰⁰ In wealthier areas of the county, there are several expansive, well-supported, and well-funded school gardens that have been in existence for decades.





This study and another by ChangeLab Solutions identified the challenges facing Santa Clara County schools in implementing and sustaining school garden programs.¹⁰¹ Both found that the major constraint on school gardens in the county is the largely informal nature of the programs. Few schools have plans that support gardens over the long term. Typically, school gardens in Santa Clara County lack secure funding and coordinated planning, relying instead on individual teachers, parent volunteers, and private donations or external grants for support. Some teachers noted that they would like to expand garden programming but were hesitant to increase time in the garden because of time constraints, often due to California State Content Standards that leave little time for activities that are not seen to contribute to the state requirements.

ChangeLab Solutions also found that produce from school gardens was rarely integrated into school lunch programs, often because not enough produce was being grown or because schools lacked the kitchen equipment necessary to prepare locally grown food. Because peak harvest season does not coincide with the school year, produce often went unharvested if teachers, parents, or other volunteers did not manage the garden during summer months.

School gardens throughout Santa Clara County would benefit from having a coordinator that has a longer-term association with the school, as well as at least a small group of regular volunteers and a small yearly budget (generally less than \$1,000). In addition, a designated space for garden beds is desirable. While this space does not need to be large, 5 to 10 beds appear to provide a critical mass, and more beds open up possibilities for "theme" gardens (e.g., scent, herb), as well as providing opportunities for designated spaces for classrooms.

Home Gardens. The number and impact of home and backyard gardens is difficult to assess, given their private and often enclosed nature. The proximity and ease of growing food close to home can lead to greater vegetable consumption and financial savings.¹⁰² A study of home gardens in Toronto demonstrated that they can enhance food security by encouraging a more nutritious diet and more healthful lifestyle.¹⁰³ It also found that securing access to suitable land and appropriate garden skills are the most significant barriers to growing food in residential areas.

Several organizations in Santa Clara County work with low-income communities to help families grow organic vegetables in home gardens. La Mesa Verde, a program of Sacred Heart Community Service, builds vegetable gardens and provides materials and training for low-income residents of San José. Valley Verde promotes the widespread cultivation of organic home vegetable gardens for people at all income levels, though it provides gardening materials to low-income residents for free.

La Mesa Verde aims to increase healthy food access for impoverished communities with the goals of promoting self-sufficiency and building community for its participants. After initial nutrition and garden training, families are invited to participate in three seasonal plantings throughout the year. An evaluation of La Mesa Verde by Santa Clara University demonstrated the successes of the program: 91 percent of families ate more vegetables, and 25 percent of families reported saving over \$720 annually by eating fresh organic produce they grew at home. Having a garden also provided an outlet for physical activity. These and other benefits indicate that the program is promoting healthy living for families who suffer most from food insecurity.

In addition to family support, the program is structured to promote healthy communities. Surveys revealed that gardening strengthened family ties as parents, children, and grandparents shared time together in the garden. Many families reported meeting friends and neighbors through the program and sharing produce and garden knowledge with neighbors, family members, and friends.¹⁰⁴



3.4 Organic Agriculture

Some of Santa Clara County's farms have become certified organic, but not to the extent seen in California as a whole. California leads the United States in organic farming, with 19 percent of the nation's organic farms, 12 percent of the organic acreage nationally, and 36 percent of organic sales nationwide. The state produces more than two-thirds of the organic fruits, vegetables, and nuts that are grown in the United States.¹⁰⁵ In 2011, Santa Clara County had 23 certified organic farms operating 433 acres along with 7 organic handlers and 5 organic processors.¹⁰⁶ In 2009, Santa Clara County organic production accounted for farm sales of \$8.9 million.¹⁰⁷

3.5 Agricultural Land

Inventory. In 2010, the California Farmland Mapping and Monitoring Program identified 17,270 acres of prime farmland, 10,481 acres of other important farmland, and 390,091 acres of grazing lands in Santa Clara County. According to the Farmland Mapping and Monitoring Program, Santa Clara County lost 39 percent of its total cropland from 1990 to 2008.¹⁰⁸

Protected Cropland. Approximately 2,330 acres of cropland are permanently protected in Santa Clara County.¹¹⁰ Many of these lands are protected through conservation easements. Existing easements typically protect farmland while also offering improved flood management, habitat values, wildlife corridors, and occasionally public access for recreation. Recent multiagency acquisitions of both property and conservation easements in the Soap Lake area near Gilroy have improved flood management in areas that continue to be actively farmed. Martial Cottle Park, a 288-acre unincorporated pocket in the heart of South San José, will continue to provide commercial agriculture on half of the park's acreage. The primary barrier to protecting additional cropland is securing funding for acquisitions. Land values for cropland on the valley floor are inflated by development potential, and less funding is available for cropland because these lands offer fewer ecological values than rangeland. In the future, agricultural mitigation policies will ensure that when farmland is converted to another use, other farmland is preserved into perpetuity so that agricultural production in Santa Clara County can continue for generations.

One of the challenges of agricultural mitigation efforts is identifying an appropriate entity to hold agricultural easements. As noted in the Sustaining Our Agricultural Bounty report, "agricultural conservation measures in Santa Clara County have been fractured" and "no conservation entity has emerged with both the capacity and the policies necessary to accept local government agricultural mitigation funds or easements."¹¹¹ However, efforts are now being undertaken by conservation entities in the county to address the situation.

Prime Farmland

is land that has the best combination of physical and chemical characteristics able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the date of record.

Grazing Land is

land on which the existing vegetation is suited to the grazing of livestock.¹⁰⁹ **Protected Rangeland.** About one-quarter, or approximately 100,000 acres, of Santa Clara's rangelands are permanently protected through conservation easements, restricted development rights, public ownership, or other means.¹¹² Cattle grazing is a key component for managing some protected lands, including those managed for habitat mitigation, watershed protection, and conservation of special status species. This approach to land conservation and management offers cattle ranchers continued access to rangelands for grazing while improving habitat for native plants and animals, reducing nonnative vegetation, and minimizing fire risk. For example, scientists and land managers are working together to conserve and enhance populations of the endangered Bay checkerspot butterfly on serpentine lands by using cattle grazing to reduce the nonnative grasses that out-compete the native plant species on which the butterfly relies. Local land management agencies also hire herds of goats to control weeds and remove thatch under certain circumstances.



The California Rangeland Resolution, a resolution documenting common ground for the conservation of the rangeland encircling the Central Valley, is signed by over 100 agricultural organizations, environmental interest groups, as well as state and federal agencies. The diverse organizations recognize the critical importance of California's privately owned rangelands, and the positive effects of grazing and other ranchland stewardship practices, and commit to collaboratively work together to protect and enhance the rangeland landscape.

The Santa Clara County Parks and Recreation Department operates four county parks with managed grazing and is reintroducing cattle grazing as a management tool at a fifth park.¹¹³ The Santa Clara County Open Space Authority, a public agency dedicated to preserving undeveloped lands in the county, owns 5,000 acres that are actively grazed by cattle.¹¹⁴ The City and County of San Francisco use cattle grazing on the lands around Calaveras Reservoir in Santa Clara County to provide for watershed protection. In addition, they are seeking to purchase conservation easements on private working rangelands within their watershed lands in Santa Clara County to provide more permanent watershed protection. The Nature Conservancy also owns and manages working rangelands as a conservation tool in Santa Clara County.

Williamson Act. In February 2013, 11,695 acres of prime farmland and 322,254 acres of nonprime lands were enrolled in the Williamson Act in Santa Clara County.¹¹⁵ Williamson Act 10- and 20-year contracts in Santa Clara County are intended to promote agricultural productivity and economic viability, and to preserve agricultural land from premature and unnecessary conversion to urban uses. To be eligible for the program, parcels generally need to be 10 acres or larger for prime farmland and 40 acres or larger for nonprime lands, and at least 60 percent of the parcel must be used for commercial agriculture.¹¹⁶

Santa Clara Valley Habitat Plan. The Santa Clara Valley Habitat Plan provides a framework for promoting the protection and recovery of natural resources, including endangered species, while streamlining the permitting process for planned development, infrastructure, and maintenance activities. The Santa Clara Valley Habitat Plan will minimally impact crop production in Santa Clara County, but animal agriculture may face significant impacts.

Crop production will see few impacts from the habitat plan, since little if any cropland will be acquired for habitat or wildlife linkages under the plan. In addition, for every acre of prime farmland lost under the Habitat Plan, the Habitat Agency must permanently protect at least an equivalent amount of prime farmland for continued farming through land acquisitions or conservation easements.¹¹⁷

Over 33,000 acres of new lands will be acquired and managed into perpetuity for the habitat plan, primarily grasslands and woodlands that have historically supported ranching activities.¹¹⁸ Though these lands will not be susceptible to development, industry leaders agree that livestock grazing may be less viable on lands acquired for the habitat plan over the next 50 years.

3.6 Agricultural Water

Table 3.1 Summary of County Water Supply Sources¹¹⁹

SANTA CLARA COUNTY WATER SUPPLIES

30% LOCAL WATER 15% natural groundwater 10% from reservoirs to groundwater 5% from reservoirs to drinking water treatment plants

55% IMPORTED WATER

15% thru Delta to replenish groundwater
25% thru Delta to drinking water treatment plants
15% from Hetch Hetchy system

+ 5% RECYCLED WATER = 90%

+ 10% SAVINGS NEEDED = 100% **Water Supply.** Though irrigated agriculture accounted for only 16,004 acres in 2012, it contributed 96% of the county's agricultural production value.¹²⁰ Agricultural water use in Santa Clara County amounts to approximately 25,000–30,000 acre-feet each year. Over half of Santa Clara County's water supply is imported from outside the county. As shown in Table 3.1, 40 percent of the county's water travels through the Sacramento-San Joaquin Delta, an area that is vulnerable to climate change, earthquakes, and regulatory and environmental restrictions that can reduce available water, particularly in times of drought.¹²¹

The Santa Clara Valley Water District, the primary water wholesaler for the county, has water supply contracts with the U.S. Bureau of Reclamation for 33,100 acre-feet of agricultural water from the Central Valley Project, with an average allocation of about 75 percent. Water from the Central Valley Project is pumped over Pacheco Pass from the San Luis Reservoir into the southern part of the county.¹²²

The Santa Clara Valley Water District operates an integrated water supply system that includes 10 local reservoirs, imported water, and groundwater recharge. The water district uses conjunctive management, or the coordinated use of both surface and groundwater supplies and infrastructure, to ensure water supply

reliability. Groundwater recharge is an important component of maintaining an adequate and reliable supply of water in Santa Clara County, and the vast majority of agricultural water comes from underground wells.

Water Rates. The 2012–2013 agricultural water rate is \$17.70 per acre-foot, compared with a municipal and industrial rate of \$295 in South County and \$622 in North County. These rates do not include the users' costs in accessing the water, such as development of groundwater wells and electricity to pump the groundwater to the surface and apply it at pressure. The Santa Clara Valley Water District offers agricultural water users a lower groundwater rate in accordance with their District Act, which states that agricultural water rates shall not be greater than 25 percent of the municipal and industrial rate, and in accordance with board policy that maintains agricultural water rates at not more than 10 percent of municipal and industrial rates.¹²³ The cost of agricultural water is also lower in part because of a reduced cost of service and to encourage open space preservation, which is important for watershed health.

The Santa Clara Valley Water District is currently engaged in a stakeholder process initiated by its Board of Directors to review the appropriateness of reduced rates for agricultural water users. Many in the agricultural community are concerned that the profitability of Santa Clara County agriculture would be placed in jeopardy with a significant increase in agricultural water rates. For this reason, the Food System Alliance has adopted the following position on water rates:

In recognition of the challenges of farming and ranching in this urban county, and in appreciation of the contributions that local agricultural production provides to the larger community, the Santa Clara County Food Systems Alliance supports the Santa Clara Valley Water District's board policy of maintaining agricultural rates at not more than one-tenth the water rate for Municipal & Industrial users.

Recycled Water. Facilities to recycle and redistribute water in Santa Clara County are found in Gilroy (South County Regional Wastewater Authority [SCRWA]), at the southern end of the county, and three other recycled water facilities along the Baylands in the northern part of the county. There is very little use of recycled water among agricultural water users in Santa Clara County; the SCRWA facility in Gilroy has historically served only one large agricultural customer. Availability of recycled water will likely increase as pipelines to deliver the water are developed, providing additional opportunities for recycled water (100 million gallons per day) by 2022.¹²⁴ The Santa Clara Valley Water District and the City of San José are completing construction on a new advanced recycled water facility that will purify recycled water beyond tertiary treatment, removing dissolved salts. This facility will enable recycled water to be put to more uses.

Some farmers have water quality concerns about irrigating with recycled water because of the increased presence of dissolved salts in recycled water. Produce buyers have also expressed safety concerns about using recycled wastewater for irrigating crops that will be eaten raw. Although neither of these concerns has scientific or legal backing, they are public perceptions that will need to be addressed before recycled water use for agricultural irrigation increases. In the Salinas Valley region of Monterey County, which is just south of Santa Clara County, an 11-year agricultural study examined various crops (such as artichokes, lettuce, celery, and broccoli) that were irrigated with recycled water. Results indicated that no pathogenic organisms were detected in the recycled water

Reliable Water. A reliable water supply is one of the most important components for robust agricultural production in Santa Clara County's semiarid climate. Santa Clara County growers can take advantage of the highly reliable water supply provided by the Santa Clara Valley Water District even when other agricultural areas in the state are experiencing severe water shortages. One recent example of this took place in 2009. Central Valley processing tomato growers suffered from water restrictions following three years of drought and were forced to fallow their land. Processing tomato production shifted to Santa Clara County, where water resources were still available, and much of that production continues today. Although no processing tomatoes were planted in Santa Clara County in 2008, Santa Clara County growers planted 1,160 acres of processing tomatoes in 2009, 1,009 acres in 2010, and 1,060 acres in 2011.126 Crop diversity is also greater when an adequate water supply is consistently available to local farmers.

or produce, soil permeability was not affected, produce yields and shelf life were as good, and tertiary treatment for recycled water was determined to be acceptable for food crops eaten raw.¹²⁵

Delta Imports. In southern Santa Clara County, where most of the county's irrigated agriculture is located, about a quarter of the water supply is imported from outside the county.¹²⁷ This imported water comes from water systems fed by the Sacramento–San Joaquin Delta. The Delta provides two-thirds of all Californians with at least a portion of their drinking water; it also provides habitat for hundreds of species of wildlife. The demands for habitat and water supply are often at odds, and over the past several decades, the Delta's ability to meet either need has been impaired. The needs of the ecosystem and of water users particularly clash during dry years of reduced rainfall. In addition, climate change poses several threats to the Delta. As the Delta becomes less reliable, alternative water supplies must be identified.

Future Water Demands. The Local Agency Formation Commission in Santa Clara County estimates that an additional 250,000 people are expected to live in the county by 2025.¹²⁸ Statewide, it is expected that the demand for urban water will rise as the population increases, and agricultural water use may be targeted if supplies are not increased. Locally, the Santa Clara Valley Water District's strategy for meeting the county's future water needs has three elements: (1) securing existing supplies and infrastructure, (2) optimizing the use of existing supplies and infrastructure, and (3) increasing recycling and conservation, including developing indirect potable reuse for groundwater recharge. Without new supplies, the county could see shortages of more than 25 percent during an extended drought. Shortages may come sooner or be more severe if there are curtailments in imported water supplies or climate change impacts.¹²⁹

Water Conservation and Water-Use Efficiency. What is now the Santa Clara Valley Water District began in 1929 as the Santa Clara Valley Conservation District to respond to shrinking groundwater aquifers and subsequent land subsidence, caused by groundwater pumping for agricultural irrigation.¹³⁰ As a result, water conservation has been a key component of the water district's management of water supplies in the county, and Santa Clara County growers have benefited from funding and technical support for water-use efficiency from the Santa Clara Valley Water District. In recent years, the District has provided agricultural support by:

- Funding a Santa Clara County Mobile Lab that provided on-farm analysis for over 60 growers, and providing administrative support for a five-county Mobile Lab program funded by the State Water Resources Control Board.
- Funding a focused irrigation efficiency management program over three years for 10 farmers, who are growing a range of different crops and represent farming operations with nearly one-quarter of the irrigated acreage in the county.

- Providing grants for farmer and rancher technical support, training, and coordination for Watershed Working Groups in Llagas, Uvas, and Pacheco watersheds.
- Directly funding California Irrigation Management Information System (CIMIS) stations in Santa Clara County to inform irrigation timing.

All these efforts have led to increased water-use efficiency in Santa Clara County. In 2010, there were roughly 15,000 acres of irrigated farmland in Santa Clara County, and 27,000 acre-feet of water was used for agriculture.¹³² Therefore, in the county, an average of only 1.8 acre-feet of water per acre were applied to irrigated lands. As demonstrated in the graph below, growers have used less agricultural water from the Santa Clara Valley Water District over time as the irrigated acreage served by the district continues to decline.





Irrigation Practices. The vast majority of irrigated farmland in Santa Clara County uses low-volume irrigation systems such as micro-sprinklers and drip irrigation. Although there are no formal numbers, it is estimated that over 80 percent of crop irrigation in Santa Clara County is done using low-volume systems.¹³³

Drip Irrigation. Drip irrigation was introduced in California around 1970¹³⁴ and began to gain traction in Santa Clara County in the 1980s. Drip irrigation involves running a plastic tube with perforated holes along the rows of plants. The tube, called drip tape, can be laid on the surface or placed beneath the soil, which is called subsurface drip. Drip irrigation is used in local vegetable crops, berries, and vineyards.

The California Irrigation Management Information System (CI-MIS) weather stations gather climatological data on air temperature, solar radiation, vapor pressure, wind speed, and wind direction to daily inform irrigators on the amount of water that evaporates from the soil and the amount used by plants.131

Using drip tape enables growers to irrigate at the base or root of the plants, reducing losses to leaching and evaporation. Many growers also distribute fertilizers through drip tape, which is called fertigation. Through fertigation, growers are able to reduce the amount of fertilizer applied and increase the efficacy of fertilizers by applying them at the root zone, where they are needed most. The benefits of drip irrigation include potential for higher yields and opportunities to grow high-value crops on land that might not otherwise support them. Labor costs can also be lower under drip irrigation systems, if the system is in good condition. Drip irrigation systems often reduce weed pressure—growers save money on labor for weed management and often apply fewer herbicides, but drip irrigation also has its challenges. Many growers report that it can be challenging to learn how to manage drip irrigation after the switch has been made from more traditional irrigation systems. Other disadvantages include rodent damage to drip lines and algae and mineral buildup in the lines.¹³⁵ In addition, for years the local agricultural industry has been challenged to find a cost-effective, environmentally sound solution to recycling plastic drip tape at the end of its useful life.

Micro-Sprinklers. Many orchards and some vineyards in Santa Clara County use micro-sprinklers. Micro-sprinkler irrigation has the advantages of drip irrigation, but irrigation water is applied over a surface area larger than that of drip irrigation. Consequently, the root system is distributed within the larger wetted soil volume, which is important for tree crops. Though more expensive to install than movable surface irrigation pipes, pressurized micro-sprinkler systems can provide a number of benefits, including the potential for improved crop yield and quality, high irrigation uniformity and efficiency, the capability to inject chemicals through the irrigation system (chemigation), fewer weeds, and the ability to deal with water infiltration issues.¹³⁶ As with drip irrigation systems, micro-sprinklers are designed for high-frequency irrigation, and application rates can be controlled to minimize surface ponding. Disadvantages of micro-sprinklers include water losses due to wind effects and evaporation.¹³⁷ Micro-sprinklers are common in newer orchards.

Other irrigation practices. Many local growers use mobile surface sprinklers to irrigate fields to establish plants when transplants are used. Beyond this use, traditional surface sprinklers are uncommon in Santa Clara County. Alfalfa hay requires irrigation in our climate, and alfalfa is usually irrigated using sprinkler lines or flood irrigation. Some vegetable and fruit crops are still furrow irrigated, and some tree crops are flood irrigated.

Dryland farming. Most hay production in Santa Clara County is not irrigated and is produced under dryland farming conditions. Dryland hay crops here are typically planted in November and harvested around May, so plants can receive natural rainfall during the rainy season. Hay crops are less vulnerable to freezing temperatures and do well in the winter, when other crops may be harmed by frost or even rain.

Water Quality. Santa Clara County farmers and ranchers are subject to water quality requirements. On the valley floor, the watershed line is generally located at Cochrane Road in Morgan Hill. Water flowing north of this line drains to the San Francisco Bay and is governed by the San Francisco Regional Water Quality Control Board. The majority of the county's farmland lies south of Cochrane Road and is part of the Pajaro River Watershed, which drains to the Monterey Bay National Marine Sanctuary and is governed by the Central Coast Regional Water Quality Control Board.

Water quality regulations focus on water leaving farms and ranches as stormwater, tailwater, and through groundwater leaching. For irrigated agriculture, water quality requirements are largely contained in the regional water board's Irrigated Lands Regulatory Program, often referred to as the Ag Waiver because it waives the requirement for an individual waste discharge permit for each farm or ranch and instead creates a regionwide programmatic approach. For ranchers, water quality requirements are implemented primarily through Total Maximum Daily Load (TMDL) levels established for waterbody impairments.

Agriculture is identified as a contributing factor in several water quality impairments in Santa Clara County. Table 3.2 shows water quality impairments included in the 2010 Clean Water Act Section 303(d). Types of agriculture that contribute to these impairments include agricultural return flows, agriculture, grazing-related sources, irrigated crop production, pasture grazing (riparian and/or upland), and silviculture. Other factors contributing to these impairments vary by waterbody and include: natural sources, urban runoff/storm sewers, unknown sources, unspecified nonpoint sources, unspecified point sources, municipal point sources, habitat modification, channelization, hydromodification, removal of riparian vegetation, saltwater intrusion, transient encampments, onsite wastewater systems (septic tanks), collection system failure, surface mining, streambank modification/destabilization, and highway/road/bridge runoff.¹³⁸

Waterbody	Impairments	Estimated
		Affected Area
Carnadero Creek	E. coli, fecal coliform, low dissolved oxygen,	2 miles
	nitrate, turbidity, pH	
Furlong Creek	Chlorpyrifos, E. coli, fecal coliform, nitrate,	9 miles
	turbidity	
Llagas Creek	Chlorpyrifos, fecal coliform, low dissolved	16 miles
(below Chesbro Reservoir)	oxygen, nutrients, sedimentation/siltation	
Pacheco Creek	Fecal coliform, low dissolved oxygen, turbid-	25 miles
	ity	
Pajaro River	Boron, chloride, chlorpyrifos, E. coli, fecal	32 miles
	coliform, low dissolved oxygen, nitrate, nu-	
	trients, sedimentation/siltation, sodium, tur-	
	bidity	
Uvas Creek	Low dissolved oxygen, turbidity	8 miles
(below Uvas Reservoir)		

Table 3.2. Waterbody Impairments in Santa Clara County for Which Agriculture Is Identified as a Contributor¹³⁹



photo credit: Nancy Barrera

3.7 Climate

Santa Clara County is home to many microclimates, in large part because of its varied topography and the coastal influence. Most areas of the county have a subtropical Mediterranean climate and receive little to no rain from June to September, with some rain in May and October, and heaviest rainfall in January and February.

San José has more than 300 days of sunshine and a mean annual rainfall of 14 inches. Measurable precipitation in San José falls an average of 50 days a year.¹⁴⁰ Gilroy receives more rainfall than San José, with an annual average of 19 inches and an average of 60 days with measurable precipitation. Gilroy has some of the warmest weather in the county, with an average of 7 days with a daytime high of 100 degrees Fahrenheit or higher and also experiences summer fog because of the influence of Monterey Bay.¹⁴¹

Morgan Hill and Gilroy experience greater swings in temperature from daytime highs to overnight lows. This climate provides what stone fruit growers refer to as diurnal climate, a desirable trait that results in slow but steady development of fruit quality and sugars. Local growers use the county's microclimates to spread out their production to create longer seasons. While one microclimate may be suitable for an early market, a cooler part of the county may be ideal for marketing produce later in the season. Snow is rare on the valley floor, sparing crops from potential damage. The first hard freeze of the year typically arrives in November, and growers use April 10 as a safe planting date, after which a hard freeze is unlikely.

Climate Change. The following is from the Department of Food and Agriculture and the Department of Conservation's report, "Agriculture" in the 2009 California Climate Adaptation Strategy:¹⁴²

Climate change is altering both average and extreme temperatures and precipitation patterns, which in turn influence crop yields, pest and weed ranges and introduction, and the length of the growing season (see Table 3.3). Extreme events, such as heat waves, floods, and droughts, may be among the most challenging impacts of climate change for agriculture, since they can lead to large losses in crop yields and livestock productivity. Traditional water delivery systems may face challenges as urban demand increases and supply diminishes as a result of generally drier conditions and the reduction of the Sierra snowpack. Since California plays a critical role in feeding residents of the state, the nation, and other countries, large production declines and losses would translate to food shortages as well as financial and economic shifts that could disrupt local, regional, and national commodities systems.

Impacts from climate change often vary by crop, as some crop yields may increase with warming while others may decrease. Grain hay production, which is often rain fed, will be highly susceptible to changes in climate and rainfall. The production of high-quality wine grapes is expected to benefit from a warmer climate because of a longer growing season and more favorable growing conditions in the short term. At some point, however, the magnitude of the warming may become too great for certain grape varieties. Though many annual field crops, such as wheat, cotton, maize, sunflower, and rice, may experience declining yields later in the century due to rising temperatures, these crops are not common in Santa Clara County.

Agriculture may benefit from the lengthening of the growing season as freezing temperatures may become less common over the course of the 21st century. While many crops benefit from the increase in average temperatures and the lengthening of the growing season, not all do. Some of Santa Clara County's most valuable crops, such as tree fruits and wine grapes, require a certain number of chill hours in the winter. Chill hours are the number of hours below a certain temperature that a plant requires for dormancy before springtime growth. The temperature threshold and duration of dormancy needed are species-dependent, yet without the required period in dormancy, blooming, the setting of fruit, fruit quality, and crop yields are negatively affected. The number of winter chill hours has declined since 1950, and existing varieties may need to be replaced with new cultivars that require fewer chill hours or alternative crops that do not require as many winter chill hours in order to avoid substantial losses. In one study, researchers examined the effects of climate change on the 20 most valuable perennial crops grown in California.¹⁴³ They found that cherries, the 18th most valuable perennial crop in the state, with 900 acres planted in Santa Clara County, are likely to be the most negatively affected by warming in coming decades. In addition, crop-pollinator timing can also be affected by climate change, which would necessitate modifications in crop production for Santa Clara County's cherries and other pollinated crops.

Table 3.3. California Department of Food and Agriculture (CDFA) Predicted Agricultural Impacts of Warming¹⁴⁴

PREDICTED AGRICULTURAL IMPACTS OF WARMING

- Crop Yield Changes
- Changes in Crop Types & Cultivars
- New Weed Invasions/Expanded Ranges of Existing Weeds
- New Disease & Pest Invasions/Expanded Ranges of Existing Diseases & Pests
- Flooding & Crop Pollination Changes
 - Heat Waves & Stress
 - Loss of Crop Quality & Yields
 - o Increased Vulnerability to Pests
 - o Increased Animal Vulnerability to Disease
 - Increased Mortality
 - o Less Production from Animals

3.8 Farm Labor

The need for agricultural laborers in Santa Clara County is high because the county's diverse crops require a large amount of hand labor, ranging from transplanting pepper plants to pruning vineyards to hand-harvesting mush-rooms. According to the County's General Plan, a key factor in maintaining the viability of local farming operations is the presence of an adequate supply of farm labor. Agriculture workers include all those who are engaged in field work planting, pruning, or tending crops and those who pick, dry, or process crops or flowers on farms. Those who work at canning, freezing, or bottling facilities are considered manufacturing employees and are not considered farm employees. The agricultural work force in Santa Clara County includes both permanent, long-term residents, and migrant or visiting workers.¹⁴⁵

On-Farm Employees. Typically, agricultural employment numbers are highest from June through October because crops are harvested in larger numbers during those months. Agricultural employment is minimal during the winter months, when most crops are dormant, and increases significantly in the summer and fall. For instance, in October 2012, Santa Clara and San Benito Counties combined provided jobs for 5,800 on-farm employees, but by January 2013, on-farm employment in the two counties had dropped to 3,800 employees.¹⁴⁶ In December 2012, earnings for agricultural jobs on the Central Coast averaged \$13.22 per hour, with wages highest in grapes and lowest in berry crops.¹⁴⁷ Christopher Ranch, a leading garlic producer in Gilroy, was listed among the county's top employees in 2012.¹⁴⁸

Farm Labor Contractors. Many local growers depend on farm labor contractors (FLCs) to provide adequate labor during busy seasons. It is common for growers to maintain smaller year-round or seasonal crews and use farm labor contractors for additional labor needs. According to the Santa Clara County Agricultural Commissioner's office, 49 farm labor contractors were registered in the county in 2012. These contractors enable farmers to change the number of employees they have as their labor needs change and to make one call to get a crew instead of 30. At the same time, FLCs provide farm laborers with more steady work because they move from farm to farm as needed.



Farm Worker Unions. Santa Clara County is home to a few farms with union contracts, which are primarily represented by the United Farm Workers Union (UFW). Beginning in the 1980s, UFW has been successful in unionizing mushroom farms in the county. Many of the mushroom farms in the county still operate under UFW contracts, and the most recent successful unionization election took place in 2006 at a mushroom farm in San Martin.¹⁴⁹

Labor Shortages. Labor shortages in California are becoming increasingly common, and Santa Clara County growers are feeling the pinch. Growers report that sufficient labor is especially difficult to come by in August and September and into October. During this period, wine grapes join other crops being harvested, including bell and chili peppers, beans, tomatoes, squash, and sweet corn. When possible, farmers have adopted mechanization for harvesting and other tasks. Mechanization becomes cost-effective as the short labor supply drives up wages, and it is a much more reliable form of assistance.

Many farm workers in California are Mexican nationals. Some have the required paperwork, but an estimated 70 percent of the agricultural labor force statewide does not have proper documentation to work legally in California.¹⁵⁰ Since California is so reliant on Mexico for seasonal and year-round laborers, immigration policies, Mexican drug wars, border control, and economic factors affect the number of agricultural laborers available in California. In 2012, the Pew Research Center reported that the net migration from Mexico into the United States had stopped or even reversed for the first time in four decades. It attributed the change to weakened U.S. job markets, heightened border enforcement, a rise in deportations, growing dangers associated with illegal border crossings, and a long-term decline in Mexico's birth rates.¹⁵¹

According to a survey of nearly 800 farmers released by the California Farm Bureau in late 2012, 61 percent of respondents said they were experiencing worker shortages to varying degrees. Among the respondents who grow labor-intensive crops, like many of those in Santa Clara County, 71 percent reported employee shortages. Thirty-three percent of those reporting shortages said they were experiencing shortages in seasonal workers of between 10 percent and 30 percent. Another 21 percent of respondents reported shortages of at least 30 percent to more than 50 percent. A majority of the farmers who reported shortages employ five or fewer employees on a permanent basis and hire 25 employees or fewer during peak season. To deal with workforce shortages, growers delayed pruning and harvesting, used mechanization if available, did not harvest some of their crops, and/or raised their wages to keep from losing workers to other growers.¹⁵²

Agricultural Employee Housing. The scarcity of affordable housing, particularly in South County communities, has had a tremendous impact on farm workers. As agriculture has evolved, the housing needs of farm worker households have become more diverse. Today the housing needs of resident and migrant workers, as well as those of families, single men, and single women, must be addressed. For instance, the number of migrant families with children has grown over the past several decades. This occurs, in part, because the household cannot afford to maintain the "home base" and must travel together. The presence of very young children creates a number of unusual demands for the families and their employers. Children need safe day care options, schools, medical care, and social services.¹⁵³ The California Office of Migrant Services operates the Arturo Ochoa Migrant Center in Gilroy. From May to October, the Center provides a housing community for migrant families that has on-site access to medical services and an infant care center. The facility was upgraded in 1995 and offers 100 units comprising 67 two-bedroom units and 33 three-bedroom units. To stay at the facility, households must be within the 50 percent category of the Section 8/Public Housing Income Limits; rent is about \$12 per day. The facility usually has a wait list, as the demand for migrant housing is greater than the supply.¹⁵⁴

For single migrant workers (both male and female), the primary housing objective is safe, clean, low-cost shelter in proximity to the fields where they are working. Most will have arrived in buses or caravans of trucks and will not have private transportation. They have come, by and large, to earn and save as much money as possible to take home at the end of the harvest. Consequently, they are looking for the least expensive, safe and clean shelter they can find.¹⁵⁵ The privately operated Rodriguez Farm Labor Camp in Gilroy has a maximum capacity of 100 people. According to the California Department of Housing and Community Development, approximately 20 other farm labor camps operate in the county, with the collective capacity to house 315 employees.¹⁵⁶ These facilities are primarily private employee housing owned by local farmers for their own employees. Employee housing is subject to state permits and inspection if five or more employees live at one location.

3.9 Support Services

Tractors. Local agricultural infrastructure and agricultural support industries have waned over the years as agricultural production in Santa Clara County has declined. One of the most notable gaps in local agricultural support services is the absence of an agricultural tractor dealership in Santa Clara County. Local growers must travel out of the county to purchase or rent agricultural tractors. In addition, the county's farmers and ranchers generally need to travel to Hollister, Salinas, or even farther for parts and service for tractors. Specialized harvest-

ing equipment is challenging to maintain when service technicians and parts are absent and any breakdown in harvesting equipment disrupts the entire harvest process. When crops are ready and every hour is valuable, losing half a day or a day to track down a part is more than just an inconvenience.

Inputs. A few small chemical supply companies remain in Santa Clara County, and farmers and ranchers have turned to companies in Hollister, Watsonville, and Salinas to meet their fertilizer and pesticide needs. These companies supply organic and inorganic materials, and the absence of local companies has not adversely impacted local crop production or weed control on rangelands. Irrigation supplies are available within the county, and many growers also patronize irrigation suppliers throughout the northern Central Coast.

Vegetable transplants are raised locally and used by farmers in Santa Clara County, throughout California, and beyond. Vegetable seeds are easily acquired through Central Coast companies, which are primarily located in Salinas, even when seed research and development takes place in Santa Clara County. Fruit tree stock usually comes from the Central Valley, as the county's tree nurseries primarily raise ornamental trees.



Cattle ranchers are able to purchase feed supplements and veterinary supplies at local feed stores or online. There is one primary large-animal veterinarian in the county for livestock, and if he is unavailable, ranchers must seek assistance out of the county at greater expense and with less timely response.

Post-harvest. It can be hard to determine what comes first, the crop or the outlet for the crop. Having facilities to pack, cool, ship, and process some of the county's flagship crops keep local farmers growing peppers, garlic, and other vegetables. Most mushroom farms have packing facilities on site, both for whole mushroom packaging and for slicing mushrooms. Cold rooms at mushroom farms can hold product only for a limited time before it is placed in

a refrigerated truck for delivery. Processing tomatoes grown in the county are shipped to the Central Valley for processing, walnuts typically work their way to Hollister for hulling and drying, and lettuce is generally packed in the field before being rushed to a cooling facility outside the county. Crops that do not have post-harvest facilities nearby are less likely to be grown in the county.

Prune dehydrators, tomato canneries, and fruit canneries for pears, peaches, and apricots were commonplace when Santa Clara County was the fruit capital of the world. However, as the crops they supported have dwindled, these facilities have vanished from the county, except for the occasional small dehydrator. There are sufficient fruit stands to provide an outlet for the county's limited strawberry production, but most cherry growers can sell only a portion of their highly perishable crop through fruit stands, and they take much of their harvest to packing com-

panies in the Central Valley. Wineries in Santa Clara County have sufficient capacity to crush the county's annual wine grape crop, but bottling lines for wine are harder to come by, and many wineries rent mobile bottling lines.

Cattle ranchers have a nearby livestock market in Aromas, though many ranchers take at least a portion of their herd to other markets. Ranchers use Internet video sales to cut out the middleman and sell their calves to feed-lots across the West and beyond. There are no livestock harvesting facilities in Santa Clara County; the few head that are finished in the county must be taken to Los Banos, Paso Robles, or as far away as Orland for ranchers to harvest their animals.

Land Ownership. The permanent plantings of fruit and nut trees and vines that once dominated the landscape have largely been replaced with annual crops that provide landowners with more flexibility. Development potential has led to land speculation, and much of the land on the valley floor is now owned by absentee owners who lease the land to local farmers. Leases in Santa Clara County are typically for a multiyear term, often in the range of three to five years, and growers will generally farm a piece of ground for an extended period of time. Lease rates are fairly low, at approximately \$200 to \$500 per acre per year, and most landowners report that agricultural leases barely cover property taxes.¹⁵⁷



Ranchers are more likely to own a significant portion of their grazing lands, though leasing lands is common in cattle ranching as well. In 2007, 131,709 acres of agricultural land in Santa Clara County were in full ownership, 133,636 acres were in part ownership, and 34,521 acres were reported to be in tenant farming.¹⁵⁸

Financing. Financing can be challenging for agricultural operations in Santa Clara County because they may not know where to turn for funding assistance and because traditional lenders may be unfamiliar with agricultural operations. Small and beginning farmers are more likely to struggle to acquire financial assistance, which can be due to lack of collateral, lack of information on the part of the grower, and lack of confidence on the part of the lender. For this reason, many lenders, including the U.S. Department of Agriculture (USDA) and Farm Credit, have created small and beginning farmer programs to focus on disadvantaged farmers, but eligibility for these

programs can be difficult to meet. The USDA also offers microloans up to \$35,000 for beginning, niche, and the smallest of family farm operations with modified application, eligibility, and security requirements. The nearest USDA office is located in Hollister, where farmers and ranchers can apply for loans, crop payments, crop insurance, and conservation assistance. California FarmLink offers operating and equipment/infrastructure loans that range from \$5,000 to \$100,000, primarily for small and beginning farmers.

Of the various growers who responded to a survey prepared for this assessment, 60 percent reported that their annual operations are self-funded rather than supported by an annual operating loan from a commercial lender. Twenty percent of respondents use an operating loan or credit card, and the remaining 20 percent either use grants or declined to answer the question.¹⁵⁹

3.10 Crop Protection

Pesticide Use. The first state to require full reporting of agricultural pesticide use, California has been collecting comprehensive pesticide use data since 1990. Under the Pesticide Use Reporting program, "All agricultural pesticide use must be reported monthly to county agricultural commissioners, who in turn report the data to California Department of Pesticide Regulation." Because California has a broad legal definition of "agricultural use," pesticide applications to parks, golf courses, cemeteries, rangeland, pastures, and along roadside and railroad rights-of-way must be reported.¹⁶⁰ Application of restricted pesticides in California must be approved by a certified Pest Control Advisor (PCA) licensed by the California Environmental Protection Agency.

Many factors, including weather, pest problems, economics, and types of crops planted, affect the amount of pesticide use, which varies from year to year.¹⁶¹ In 2010, the top five targets for pesticide use in Santa Clara County, based on pounds of active ingredient, were fruiting peppers, structural pest control, landscape maintenance, tomatoes, and uncultivated agriculture.¹⁶² Fumigants were the largest contributors among the top three agricultural targets. The top five most frequently used pesticides in Santa Clara County in 2010 were potassium-methyldithiocarbamate and metam-sodium (both agricultural fumigants), sulfuryl fluoride (a structural fumigant), glyphosate (the active ingredient in Roundup herbicide), and sulfur (an agricultural fungicide).¹⁶³ Some of these materials, such as sulfur, are used by both conventional and organic farmers,¹⁶⁴ and others are used in both urban and agricultural settings. In terms of acres treated, peppers, sweet corn, leaf lettuce, processing tomatoes, and wine grapes topped the list for Santa Clara County in 2010.¹⁶⁵ In 2010, the California Department of Pesticide Regulation reported 1.1 million pounds of active ingredient applied in Santa Clara County across all users reporting.¹⁶⁶

According to the California Department of Pesticide Regulation, "Approximately two-thirds of the pesticides sold, including chlorine used primarily for municipal water treatment and home-use pesticide products ... are not subject to reporting."¹⁶⁷ In 2005, it was estimated that about 70 percent of the pesticide sales in California were for application in urban areas.¹⁶⁸

Invasive Pests. The California Department of Food and Agriculture (CDFA) states that "California is free from many invasive insect, weed and disease species that wreak havoc on agriculture and ecosystems in other states and countries. This is largely because our state is surrounded by natural barriers—towering mountains to the north and east, scorching desert to the south, and vast ocean to the west. While most plant pests cannot cross these barriers on their own, California is under constant threat of pest introductions by humans."¹⁶⁹ This is particularly true in highly urbanized areas such as Santa Clara County.

People may inadvertently introduce invasive species that travel along with produce, plants, or vehicles that are brought or shipped into the state. Because of the mild climate in Santa Clara County, "these invaders sometimes find a new home in which they can thrive—free from the natural predators that kept them in check in their original environment."¹⁷⁰

When infestations occur, crops often must be treated to meet trade partner requirements or to allow marketable goods to be grown. Spraying and other treatments result in more chemicals in the environment, higher production costs, and higher grocery store prices. As the CDFA notes, "In many cases, invasive species permanently alter the environment, making it uninhabitable for native species or rendering land worthless for recreation, grazing, or other uses."¹⁷¹

Some invasive species have gained a strong foothold in the county. Yellow starthistle, a plant that reduces forage production on rangelands, is found within every mapping unit of the county.¹⁷² Other plant species, such as barb goatgrass and medusahead grass are colonizing the open space and rangelands in the county, displacing native species and creating monocultures of unpalatable forage. The light brown apple moth, an invasive insect, has successfully established itself throughout all but the eastern range of the county.

Invasive species such as the European grapevine moth, the glassy-winged sharpshooter, and the Oriental and Mediterranean fruit flies have been detected in Santa Clara County but have not been successful in establishing here. The inability of these species to successfully colonize is due to the active pest prevention programs that have detected, controlled, and eradicated them.

To reduce the number of pest introductions and subsequent infestations, the Santa Clara County Agricultural Commissioner's office and CDFA implement a pest prevention system comprising pest exclusion, pest detection, and pest eradication. County pest prevention programs are funded through contractual agreements with the CDFA and supplemented by County general funding. A major part of this system is pest exclusion—inspecting commodities as they enter to prevent introductions. CDFA biologists operate Agricultural Inspection Stations at border crossings around the state. Pest exclusion biologists from the County Agricultural Commissioner's office conduct agricultural product inspections at airport, U.S. Mail, and commercial parcel carrier facilities and terminals throughout Santa Clara County.

Santa Clara County also uses trained dogs to augment its parcel inspection program. The canine inspection team conducts surveillance inspections at the U.S. Postal Service and parcel centers operated by Federal Express and UPS to provide parcel inspection services related to plant products entering the state. The purpose is to intercept parcels that are shipped in violation of agricultural quarantine laws and to inspect the contents for the presence of

any unwanted plant pests, including insect species, diseases, or other harmful organisms, that may pose a threat to California's economic well-being. The canine parcel inspection program also conducts outreach to increase industry and public awareness of the importance of excluding potentially harmful pest organisms.

Plant and disease pest detection are conducted primarily through field surveys, while insect pest detection is conducted through seasonal trapping programs that use specialized traps to target a variety of agricultural pests. Targeted species include the Mediterranean, guava, peach, Oriental, and Mexican fruit flies; gypsy moth; Japanese beetle; glassywinged sharpshooter, and Asian citrus psyllid.

When an invasive pest is detected, a management or eradication program is triggered. The methodology used for control/eradication is specific to the target species and is typically conducted by the CDFA with logistical support from the Agricultural Commissioner's office. Early detection and rapid response (eradication) are by far the most cost-effective strategies to deal with undesirable invaders. Unfortunately, recent funding cuts to pest prevention at the state level have significantly impacted these programs and increased the likelihood of invasive pest introductions into Santa Clara County.

Food Safety. The Centers for Disease Control and Prevention reports that each year food-borne illnesses affect 48 million people, resulting in 128,000 hospitalizations, and 3,000 deaths.¹⁷⁴ By 2015, one in six people will be over the age of 60,¹⁷⁵ an age more susceptible to illness caused by pathogens. In addition, bacteria have become increasingly resistant to antibiotics.¹⁷⁶ Given the right growing conditions, bacteria can grow at exponential rates¹⁷⁷ and affect the health of the young, the elderly, and those with compromised immune systems.¹⁷⁸

In 2006, a Salinas Valley food processor recalled spinach that tested positive for E. coli O157:H7. At least 276 consumer illnesses and five deaths were reported,¹⁷⁹ and the sale of all spinach stopped. When a product is contaminated with a food-borne pathogen, it is not just that particular food processor or farm that suffers, every farmer who raises that commodity is affected. When consumers stop buying that product, farmers cannot sell the product they have spent all year growing. After a pathogen outbreak occurs, product sales drop, and many farms are unable to recover.

After the spinach E. coli outbreak in 2006, a number of farms voluntarily agreed to take steps to reduce the risk of bacteria growth and cross contamination. Some farms already had food safety plans in place; most were already practicing these food safety measures and simply needed to monitor and record their practices. Backed by scientific research that validates these risk reduction methods on the farm, these practices became known as Good Agriculture Practices (GAPs) and the Leafy Green Marketing Agreement

According to the County of Santa Clara Department of Agriculture's Canine Parcel Inspection Team website:

Every day, agricultural biologists visit parcel facilities and inspect packages containing agricultural products. But there are many packages that are not labeled on the outside of the box and we have no idea whether or not they contain agricultural products. To combat this problem, Santa Clara County's Division of Agriculture deploys a canine parcel inspection team. The detection team consists of a canine, 'Hawkeye,' and several agricultural biologists. Hawkeye and his team go to parcel facilities and he scratches at parcels containing agricultural products to alert the dog-handler. The package is then inspected by a biologist to determine if the agricultural products are allowed into California." 173



(LGMA). These consumer-driven practices are verified by a third-party auditor agency at the request of buyers, consumers, distributors, and insurance agencies. Auditor requirements vary somewhat between agencies but are generally very similar. Putting together a food safety plan helps farmers and ranchers to identify risks, manage their farm practices, and reduce the risk of a recall.

Recognizing that U.S. food safety laws had not been significantly revised since the 1930s, Congress enacted the Food Safety Modernization Act (FSMA) in 2011. FSMA aims to ensure that the U.S. food supply, both foreign and domestic, is safe by focusing on prevention rather than responding to contamination after it has entered the food system.¹⁸⁰ In January 2013, the U.S. Food and Drug Administration (FDA) released five proposed policies to implement the preventive food safety approach established by FSMA; these include science-based standards for growing, harvesting, packing, and holding produce on domestic and foreign farms. According to FDA estimates, the proposed rule would cover 40,496 domestic farms and 14,927 foreign farms. The annual cost of the proposed rule is projected to be \$459.56 million for domestic farms and \$170.62 million for foreign farms. Some domestic farms that engage in direct farm marketing to qualified end users would be partially exempted from the proposed rule, and farms that grow, harvest, pack, or hold produce and sold food valued at an average of \$25,000 or less annually during the previous three years would not be covered by the proposed rule.¹⁸¹

3.11 Regulatory Burden

The regulatory burden in California is a major concern for the agricultural industry. A recent survey by the National Agricultural Statistics Service found that 38 percent of California's organic farmers and ranchers identified regulatory problems as their biggest challenge.¹⁸² In a study commissioned by the California Farm Bureau,¹⁸³ 68 percent of survey respondents agreed with the statement that in order to provide California consumers with safe and affordable food, the State should protect family farmers from high taxes and excessive regulation. In Santa Clara County alone, farmers and ranchers can interact with as many as 16 federal agencies, 15 State agencies, and 8 County agencies, depending on the issue or project at hand.

A study commissioned by the California Farm Bureau Federation, called "The Cumulative Impact of Government Regulations on California Family Farms and Ranches," made recommendations to ease the regulatory burden.¹⁸⁴ It proposed that the State do the following: develop programmatic approaches that are based on an outcome principle rather than a precautionary principle; ensure that regulation is approached in an expedient and cost-efficient manner; improve the science used by agencies and departments to make decisions; and ensure that current statutes are necessary and are implemented fairly. The same principles might reasonably be applied to federal and County agencies.

Santa Clara County farmers and ranchers have benefitted from recent revisions to county ordinances. In 2011, the county's fire marshal significantly reduced required fire flows, which had become a significant cost for rural projects and often resulted in delays. Under the new requirements, a farm office that would have needed 45,000 gallons of water storage for fire suppression can now install a 5,000-gallon tank. At an estimated \$1 per gallon for water storage, the cost savings to local businesses are significant. Additionally, the Santa Clara County Board of Supervisors initiated the Wineries Working Group process in 2011, which resulted in increased opportunities

for local wineries to host events to market their wines locally. These changes are still being implemented, so they cannot be quantified, but they offer value both through reduced restrictions on business and through a more appreciative and positive outlook from farmers and ranchers.

3.12 Agricultural Research and Education

Agricultural research and education in Santa Clara County serves both producers and consumers. Producers receive information on crop and livestock production, rangeland management, pest management, water quality protection, food safety and soil and water conservation. Consumers are provided with food and nutrition education including safe food handling, and selection and preparation of healthy, nutritious meals. This section lists some of the agriculture and food education and research programs operating in the county.

University of California Cooperative Extension. By far the most abundant source of agricultural research and education is the University of California Cooperative Extension (UCCE). UCCE is a bridge between local agriculture, food and natural resource issues and the power of UC research. UCCE provides programs in Santa Clara County covering crop production, small farm production, urban agriculture, livestock production, urban horticulture, rangeland management, watershed protection, pest management, food and nutrition education, home gardening and youth development.

UCCE Farm Advisors. The county-based farm advisors conduct applied research and extend information to support the county's agricultural production. Santa Clara County is currently served by a Farm Advisor, Specialty Crop Advisor, Urban Horticulture Advisor, Urban Agriculture Advisor, Pest Management Advisor and Live-stock/Natural Resources Advisor. The advisor for the region's tree fruit and nut crop retired in July 2011 and has not been replaced. Farm Advisors work to solve local problems to keep farmers and ranchers competitive and sustainable. With the help of UCCE Farm Advisors, agricultural producers have increased yields, improved water efficiency, reduced pesticide loads, accessed new markets, and made food safer. In supporting agriculture sustainability, farm advisors also conduct research and promote practices that have improved environmental quality and conserved natural resources. The following highlights two farm advisor programs that have been serving Santa Clara County.

Small Farm Program. This program focuses on specialty crop research. It provides production and marketing information to farmers who are not reached by traditional extension programs. Small-scale farmers can often find a profitable niche when the unique quality, taste, appearance, or harvest time of their products differentiates them from more widely available commodities. The advisor conducts ongoing field research on specialty crops, including crops new to production in California. His field research includes variety tests aimed at helping small-scale farmers decide which new varieties might flourish under local growing conditions. Many small-scale farmers are also responsible for selling their products. Over the years, the Small Farm Program has helped develop innovative marketing channels to help small-scale farmers add value to their products.

Livestock/Natural Resources Program. This program focuses on research and outreach to keep local working rangelands (ranching) viable. Santa Clara County's undeveloped lands, whether in public or private ownership are largely used for livestock grazing and managed as working rangelands. There is growing recognition of the breadth and value of ecosystem services provided by working rangelands including wildlife habitat and endangered species conservation, weed control, fire fuel reduction, food production, and watershed and open space protection. Maintaining working rangelands near urban centers presents many challenges including loss of access to forage, loss of ranch infrastructure, competing public interests, invasive pest species, loss of ranching communities, and uninformed landowners. The advisor conducts research on valuing and paying for rangeland stewardship, grazing for conservation



photo credit: Nancy Barrera

objectives, and weed control. She provides research-based information to public and private landowners on goal development, ranch planning, grazing management, weed control, watershed protection practices, and monitoring. Her program serves cattle ranchers, public and private landowners, and resource management professionals.

UCCE Nutrition, Family, and Consumer Sciences. This program provides SantaClara County consumers and families with science-based information about foods and nutrition, food safety, and family resource management. Nutrition education targets limited income families and youth through the Expanded Food Nutrition Education Program (EFNEP) and the Food Stamp Nutrition Education Program (FSNEP). As advocates for healthy communities, the advisor and her staff promote healthy diets and exercise for better health.

UCCE Master Gardeners. The Master Gardener program is a volunteer-based program that provides research-based gardening information to county residents and agencies. Master Gardener volunteers complete a 16-week, 60+ hour training program in home horticulture. They are the county's primary sources of gardening information through adult education classes, workshops, and answering homeowner's questions on the telephone hotline and via email. The Master Gardeners also manage demonstration gardens to test new gardening methods, research new varieties of flowers and vegetables, provide technical assistance at schools on how to start a student garden, and speak to service clubs, school and senior centers.

UCCE 4H Youth Development. The 4-H Youth Development Advisor in partnership with 4-H volunteers provides hands-on experiential learning experiences for youth ages 5-19. Members have the opportunity to participate in the 4-H program through nine community clubs, camps, events, and conferences. In 4-H, youth are encouraged to discover their passions, adopt a growth mindset, practice self-reflection and set goals. 4-H projects and programs are focused around the core content of citizenship, healthy living, and science, engineering, and technology.4-H provides participants with an opportunity to develop strong, positive relationships with adults while engaging in meaningful activities. By placing an emphasis on youth-adult partnerships, both members and volunteers can effectively learn, plan and work together to thrive.

Future Farmers of America. The mission of Future Farmers of America (FFA) is to prepare future generations for the challenges of feeding a growing population. FFA helps its members to develop their unique talents and explore their interests in a broad range of careers. Today, Future Farmers of America may also be the future biologists, future chemists, future veterinarians, future engineers, and future entrepreneurs of America. The FFA

offers agricultural education at Westmont High School in Campbell, Live Oak and Ann Sobrato High Schools in Morgan Hill, and Gilroy High School in Gilroy. Classes offered include food science, agriculture biology, agricultural mechanics, environmental horticulture, agriculture geology, and veterinary science. FFA programs include a focus on personal leadership growth and development. FFA members have the opportunity to take part in and conduct meetings, practice public speaking, compete in contests based on occupation skills, and get involved in community improvement efforts, among other activities.¹⁸⁶

Santa Clara County Agricultural Commissioner Office. The agricultural commissioner is appointed by the County Board of Supervisors. The agricultural commissioner oversees the staff in the County Division of Agriculture, which enforces State laws and Regulations. The mission of each county agricultural commissioner's office is to prevent the introduction, establishment, and spread of destructive insects, plant diseases and weeds into the California's urban and agricultural areas; to provide for the proper, safe, and effective use of pesticides; to inspect nursery stock to assure cleanliness from pests; oversee Farmers' Markets; and ensure compliance with quality standards of produce commercially grown or marketed in the State.

The agricultural commissioner and the farm bureau work closely together to provide training and education to growers and ranchers in the county. Agricultural education includes courses such as pesticide training, new pest management practices, range management, water quality, or irrigation practices that improve conservation.

Santa Clara County Farm Bureau. The County Farm Bureau is a nongovernmental, nonprofit, voluntary membership of farmers, ranchers, and agriculture-related entities that protect and promote agricultural interests and find solutions to the problems of the farm, the farm home, and the rural community. The County Farm Bureau protects and improves the ability of farmers and ranchers engaged in production agriculture to provide a reliable supply of food through responsible stewardship of California's resources. There are 53 County Farm Bureaus in California. Together they are integral parts of the larger California Farm Bureau Federation and the American Farm Bureau Federation.

The Santa Clara County Farm Bureau also undertakes efforts to educate schoolchildren about agriculture. The Farm Bureau offers financial and technical assistance for school gardens and organizes local farmers and ranchers to speak at elementary school farm days and career days. The Farm Bureau works with traditional agriculture education programs like FFA and 4-H to bring in industry experts, increase industry participation with the groups, and showcase career opportunities in agriculture.

Community Alliance with Family Farmers. CAFF is a member-based organization whose mission is to advocate for California family farms and sustainable agriculture. Founded in 1978, CAFF operates programs throughout the state, linking communities to agriculture by educating consumers about where their food comes from, while providing direct assistance to farmers in conservation practices and marketing. CAFF staff work regionally to build food systems with multiple stakeholders. CAFF's food system education efforts are delivered to students through the Farm to School program, which combines fun educational programs with access to fresh, local food to address the complex issues of childhood obesity. CAFF also develops and coordinates on-the-ground programs and through CAFF's locally sourced Harvest of the Month program. CAFF works closely with school food service directors, food service staff, farmers, and the produce industry to bring more local fruits and vegetables to school menus, helping to strengthen local farm economies and connect kids to the sources of their food.

Bay Area Chrysanthemum Growers Association. The Bay Area Chrysanthemum Growers Association was founded by Chinese flower growers in 1956 to "encourage business professionals to network and brainstorm on issues and ideas that will benefit the business community as well as the community around them."¹⁸⁷ Today, the association serves about 150 Chinese-American farmers in San Mateo, Santa Clara, and San Benito counties, who primarily grow Asian vegetables in greenhouses, although some flower growers do remain. The association serves its members by providing educational opportunities and networking for this largely non-English-speaking population, as well as cooperative purchasing of supplies.



photo credit: Nancy Barrera

Agriculture and Land-Based Training Association. The Agriculture and Land-Based Training Association (ALBA) "provides educational and business opportunities for farm workers and aspiring farmers to grow and sell crops grown on two organic farms in Monterey County, California." ALBA primarily works with Latino growers and has trained a number of beginning farmers who now operate small farms in Santa Clara County. ALBA's programs include training in organic farm production, marketing, record-keeping, labor law, pest management, and numerous other topics related to operating a small farm business.¹⁸⁸

4. Santa Clara County's Food Distribution System

4.1 Introduction

Santa Clara County is home to diverse populations, many of whom are challenged with lack of access to healthy food. At the same time, farmers in the region are vulnerable to development pressures and diminishing profits. These issues are interrelated. By increasing overall demand for local, fresh, and healthy food in the county, we can increase the market share available for local producers. Enhancing consumer awareness and education about local foods while increasing distribution infrastructure to support local procurement in businesses and institutions can improve both the health and the economic viability of Santa Clara County.

When distributors, manufacturers, retailers, institutions, and consumers work together to demand local agriculture, they are supporting the viability of local growers. Improving sustainability of agriculture in the county requires building a regional food system that supports its producers during each step of the process. Preserving our local production agriculture can help to feed the inhabitants of the county's large urban centers and act as a form of community and household food security.

This chapter is an overview of the existing infrastructure, distribution, marketing, and sales that occur in the commodity chain that reaches from the farmer's gate to the consumer's table in Santa Clara County. A food system infrastructure is made up of all the facilities that support growers in harvesting, packing, aggregating, processing, storing, and distributing or shipping their product to the consumer. The goal of this chapter is to examine both the barriers to distribution systems that support local agriculture and the benefits that they can bring to local farmers and residential communities.

Global Food System vs. Regional Food System. In a paper on Regional Agricultural Marketing published by the UC Davis Agriculture and Natural Resources Sustainable Agriculture Research & Education Program, the authors summarize the challenges of our current food system: "[T]oday's global marketplace present[s] California agriculture with many challenges ... As the costs of land and production have gone up, the number of farms and farmers, acreage devoted to agriculture, and commodity market prices have decreased. As I talk to farmers across the country, regardless of what they produce or where, they all share one common challenge: how to best move product from the farm to the marketplace. This is especially crucial for small and midsize farmers who may not have enough capital to own their own trucks, their own refrigeration units, or their own warehouse space. They might not have the resources to develop sophisticated distribution routes, build effective marketing campaigns, or network with regional buyers and customers. -Kathleen Merrigan, USDA Deputy Secretary, April 2011

Concentration is also happening [at each point in the food system] ... Farmers who are linked to large consolidated firms through contracts are losing power to make independent management decisions. Overall, fewer companies have greater control over the food economy."¹⁸⁹

Limited access to regional processing facilities, slaughterhouses, cold-storage facilities, auction markets, and distribution centers can hamper growth among producers, particularly small and medium-sized producers. It can also limit their ability to offer local products in season at affordable prices to county residents. A paper published by the Leopold Center for Sustainable Agriculture states, "midsized farms are the most vulnerable, since they are too small to compete in the highly consolidated commodity markets, and too large and too commoditized to take part in the direct marketing and value-added practices that many smaller operations utilize."¹⁹⁰ As currently set up, our food system favors larger operations primarily because of economies of scale that provide cost advantages when goods are produced at a larger scale. Small and midsize family farms might struggle to compete with large-scale producers who have more mechanized production and produce large quantities of food to market.

These issues are particularly relevant to Santa Clara County, where 75 percent of the county's 1,068 farms are classified as small family farms, a category the U.S. Department of Agriculture (USDA) defines as a farm that grosses no more than \$250,000 in annual sales.¹⁹¹ According to the most recent USDA census, in 2007 Santa Clara County had 455 farms that ranged from 1 to 9 acres and 348 farms that ranged from 10 to 49 acres.¹⁹²

Alternatively, in a regional food system model, as much as possible of the food required to feed the region's population is produced, processed, distributed, sold, and purchased at multiple levels within the region. This system maximizes resilience, minimizes imports of food from outside the region, and provides significant economic and social returns to all stakeholders in the region. The goal of a regional food system is to ensure communities' economic, ecological, and social sustainability.¹⁹³ Many organizations across the country, as well as members of the Santa Clara County Food System Alliance, are working to develop local food systems by creating urban agriculture opportunities, engaging the community in growing its own food, establishing local marketing campaigns, linking local farmers to businesses and distributors, and developing farm to school and institution programs.



photo credit: Aziz Baameur

In the following sections, we will look at Santa Clara County's existing food system infrastructure, following the food supply chain from the farmer's harvested product to the variety of steps and potential avenues that agricultural products go through to reach the local consumer's table.

PRODUCTION	Inputs such as seed, feed, and harvesting services and equipment
PROCESSING	Activities such as washing and bagging lettuce, bottling, drying and freezing food
AGGREGATION & DISTRIBUTION	Things such as marketing cooperatives, storage facilities, brokerage services, logistics management, and delivery trucks
RETAILING	The act of selling or serving food to consumers, from restaurants, grocery stores, and hospitals, to schools, prisons, caterers, and fast-food outlets
MARKETING	The effort that goes into promoting products such as billboards, coupons, advertising campaigns, packaging materials, branding, and more
CAPITAL INPUTS	Four types are involved: (1) Financial capital in the form of loans, investments, and other financing; (2) natural capital of land, water, and other ecological resources; (3) the human capital of creativity, labor, and other talent, including education and training; and (4) social capital from churches, youth groups, chambers of commerce, etc.

Table 4.1 Food System Infrastructure and Distribution Activities

http://www.michiganfood.org/assets/goodfood/docs/Food_System_Infrastructure_Report.pdf

Food system infrastructure includes everything needed in the chain of activities between the producer and the consumer (Table 4.1). The supply chain involves businesses and resources such as seed, feed and compost suppliers, food processors, distributors, and retail outlets.

Distribution describes the critical and complex activities that move food products from pre-farm gate to postfarm gate. A successful local produce distribution system transfers farm-fresh produce to the food service buyer and/or consumer in a way that is advantageous for both the farmer and the buyer.

Post-Harvest Handling. After farmers harvest their crops, they often need to be cleaned, cooled, dried, graded, ripened, and packed. This post-harvest handling can take place either on- or off-farm.¹⁹⁴ Many growers in Santa Clara County do their own packing, cold storage, and/or shipping. Some farmers aggregate production with other neighboring farms. For example, larger family farms often contract with smaller neighboring farms to combine their production, packing and shipping under the larger farm label. Larger growers are more likely to have on-farm facilities such as refrigeration, different aggregation and packaging methods, preset distribution contracts, and a sales and marketing team. Most distribution companies include cold storage warehouses. As shown in Table 4.2, only one company was identified as a cold storage unit "for hire."

To help us better understand Santa Clara County's food system infrastructure and distribution system, members of the SCCFSA's Agricultural Viability Committee interviewed 27 Santa Clara County farmers about their farming practices, regional infrastructure, sales, and marketing.¹⁹⁵ Of the growers interviewed, 44 percent do their own packing, 7 percent perform additional chopping, and 14 percent have the capacity to cool or refrigerate their product once harvested, while others field-pack their produce and put it on a truck for delivery. Only a handful of growers expressed an interest in further processing to make value-added products; however this question was asked prior to the adoption of the Homemade Food Act (AB 1616), which helps small businesses produce and sell food made out of their homes under a more streamlined regulatory structure.

Prior to the interviews, we had limited information about the number of farms that have cooling and processing facilities on-farm in Santa Clara County. Regulators are not required to audit specific data of on-farm small refrigerators.

Food Processors and Manufacturing

Manufacturers and processors transform raw farm products into a wide range of value-added foods, from those that require little additional processing, such as juice or conserves, to more complex, multi-ingredient foods.¹⁹⁶ The eight food processors identified in Santa Clara County are listed in Table 4.2. A report on food manufacturing in California from the Office of Economic Development at Cerritos College identified Santa Clara as one of nine counties in California that have between 151 and 350 food manufacturing firms. In comparison, 48 counties had fewer than 150 food manufacturing firms. The report estimated that in 2009 there were 14,417 food manufacturing in Silicon Valley (which was defined as including Monterey, San Benito, San Mateo, Santa Cruz, and Santa Clara Counties).¹⁹⁷



Table. 4.2. List of Cold Storage and Processors/Handlers in Santa Clara County

Cold Storage Airdome Orchards

Processors/Handlers

Olam International Tres Picos Monterey Gourmet Foods Christopher Ranch George Chiala Farms Uesugi Farms Santa Clara Nut Company Lucy Walsh Organic Farm Table 4.3. Wholesale Produce Distributors, Who Store, Refrigerate, and Distribute in Santa Clara County

Located in Santa Clara County **Chef Choice Produce** T & S Produce Hacienda Produce Asiana Produce South Valley Produce Guicho's Produce Fresh & Best Produce Silva Produce America Fresh Produce **Coastal Fresh Produce** Custom Ripe Avocado Company L K Produce New San José Wholesale Food **B-T** Company Chong's Produce

Service Santa Clara County **But Located Outside** the County **Fresh Point** Pacific Rim Earl's Organic SF Specialty Veritable Vegetable **Stanley Produce Greenleaf Produce VegiWorks Daylight Foods Bay Cities Produce Cook's Company Produce** San Francisco Terminal Produce Market

Wholesalers/Distributors

Wholesalers "buy raw food products in large quantities from producers, processors, packers or shippers, and brokers. Then they sell these products in bulk to retail, food services, and restaurant outlets. The terms wholesaler and distributor are sometimes used interchangeably and are combined in the name wholesale distribution center."¹⁹⁸ A wholesale distribution center is a large facility that serves as a consolidation and distribution point in the food retail chain.¹⁹⁹ There are 27 wholesale distributors who service Santa Clara County; 15 are located in Santa Clara County and 12 are in San Francisco and Alameda Counties, as shown in Table 4.3.²⁰⁰ This number does not include growers who pack and deliver their own product. We also identified four produce wholesale distributors located in San José who import produce only from Hawaii and Florida, also listed in Table 4.3.

Figure 4.1. Tiers of the Food System



http://www.rupri.org/Forms/RUPRI_Rural-Futures-Lab_2010_Food_Systems_for_Rural_Futures.pdf

There are several models for distributing a farmer's product to the consumer (Figure 4.1). Some of these models work better to serve a re-localized, regional food system because there is a closer relationship between the grower and the consumer, or at least the food's grower is identified for the consumer. The distribution models listed below are common ways that food is distributed to consumers. The distribution models used in Santa Clara County vary depending on proximity to local farms, ability of farms to deliver, infrastructure of the food buyer's operation (small restaurant versus a hospital), size of the orders, and many other factors.²⁰¹

- Farmer Direct—Farm delivers directly to food buyers. This method works well for small businesses located near farms or for farmers that have on-farm infrastructure such as cooling facilities or trucks. It also requires flexibility from the food service operators to work with multiple vendors and to adapt if the product supply changes due to weather, size differences, quantity changes, etc.
- Farmer Cooperatives or Association of Growers—Purchases from multiple farmers through one point of contact. Many focus primarily on marketing rather than on distribution. They are often organized around one product rather than a full range of products.
- Nonprofit Allied Distributor—A nonprofit organization manages distribution between farmers and customers, often designed to support small, local farmers. Only a few programs exist in select regions, and they are often grant-subsidized programs. Examples include Marin Organic and ALBA Organics in Watsonville.
- **Regional Food Hubs**—The USDA's definition of a food hub is still evolving, but its core function is the aggregation and storage of local product. An aggregation center does not necessarily offer distribution, but it serves as a drop-off point for multiple farmers and a pickup point for distribution firms and/or customers who want to buy source-identified product. There are a variety of different

strategies or services that food hubs can offer: some have commercial kitchens where food businesses can make value-added products for consumers; some are open to the public like a farmers' market; some aggregate and deliver; some allow cross docking at their warehouse; and there are others.

Broadline Distributor—A broadline distributor carries a "full line" of products, including dry grocery, frozen, and tabletop goods; equipment and supplies; and perishable items such as meat, dairy, and produce. The typical broadline distributor carries over 5,000 items in stock keeping units and provides delivery, credit, sales representation, and other value-added services to its foodservice operator customers. More often than not, broadline distributors do not source-identify local produce. However, some are starting to carry a local line in their offerings. The distributor must create a system that allows for source identification and tracking of local product, and must be able to aggregate from multiple farmers.



- Produce Distributors/Wholesalers—One business operator picks up produce from several growers to aggregate and distribute the product; typically there are only perishable items or just produce. Conversely, a broadline distributor carries a variety of supplies—both perishable and nonperishable or nonedible items.
- Small Aggregators—This is a type of shared delivery arrangement among multiple farmers who collaborate to service accounts. Farmers pool their product so that either one farmer can do the delivery or produce distributors pick up from one farm's site. The aggregation site can be anywhere that is centrally located and optimally has refrigeration; the site can be one of the participating farms. Santa Clara County clearly has a variety of producers and plenty of consumers, yet often a consolidated food system presents obstacles to growers. In terms of distributing product to food service buyers (grocery stores, hospitals, school districts, tech company cafeterias, etc.), some challenges commonly emerge in our current food system. First, to increase efficiency, some broadline wholesale distributors buy from one or two large farms outside of the region, where they can get large quantities at low prices, to serve the contracts they have with food service companies, institutions, or retail outlets. Driving to multiple small and medium farms throughout South County to take products back to their warehouse in North County creates additional costs for the distributor.
Often, growers have to or want to work with a food service buyer's distributor to get their product into a food service company, grocery store, or institution. However, at times this arrangement can result in less profit for some growers than if they had been able to sell directly to the end user. A farmer's cost/benefit ratio depends on the distributor fees, permitting fees to work with a distributor, and the tradeoffs between time spent on the farm and time spent in delivery.

At times, distributor requirements can be cost prohibitive to small and midsize farmers. For example, high liability insurance can make working with a distributor too expensive. Additionally, the needs of distributors do not always match up with those of producers: a distributor might have enough of a particular product in their warehouse from purchasing the produce from a large-scale farm in the Central Valley, for example, which would preclude the need to purchase locally. Therefore, it can be challenging for the small or medium-size grower to be able to acquire a sale to or a contract with some distribution companies.

Finally, because Santa Clara County does not have its own terminal market, reverse shipping often occurs, particularly because nearly all production agriculture in Santa Clara County occurs south of the Highway 85–Highway 101 intersection. Reverse shipping occurs in Santa Clara when, for example, one of the distribution companies that service many school district accounts in the area picks up from farms in Gilroy and drives their products to a warehouse in Alameda County. Then, when food service directors in the southern part of the county order those produce items, they have to be driven back down to South San José, Morgan Hill, and Gilroy. Or reverse shipping can occur when a distribution company has to drive 45 miles to South San Francis-co Terminal Market to purchase large quantities of produce to service their food service accounts. If there were a San José Terminal Market or a central docking location in South County, farms would have one central dropping point, and distributors would have one central pickup point.

4.2 Farmer Direct: Farm to Consumer

Direct sales, the sales of agricultural products directly from the producer to the consumer, are one strategy for enhancing local systems. Restaurants sales, farmers' markets, Community Supported Agriculture (CSA), farm stands, and other direct marketing mechanisms create relationships between producers and consumers that benefit both. When farmers source directly to a consumer or business, they can often keep a larger portion of the profits from the sale of their products. Consumers get fresh, local foods and can develop a greater understanding of how, where, and by whom their food is produced.

Despite the growing interest in access to healthy foods, few people are utilizing or marketing Santa Clara County–grown fruits and vegetables in order to promote consumption. Community gardens, farmers' markets, and other urban access projects that promote growing and eating local food are important for engaging urban consumers and providing them with easier access to fresh produce.

Farms with Direct Sales. Direct sales, through which producers sell their products directly to consumers, include farmers' markets, CSAs, and farm stands as well as other forms of on- and off-farm sales.

In Santa Clara County, the number of farms with direct sales has held relatively steady over the last 15 years. According to the most recent USDA census data from 2007, there were 112 farms in Santa Clara that sold their products directly to consumers. The value of direct sales in Santa Clara County was \$1,943,000 in 2007. The dollar value of direct sales in Santa Clara is very small relative to total agricultural sales.²⁰²

Farmers' Markets. At farmers' markets, which are usually held on a weekly basis, producers sell directly to consumers. Farmers' markets provide consumers with access to locally grown, healthy, seasonal foods. They are also an important source of economic support for local food producers, who can receive retail prices for their products by marketing directly to consumers.²⁰³ By making local food producers and local food products more visible, farmers' markets help to raise community awareness about the possibilities for local food production.²⁰⁴ Farmers' markets also strengthen community ties as neighbors from many different socioeconomic backgrounds gather together, and they can enhance local economic development as visitors to farmers' markets support other businesses.²⁰⁵

Because of growing interest in supporting and eating locally produced food, the number of farmers' markets has risen rapidly, nationally and in California. In 2012, California had the most farmers' markets (847) of any state.²⁰⁶ Paralleling this trend, Santa Clara County has seen a steady uptick in the number of farmers' markets. In 2013, Santa Clara County had 36 farmers' markets, an 80 percent increase from 2005, when the County first started reporting this data (Figure 4.2).²⁰⁷ On average, more than 1,000 shoppers visit each of the county's farmers' markets each market day during the peak growing season. The typical Santa Clara County farmers' market offers a large number of vendors; on average there are 34 vendors per market.²⁰⁸ Although interest in locally grown foods is on the rise, creating viable farmers' markets can still be challenging. As of September 2012, eight farmers' markets in Santa Clara County had been canceled since the beginning of the year.²⁰⁹







Veggielution CSA Program While CSA produce shares often serve higher-income residents of Santa Clara County, several urban farms in Santa Clara County are providing food boxes to low-income community members. Veggielution, a community farm in East San José, provides low-income families with fresh, local, and sustainably grown vegetables at low cost. Farm shares provide produce to community members, with two-thirds of boxes serving low-income families at below market rates and one-third of sponsor shares serving other community members at above market rates, helping the family share program to be economically self-sustaining and scalable. Low-income participants are able to pay for their box of vegetables using CalFresh. Veggielution supplements their boxes with vegetables purchased from other local sustainable small farms to increase variety.

In general, the growing number of well-attended farmers' markets in Santa Clara County suggests an overall increase in access to locally and regionally produced food. However, low-income people's access to farmers' markets may be limited by the affordability of the produce sold there, the cultural appropriateness of the food available, and a lack of farmers' markets in close proximity.²¹⁰ Currently, 19 out of 36 Certified Farmers' Markets (CFMs) in Santa Clara County accept food assistance programs (i.e., CalFresh—formerly known as food stamp—benefits).²¹¹

Community Supported Agriculture. Community Supported Agriculture (CSA) refers to a group of consumers who help fund a farm by purchasing a share of the farmer's yield in advance. These shareholders then receive a portion of the farmer's harvest, which is distributed regularly throughout the growing season. Shareholders may also be invited to the farm to take part in the farming experience. In a CSA, the relationship between producers and consumers is meant to be one of mutual support and benefit. By receiving payment in advance, farmers gain some financial security. In return, consumers receive healthy, fresh, local produce, while sharing in the risks and potential bounty of farming.²¹²

CSAs have been shown to increase members' access to fresh fruits and vegetables and to increase the variety and quantity of produce that members consume.²¹³ Conceived of as more than just a marketing mechanism, CSAs are intended to improve the viability of local farms, to reconnect people with the source of their food,²¹⁴ and to increase consumers' awareness of the complexity, importance, and challenges of farming locally.²¹⁵

In 2010, ChangeLab Solutions identified 22 CSAs delivering to Santa Clara County. Together these CSAs served approximately 5,925 households. It is important to note that this number represents the total number of members in the CSAs, not only the number of members who reside in Santa Clara County. Just over a third of these CSAs (36 percent, or eight farms) were located in Santa Clara County. The Center for Agroecology & Sustainable Food Systems (CASFS) conducted a study characterizing CSAs operating in the Central Coast region, including Santa Clara County. In general, these farms grew organic vegetables and fruits, offered an average of 80 shares, tended to be relatively small (17 acres or less), and had been operating for an average of 5.5 years.²¹⁶

Although produce from CSAs is generally less expensive than produce from grocery stores, having to pay upfront can be a barrier to access for low-income families.²¹⁷ According to the CASFS study, Central Coast farmers were aware of the difficulties low-income people had accessing food through CSAs.²¹⁸ All the farmers in the study reported taking some action to address the issue of access, such as offering reduced-price shares, giving away unclaimed boxes, and offering workshares to reduce the price, but they acknowledged that they were unable to help large numbers of low income people.²¹⁹

However, the access issues surrounding CSAs remain a challenge; as the study's authors note, the financially precarious position of many farmers means "they cannot reasonably be expected to subsidize food for people with low incomes." However, in Santa Clara County, several urban farms are now providing subsidized CSAs for low-income residents.

Farm Stands. A farm stand is a place at or near the point of production where California farmers sell fresh produce, eggs, and some value-added farm products—such as jams, olive oil, bottled honey, and dried fruit—directly to consumers.²²⁰ The County Crossroads Map—an annual publication of the Santa Clara County, San Benito County, and Santa Cruz County Farm Bureaus—lists farms on the Central Coast that sell directly to the public. In 2012, the map included 21 farms selling directly to the public in Santa Clara County. These farms, ranches, and vineyards offer a range of products, including stone fruit, berries, eggs, Christmas trees, hay, vegetables, and mushrooms. However, the County Crossroads Map is not comprehensive; it shows only those producers who have paid a fee to be included in the map. Because farm stands do not necessarily require permits, there is no official record of the total number of farm stands in Santa Clara County at this time.

4.3. Farms to Schools and Institutions

Institutions such as colleges, hospitals, and schools traditionally contract with food or produce distributors in order to serve large numbers of people each day, and they place a greater emphasis on cost and efficiency than on where food was grown. However, some institutional food service operators have started to shift focus and broaden economic bottom line priorities to include purchasing more local products.

When public institutions are sourcing locally, access to healthy, fresh local produce can occur on a broad scale. Although public institutions may not be able to offer a premium price on local produce that direct sales or other retail outlet and food service buyers offer, the volume of produce that some districts purchase each month can have an impact on the economic viability of our local growers.

How much impact can institutions have on local farming economies? A recent farm-to-school assessment by the Community Alliance with Family Farmers Santa Clara Valley office found that if public institutions, such as school districts and hospitals, committed to purchasing just one locally sourced produce item over the school year, they could provide significant economic support to local farming communities. Table 4.4 shows the procurement record of a participating school district in Santa Clara County over the span of one academic year. Although the school district spent \$92,210 on apples for the year, none of the farms that benefited from this school's business were located within a 150-mile radius of the school district, even though there are many apple growers in this region. If this product were sourced locally, it would have a positive economic impact on local agriculture. Additionally, of the school districts surveyed, eight out of the top 10 produce items most commonly purchased by school food service directors are grown locally yet are not sourced specifically from Santa Clara County growers.

Produce Item	Average Cost Per	Total # Units	Total \$ Purchased
	Unit	Purchased	
Apples (all varieties)	\$33.04	2,791	\$92,210.19
Bananas	\$26.19	922	\$24,144.69
Broccoli florets	\$11.18	550	\$6,151.69
Carrot sticks	\$17.10	119	\$2,034.84

Table 4.4. Procurement Dollars Spent on Non-Local Produce by a Santa Clara County School District Over One Year

The amount of money that public institutions could spend locally becomes even more significant when it is considered in light of typical farm earnings. According to the USDA, most farming households earn the majority of their income from off-farm employment. In 2011, the median total farm household income, which includes both on-farm and off-farm income, was \$57,050. However the median farm income that year was just \$2,250.²²¹ When considering these statistics, it is clear that the procurement practices of the school district mentioned previously represent a significant missed opportunity. That public institution could be putting \$92,210 back into the local farming community and support the families of the children who attend their district's schools.

The Community Alliance with Family Farmers (CAFF) specializes in working hand-in-hand with restaurants, retail outlets, food service operators such as school food service, hospitals, or tech companies to bring local produce onto the menu. By creating mutually beneficial partnerships with food service departments, the produce industry, and family farmers, CAFF ensures that the relationship with the grower is not lost by the time products reach the consumer. Through regional marketing and branding tools, like the Buy Fresh Buy Local program, CAFF creates new connections from farm to table in all of its regional offices, including the Santa Clara Valley regional office. For small and midsize family farmers, connecting to new market streams can be challenging. Conversely, business owners, retailers, and other food service operators who want to support the local agricultural economy can find it challenging to know who their local farmer is at a time when the urban-rural divide can be great within communities. This is what makes CAFF's Buy Fresh Buy Local program so critical and effective.

CAFF works on the ground with both California family farmers and local business to build the relationships between these two sectors to increase the economic viability of CAFF's farmer members. CAFF provides technical assistance and education to institutions, distributors, and consumers about why supporting local agriculture is key to a thriving food system. Point-of-sale marketing materials, print materials such as the Eater's Guide to Local Food, the promotion of a Local Harvest of the Month item, and farmer profiles in restaurants, retail outlets, and schools are effective tools that CAFF uses throughout California. **Marketing and Sales.** Santa Clara County farmers and ranchers have many different approaches to selling and marketing their products. From its survey of 27 Santa Clara County farmers, the Santa Clara County Food System Alliance found that farmers and ranchers sell their produce using the following means: farm stands, farmers' markets, Community Supported Agriculture (CSA), online sales, direct to restaurants, produce distributors, schools and hospitals via a produce distributor, packing houses, wholesalers, brokers, terminal markets, livestock markets, and stockyards. When asked about the challenges associated with accessing new markets, farmers responded that their greatest difficulty was not knowing whom to contact to initiate the process of marketing their own goods either directly to the consumer or to restaurants, grocery stores, and food distributors.

The vast majority of respondents to the Alliance Survey estimated that over half of their crops and livestock production remains in the county. However, determining the final destination of products not sold at farm stands or farmer's markets is difficult. Three in five respondents reported earning a fair price for their products, while the reminder felt they do not earn a fair price.

A paper on the state of agriculture in the Bay Area by the American Farmland Trust, Greenbelt Alliance, and Sustainable Agriculture Education (SAGE)²²² found that members of the Santa Clara County food system have not taken full advantage of the growing interest in local food, farmers' markets, and CSAs, or of the presence of a large number of small-scale farms that are adjacent to urban centers. Despite these trends and local resources, there is little agricultural marketing or agriculture tourism in the county. The paper concludes, "Increasing visibility for Santa Clara agriculture may be a particularly powerful tool in a county with such a strong and politically popular urban agriculture, food justice, and nutrition and food access movement."²²³

Two-thirds of our survey respondents expressed an interest in a marketing or branding campaign to increase their sales. Since 2002, Community Alliance with Family Farmers (CAFF) has established the Buy Fresh Buy Local campaign and published over 10,000 printed copies per region of the Buy Fresh Buy Local Eater's Guide to Local Food in multiple regions around the state to enhance marketing of local agriculture to consumers. The first Santa Clara County–focused Buy Fresh Buy Local Santa Clara Valley campaign began in January 2013. According to the most recent Economic Census in 2007, Santa Clara County had 3,834 food service and drinking places that grossed over \$3.2 billion in sales.²²⁴ This number shows the potential untapped retail and restaurant outlet sales that could be redirected toward Santa Clara Valley growers through a regional marketing program.

In a 2011 survey of consumers exposed to the Bay Area Buy Fresh Buy Local (BFBL) campaign, CAFF found that 84 percent reported increased consumption of fresh, local foods over the past three years, and 84 percent also stated that BFBL program activities had a "significant impact" on their purchasing decisions. One-third of the survey respondents said they participate in agritourism, and the other respondents were split on whether or not they were interested in participating in agritourism.

Challenges. As stated earlier, 75 percent, or 803, of Santa Clara County farms are considered small farms, with 50 acres or less. In terms of distributing products to food service buyers (e.g., grocery stores, hospitals, school districts, and tech company cafeterias), challenges arise when there is no option for a farmer to sell directly to a large-scale buyer or to wholesale distributors. Small and midsize farms face the following challenges:

1) Wholesale distributors often prefer buying from larger farms rather than buying from multiple farms; and 2) many vendors (e.g., schools or grocery stores) have a contract with one large broadline distributor, so selling directly to those vendors is not an option. In this scenario, reverse shipping often occurs, as the broadline distributor company located in an urban area purchases produce from a farmer in a rural area, transports the produce to their urban warehouse, and later sells the produce back to institutions in the rural area where the food was grown. For example, school districts in the South County are buying local produce from Gilroy growers. However, because they are required to buy it through their contracted distributor, the produce is trucked to South San Francisco Terminal Market and then brought back to Gilroy; and 3) many distributors aggregate the produce, populate an ordering sheet for their customers, and then do not label the products' origin. The customers, therefore, do not know if they are buying bell peppers grown in Santa Clara County or elsewhere. Under these circumstances, creating relationships between producers and consumers can be challenging.

A more robust system for distributing locally grown food and more conscious sourcing and labeling of local food could benefit both food buyers and local growers and promote a connection between our county's urban consumers and local producers. Because so much of our county is urban, the majority of the population is not well informed about the food that is grown in the southern part of the county. Labeling locally grown food could help to raise local consumers' awareness of agriculture in the county. Food buyers could be directing a large portion of their food service budgets toward local growers. They could also use their commitment to buy from local growers—with farm names to verify that commitment—to market their institution to its customers. To increase sourcing of local food, the distribution systems will need to be geared toward purchase from small and medium-sized farmers, and the produce will need to be labeled and identifiable as local. When more food service buyers and retail customers purchase more food that is identified as locally or regionally grown, a more sustained and viable agriculture will be possible. Connecting healthy food access with agricultural support and land preservation efforts is necessary to ensure the economic viability of Santa Clara County growers in the face of an expanding Silicon Valley.



5. Consumption

Food consumption "includes all activities and processes by which an individual, society and culture acquires and utilizes food material that has been produced and distributed."225 Sustainable food consumption "has to be safe, healthy in quantity and quality, and realized through means that are socially, economically, and environmentally sustainable."226 This chapter divides the discussion of food consumption in Santa Clara County into four sections: the population's food requirements, the retail food environment, food assistance programs aimed at increasing community food security, and the health status of residents.



photo credit: Nancy Barrera

5.1 Present and Future Consumption Needs

The 2008 *San Francisco Foodshed Assessment* estimated that it took 6.4 million tons of food annually to feed the Bay Area's 6.9 million people; this number takes into account the losses that occur as food makes its way from the farm to our dinner plates.²²⁷ Adapting this calculation to Santa Clara County, it takes an estimated 1.6 million tons of food production annually to feed Santa Clara County's population of nearly 1.8 million people.²²⁸ By 2060, Santa Clara County's population is projected to reach almost 2.2 million.²²⁹ To feed our county's population, then, will require the production of an estimated 2 million tons of food per year.

Our current actual consumption of vegetables is significantly lower than recommended. If Santa Clara County's current 1.8 million residents ate the recommended amount of vegetables, they would be consuming about 420,000 tons of vegetables per year. This would require 719,300 tons per year of farm production, owing to the losses that occur during production, distribution, and retail. In 2060, our county will need an estimated 879,000 tons of farm production to supply the recommended consumption of vegetables.

Farmland is basic to producing the vegetables, fruits, and other foods that make up a healthy diet. The farmlands of Santa Clara County and our extended region supply our regional population as well as the nation and world

beyond. Our lands and climate enable us to grow a unique range of crops. To meet the growing demand for food, it is important that we preserve our agricultural land, increase water-use efficiency, and address climate change, among other strategies.

5.2 The Retail Food Environment

Retail food stores are places where people purchase food products.²³⁰ Food retail can include, but is not limited to, grocery stores, convenience stories, restaurants, and farmers' markets. Because all Santa Clara County residents rely on some form of food retail to acquire the food they eat, food retail is a key point in the county's food system for determining whether residents have access to the healthy, affordable, and culturally appropriate food they need for an adequate and nutritious diet.

Research shows that retail access to healthy food is strongly correlated with eating behaviors.²³¹ People with better access to stores selling healthy food consume more fruits and vegetables than people with limited retail access to healthy food. Studies that look at the relationship between access and diet-related health outcomes have found that the presence of a supermarket or other vendor selling fresh produce contributes to lower rates of obesity and diabetes.²³² In addition to improving diets and health, bringing in new healthy food retail in historically underserved communities can create jobs and strengthen local economies.²³³



Food Retail Demand. By looking at data on consumer expenditures in the Bay Area, we can get a sense of the market demand for food in Santa Clara County. The aggregate number provides an estimate of the food purchasing power of Santa Clara County residents. In 2009–2010, the average Santa Clara County household spent \$7,920 on food for the year, which is equivalent to 11.8 percent of household spending. Multiplying the amount that individual households spend on food by all the households in the county, we estimate that in Santa Clara County an average of \$4.75 billion is spent on food each year, as shown in Table 5.1. Of that amount, \$552 million is spent on fruits and vegetables and \$506 million is spent on meat, poultry, fish, and eggs. All of these amounts exceed the gross value of Santa Clara County's agricultural production for 2011, which was just under \$248 million, suggesting that there is market demand for food that could be met by additional local and regional products.²³⁴

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	Average spending per household in the San Francis- co Bay Area ²³⁵	Estimated total spending for all Santa Clara County house- holds
Households in Santa Clara County		
(2007–2011) ²³⁶		
Total spending per household	\$67,360	
Total food spending	\$7,920	\$4.75 billion
Food at home	\$4,214	\$2.53 billion
Cereals and bakery products	\$576	\$345 million
Meat, poultry, fish, and eggs	\$843	\$506 million
Dairy products	\$457	\$274 million
Fruits and vegetables	\$920	\$552 million
Other food at home	\$1,418	\$850 million
Food away from home	\$3,706	\$2.22 billion

Table 5.1. Santa Clara County Annual Food Expenditures

The Retail Food Environment Index. In Santa Clara County, fast-food restaurants and convenience stores are the most common types of retail food stores (Figure 5.1). Convenience stores typically offer processed foods with a limited selection of dairy products and perhaps a few fruits, while full-service supermarkets offer the consumer a wide range of food choices, including a variety of vegetables and fruits.



Figure 5.1. Distribution of Retail Food Outlets in Santa Clara County, by Type²³⁷

The Retail Food Environment Index (RFEI) looks at the balance between unhealthy food outlets, which offer few fresh fruits and vegetables, and healthy food outlets, where fresh fruits and vegetables are readily available. It is calculated by dividing the total number of fast-food restaurants and convenience stores in a given area by the total number of supermarkets, farmers' markets, and produce stores in the same area. Recent research has shown that the health impacts of the food environment are affected not just by the presence or absence of healthy food resources but also by the relative ease of access to both healthy and unhealthy food outlets. Thus, it matters for healthy eating behaviors if a neighborhood has many more fast-food, convenience, or liquor stores than grocery stores or produce vendors.²³⁸

In 2005, Santa Clara County had a Retail Food Environment Index of 4.32, which means there were more than four times as many convenience stores and fast-food restaurants as full-service supermarkets and other produce vendors in the county.²³⁹ Among nearby counties, only Solano (5.08), Contra Costa (4.66), and Alameda (4.61) Counties scored worse. San Francisco (3.85), San Mateo (2.79), Sonoma (2.52), Monterey (2.14), Marin (1.85), and Santa Cruz (1.84) Counties all showed a better balance between healthy and unhealthy retail food outlets. Comparing major cities in the region, San José (4.62) scored worse than either San Francisco (3.85) or Oakland (3.81).

Within Santa Clara County, low-income neighborhoods have unhealthier food retail environments than high-income neighborhoods.²⁴⁰ The Food Empowerment Project found that while higher- and lower-income areas have almost the same number of convenience stores, there are nearly twice as many large, full-service supermarkets in higher-income neighborhoods as in lower-income neighborhoods in the county. There is also better access to fresh, frozen, and organic produce in higher-income than lower-income areas. For instance, 42 percent of food locations in higher-income areas carried fresh fruits compared with 17 percent in lower-income areas. Forty-four percent of food locations in higher-income areas carried fresh vegetables, compared with 16 percent in lower-income areas.²⁴¹

Similarly, a ChangeLab Solutions report, which looked at retail stores as well as farmers' markets, Community Supported Agriculture, and community and school gardens, found that there is unequal access to healthy foods in Santa Clara County. Consistent with the RFEI, this report found that a number of low-income neighborhoods in Santa Clara County lack healthy food resources that are accessible by walking. These neighborhoods also have a higher concentration of fast-food restaurants and convenience stores. In San José, only 15 percent of low-income households were within one-half mile of a healthy food resource, compared with 50 percent in Palo Alto.²⁴²

ChangeLab Solutions identified cost as another barrier to healthy foods for low-income residents. For example, the premium prices at many farmers' markets may be out of many low-income families' budgets. That 47 percent of Santa Clara County farmers' markets do not accept CalFresh also makes them less affordable and accessible for low-income families.²⁴³ Access to healthy food resources is a particular concern in cities—such as Gilroy, Campbell, San José, Santa Clara, Mountain View, and Sunnyvale—where more than half of residents are low-income and more than 80 percent of low-income households are located more than one-half mile from a healthy food resource.²⁴⁴

In addition, a recently released report on the status of Latino/Hispanic health in Santa Clara County found that there were disparities in the local food environment between neighborhoods with a larger proportion of Latinos and neighborhoods with a smaller proportion of Latino residents that may limit access to high-quality, healthy, and affordable foods.²⁴⁵ While the average distance to a supermarket or large grocery store is shorter in neighborhoods with a high proportion of Latino/Hispanic residents. Supermarkets and large grocery stores, which are most likely to meet benchmarks for quality, account for only 18 percent of retail food outlets in these neighborhoods. The study also found that unhealthy marketing of food is widespread on the exterior of retail food stores and by the checkout counters in neighborhoods with a greater proportion of Latinos. The study suggests that the high cost of healthy foods and the poor quality and lack of variety of produce offered could be key food access issues in these neighborhoods. These factors may contribute to the lower consumption of fresh fruits and vegetables by the county's Latino/Hispanic residents.

Improving the Retail Food Environment. The Campaign for Healthy Food San José²⁴⁶ started in September 2011 as a yearlong coalition with the objective of improving the retail food environment in Santa Clara County. Led by the Health Trust, the Campaign coalition includes the City of San José, FIRST 5 Santa Clara County, Pacific Coast Farmers' Market Association, and Working Partnerships USA. With the goal of ensuring access to fresh fruits and vegetables in all neighborhoods, the Campaign sought to make changes in city policies that would increase urban agriculture, particularly in areas with few healthy food options; bring Certified Farmers' Markets (CFMs) and mobile produce vendors into low-income communities; and encourage the use of Electronic Benefit Transfer (EBT).

The Campaign has conducted extensive community outreach, reaching roughly 1,000 low-income San José residents, and its work has led to the adoption of a new ordinance for farmers' markets and the creation of agreements for expanding community gardens. In particular, the City of San José adopted a new Specific Use Regulation that streamlines the permit process for CFMs and requires all CFMs to establish a way for customers to pay with food assistance benefits. CFMs that are located on private property and have 15 or fewer vendors are no longer required to get a land-use permit. The new ordinance allows CFMs to be approved more quickly and at less expense while maintaining public safety. It also expands low-income residents' and food assistance beneficiaries' access to fresh produce.

In addition, the City of San José Department of Parks, Recreation, and Neighborhood Services (PRNS) drafted model joint-use agreements that would support community gardens on publicly owned lands. These included agreements for residents or community groups to access publicly owned land for urban agriculture, to incorporate community gardens into the development of new and existing parks, and to prepare guidelines that would allow for the sale of produce from community gardens, among others.

Two of the Campaign's projects are still in progress. As part of the Fresh Cart Silicon Valley project, the campaign is requesting that San José revise its mobile vending ordinance to make it easier for vendors to sell fruits and vegetables in San José. The Campaign is also working on a policy that would guide the operation of CFMs on city park properties.

5.3 Community Food Security

The USDA defines food security as "access by all people at all times to enough food for an active, healthy life."²⁴⁷ Achieving food security requires both physical access to adequate, nutritious food and sufficient economic resources to obtain that food. When these conditions are missing, a household may experience food insecurity, which is defined as "a household-level economic and social condition of limited or uncertain access to adequate food."²⁴⁸ At moderate levels of food insecurity, people may experience anxiety; reductions in the quality, variety, and desirability of their food; and trade-offs between food and other basic needs. At more severe levels, food insecurity can cause reduced food intake, extended periods without food, and hunger.²⁴⁹

A growing community food security movement looks beyond the important work of improving access to food at the individual or household level to the availability of and access to food at the community level. This movement defines community food security as "a condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice."²⁵⁰

Human health and well-being depends on proper nutrition and food security.²⁵¹ Conversely, food insecurity is associated with poor health. Research has found that adults who are food insecure are at greater risk for depression, poor mental health, and chronic diseases, such as diabetes and hypertension.²⁵² In California, women in food insecure households have a greater risk of obesity.²⁵³ Because of its connection to increased illness, food insecurity is also linked to higher health costs.²⁵⁴ Children are particularly vulnerable to food insecurity and the economic challenges currently facing families. Studies have shown that food insecurity is linked to poorer school performance in older children, and it impacts the cognitive development of young children.²⁵⁵



photo credit: Nancy Barrera

Although Santa Clara County is one of the most prosperous regions in the nation, Feeding America estimates that 243,570 residents, or 14 percent of the population, were food insecure in 2010. Nearly 21 percent of the county's children (or 86,480 children) lived in households that were food insecure.²⁵⁶ In Santa Clara County, women, people with less than a college education, and those whose household income is less than \$50,000 per year are at the greatest risk of being food insecure.²⁵⁷

Surveys tracking the number of low-income adults who are food insecure indicate that food insecurity has increased in our county over the last decade. Between 2000 and 2007, the percentage of low-income adults in Santa Clara County who were food insecure rose from 25 percent to 33 percent.²⁵⁸ While the percentage of low-income adults in our county who were food insecure did not increase significantly from 2007 to 2009, the percentage of low-income adults who experienced a severe form of food insecurity that required them to cut back on their food intake rose from 7 percent to 11 percent.²⁵⁹ In part because of the recession, the number of food insecure people has been on the rise in California and nationwide. In 2009, there were nearly four million food insecure adults living in California, and in 2011, there were 17.9 million households in the United States that were food insecure.²⁶⁰

Even as the economy begins to recover, the number of people in Santa Clara County who cannot meet their daily food needs is growing. The Hunger Index, which measures the gap between the need for food assistance and the ability of food assistance programs to provide food, showed that there were 149 million "missing meals" in Santa Clara County in 2011. This represents an increase of 12 million missing meals from 2010.²⁶¹

To further assess food security in Santa Clara County, we examine the local, state, and federal programs that help economically insecure county residents get access to food, whether by addressing emergency food needs (regional food banks and their local partners) or addressing longer-term food security needs (e.g., food stamps and school nutrition programs).



photo credit: Nancy Barrera

Emergency Food Assistance. Feeding America defines a food bank as "a charitable organization that solicits, receives, inventories, stores, and distributes donated food and grocery products to charitable agencies that directly serve needy clients."²⁶² Food banks get food from a number of sources: the USDA emergency food assistance program, food donations or purchases directly from farmers, overstock food from commercial food distributors, private food donations (e.g., food drives), and food purchased from wholesalers or retailers. Food banks distribute this food to people in need through their own direct distribution programs and through local partner agencies—such as food pantries, soup kitchens, home delivery programs (e.g., Meals on Wheels), shelters, senior centers, and children's programs. These local partner agencies are often operated by churches, family resource centers, and other nonprofits.²⁶³

In Santa Clara County, Second Harvest Food Bank has been a primary source of food for low-income residents needing food assistance for over 35 years. Second Harvest Food Bank, which serves both Santa Clara and San Mateo Counties, collaborates with more than 300 local organizations operating at 740 different food distribution sites.²⁶⁴ In fiscal year 2011–2012, Second Harvest distributed over 33 million pounds of food to low-income individuals in Santa Clara County.

Since 2006, Second Harvest Food Bank has operated the Produce Mobile Program to increase access to fresh fruits and vegetables for people in need. Through this program, a refrigerated truck brings fruits and vegetables to various community locations. Each month, this program provides fresh fruits and vegetables to an average of 4,787 households who are living at or below 200 percent of the federal poverty level. (In 2012, 200 percent of the federal poverty level was \$38,180 a year for a family of three.) According to a Second Harvest Client Satisfaction Survey assessing the impact of the Produce Mobile Program, 98 percent of clients report that they are eating more fruits and vegetables, 82 percent say they have more to spend on other needs, and 88 percent report that the fresh produce they receive helps them to improve their diet and manage their health.²⁶⁵

Second Harvest also provides food directly to clients through direct-service programs for specific populations such as families with children under 18 (Family Harvest), seniors over age 60 (Brown Bag), and children at after-school programs (Kids NOW).

CalFresh. In Santa Clara County, the leading source of food assistance is the CalFresh Program (formerly the Food Stamp Program), or, as it is known federally, the Supplemental Nutrition Assistance Program (SNAP). Cal-Fresh can be used at most major grocery stores in the area and at 19 of Santa Clara County's 36 certified farmers' markets.²⁶⁶ In 2011, there were 98,384 CalFresh recipients in Santa Clara County, a 65 percent increase from 2006. This jump in enrollment has been driven by the economic downturn.²⁶⁷

Despite growing enrollment in CalFresh, just 52 percent of eligible individuals in Santa Clara County participated in the program in 2010. As of 2010, 123,343 people were income-eligible to receive CalFresh benefits, yet only 63,741 people used CalFresh.²⁶⁸ Because of the low rate of participation in CalFresh, California Food Policy Advocates estimate that Santa Clara County lost \$164,320,790 in federal benefits last year and lost an additional \$294,134,214 in associated economic activity.²⁶⁹ However, it's not just Santa Clara County that is struggling with participation rates—California is ranked last nationally for its low SNAP participation rate, with only a 55 percent participation rate for eligible people.²⁷⁰ **Barriers to Receiving CalFresh.** A great deal of research has been done to try to determine why California and Santa Clara County's participation rates are so low. A study by Second Harvest found that among people in our county who think they are or might be eligible for CalFresh, the leading barrier to accessing the program was a lack of information about the program and about eligibility.²⁷¹ The difficulty of the application process, which requires providing verification documents for income, rent, child care, identity, and other bills, creates another barrier. County offices are understaffed, so many applicants are unable to get the assistance they need to navigate the complex application process. Homeless applicants must return regularly to the Social Security Administration office in order to get updates on their application status.

Confusion generated by changing eligibility rules and unclear denial and approval letters was another barrier, as were some misperceptions about the consequences of enrolling in CalFresh. Legal immigrants are eligible to apply for CalFresh, but some potential applicants are worried that the applying will negatively impact family members who are undocumented immigrants. In addition, many people seeking food assistance find it deeply embarrassing and are concerned about the stigma of CalFresh being a "welfare" program, especially in an area as wealthy as Santa Clara County.

Households must submit their income and deductions quarterly throughout the year, a requirement that can be difficult for some households to meet and a reason that some people's participation in CalFresh fluctuates. Although it is not a state requirement, Santa Clara and San Mateo Counties have made it mandatory that many nonworking adults participate in the Food Stamp Employment and Training program in order to receive Cal-Fresh, which is a deterrent for some applicants and a reason why other individuals leave the program.

Community-based organizations are helping the Santa Clara County Social Services agency to enroll clients in CalFresh by offering application assistance and follow-up. Second Harvest Food Bank, Catholic Charities, and Daughters of Charity all have staff in the community doing outreach and application assistance.

Women, Infants and Children Supplemental Food Program. In an attempt to help reduce the number of children who are food insecure, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides nutritious foods to pregnant, breastfeeding, and postpartum women and their infants and children up to age five. In 2010, there were 32,447 participants in the program in Santa Clara County. WIC has one of the highest participation rates of federal programs aimed at reducing food insecurity in the county: an estimated 90 percent of those eligible in the county are enrolled in WIC.²⁷²

School Nutrition Programs. While WIC can help support children nutritionally during some of their most critical developmental years, once they turn five, they are no longer eligible. School breakfast and lunch programs help provide missing meals. The National School Lunch Program (NSLP), School Breakfast Program (SBP), and Summer Food Service Program supply low-income students with meals during school or school breaks. For a household to receive a reduced-cost meal through these programs, its income must be under 185 percent of the federal poverty level, which in 2012 was \$42,643 for a family of four. To receive a free meal, household income must be under 130 percent of the federal poverty level, which was \$29,965 for a family of four in 2012.²⁷³

School Lunch Program. In 2010, 63,717 out of 91,553 eligible students in the county participated in the National School Lunch Program, while only 26,459 of 63,718 eligible students, or 42 percent, took advantage of the School Breakfast Program. These numbers reveal significant participation gaps: 30 percent of eligible students do not participate in the National School Lunch Program, and 58 percent do not participate in the School Breakfast program.²⁷⁴

For students who rely on free or reduced meals at school, summer can be a time of hunger. In 2008, 12,581 children in the county participated in a summer nutrition program, while 47,945 (or 79 percent of) students did not, despite being enrolled in a free or reduced-cost lunch program during the school year.²⁷⁵ This pattern is repeated statewide: over 2 million (84 percent of) children in California who received federally funded school meals during the 2010–2011 academic school year were not served by the federal summer meal program.²⁷⁶



Data from the Santa Clara County Public Health Department's Status of Latino/Hispanic Health report suggests that the healthiness of food offered in county schools could also be improved. For the report, the Public Health Department surveyed elementary and middle schools in eight neighborhoods with a higher proportion of Latinos. Only one-third of schools offered fruits, vegetables, and salads for sale à la carte. Over a quarter of schools surveyed indicated that they sell high-fat, low-nutrient entrees (e.g., pizza and chicken nuggets) à la carte. Federal regulations only apply to food and beverages offered as part of the National School Lunch Program, so schools must create and implement their own policies. At least a quarter of schools did not have a policy about the type of food offered to students as incentives or rewards or sold in fundraisers. Mobile vendors selling unhealthy foods were found near two-thirds of schools in Latino neighborhoods.²⁷⁷

Senior Nutrition. The Santa Clara County Senior Nutrition Program (SNP) has a 37-year history of reaching the most at-risk seniors in the county and serving large numbers of seniors who are age 60 or older, are low-income, or live alone. The purpose of SNP is to provide seniors with meals that are high quality, cost-efficient, and nutritious. The program also stresses the import role nutrition plays in preventative health and long-term care. Funding for SNP comes from governmental entities, the SNP sites, and the participants. SNP is successful in preventing malnutrition by providing nutritious meals to a large, highly diverse population. It also offers places for seniors to socialize and remain independent.²⁷⁸

Nutrition services are delivered through two comparable yet distinct meal programs: the Congregate Meals Program and Home Delivered Meals Program (also known as Meals on Wheels). Congregate meals are provided in a community setting at locations such as senior/community centers, nonprofit organizations providing services to seniors, churches, and adult day care facilities. Meals on Wheels provides home delivered meals to homebound seniors who cannot shop for or prepare meals on their own and do not have help preparing meals. Nutrition education is provided to seniors participating in the Senior Nutrition Program to support this promotional effort.

In fiscal year 2012, SNP served 1,189,042 meals to 12,949 seniors at 40 sites in Santa Clara County. The Senior Nutrition Program provided 155 nutrition education sessions to 13,257 seniors.²⁷⁹ In addition, Second Harvest Food Bank served over 420,000 pounds of food to over 11,000 seniors per month through the Brown Bag program in fiscal year 2012.

5.4 Health Status of Residents

An unhealthy diet and a lack of physical activity have been linked to many health issues that can cause illness, disability, and premature death. Heart disease, high blood pressure, stroke, some types of cancer, and diabetes are all diet-related diseases.²⁸⁰ The dramatic increase in the number of overweight and obese Americans has also been attributed to our food environment and our diet.²⁸¹ Since 1980, the obesity rate among American adults has doubled, and it has tripled among American children.²⁸² Being overweight or obese increases the risk for many health conditions, including diabetes, hypertension, liver and heart disease, and breast and colon cancer.283 Since 1995, the rate of obesity among adult Californians has grown by 78 percent. Over the same period, the rate of diabetes doubled.294



By 2010, one-10th of children, one-third of teenagers, and a majority of adults in California were overweight or obese.²⁸⁵ The prevalence of obesity and diabetes has grown across all segments of California's population, but it has especially affected American Indians, African Americans, and Latinos as well as people with low incomes.²⁸⁶

Preventable diet-related health problems come at a high personal and economic cost. Diet and physical inactivity contribute to four out of the six leading causes of death in the United States: heart disease, cancer, stroke, and diabetes. One-third of premature deaths in the United States can be attributed to poor nutrition and physical inactivity, which are quickly overtaking tobacco use as the leading cause of preventable death in the United States. Because of rising obesity rates and associated health problems, the current generation of children may be the first to live shorter lives than their parents.²⁸⁷ These health problems come with a high price tag in terms of both medical costs and lost productivity. In California, it is estimated that the annual cost of diabetes is \$24 billion, and the annual cost of obesity is \$21 billion.²⁸⁸ In Santa Clara County alone, it is estimated that the costs associated with obesity totaled nearly \$2.1 billion in 2006.²⁸⁹ The Centers for Disease Control project that healthier diets could save at least \$87 billion per year nationally in medical costs, lost productivity, and lost lives.²⁹⁰ The magnitude of many of these health problems could be reduced by making healthy foods and active living more available, accessible, and affordable for everyone.

What is the status of overweight, obesity, and diabetes in Santa Clara County? Even though Santa Clara County was ranked the second-healthiest county in California in 2013,²⁹¹ the county's 2010 Health Profile Report indicates that over half of adults are either overweight (38 percent) or obese (17 percent). A higher percentage of Hispanic (68 percent) and African American adults (63 percent) are overweight or obese, relative to the rest of the population . Asian/Pacific Islander adults had the smallest percentage (39 percent) of overweight adults. Adults aged 18–24 had the lowest prevalence of overweight-obesity (37 percent), while the prevalence of overweight-obesity was highest among adults aged 55–64 (64 percent) .

The prevalence of overweight-obesity is negatively correlated with household income: 68 percent of adults with an annual household income less than \$20,000 are overweight or obese compared with 49 percent of adults who have an annual household income of \$70,000 or more. Obesity also decreases with increasing levels of education: 62 percent of adults with a high school education or less were overweight or obese compared with 47 percent of adults who had a graduate degree or higher.²⁹²

Obesity and overweight are also problems for our county's children, with 16 percent of children between the ages of two and five classified as overweight and 17 percent classified as obese. At the middle school level, 19 percent of children are overweight and 14 percent are categorized as obese. Currently, high school students are the least likely to be overweight (14 percent) or obese (10 percent).²⁹³ Children who are overweight at a young age are more likely to become diabetic and overweight as an adult.²⁹⁴

In 2009, 8 percent of adults in the county, or 95,590 people, had been diagnosed with diabetes (an increase from 5 percent in 2000), and 15 percent of adults had been told they had pre-diabetes. Compared with adults of normal weight, obese adults living here are about twice as likely to be told by a health care professional that they have high cholesterol and they are at a higher risk for a stroke, a heart attack, coronary heart disease, or high blood pressure.²⁹⁵

Health Disparities. In Santa Clara County, the health of the population differs by income and race.²⁹⁶ Wealthier residents tend to be healthier than residents living in poverty; and white residents tend to be healthier than Latino, African American, and Asian residents.²⁹⁷ The Public Health Department's report on Health and Social Inequity in Santa Clara County states that genetic make-up and access to medical care are only a few of the factors that contribute to overall health and well-being. Instead, it identifies the root causes of these health disparities as social, economic, and environmental conditions such as "social status, employment and income, education, housing, and access to nutritious foods."²⁹⁸ The places where people "live, work, learn, and play" can contribute to poor health, but they are also, importantly, where the opportunity for good health begins.²⁹⁹

Two other recent Public Health Department reports delve further into the socioeconomic factors and neighborhood conditions that affect the county's Latino and Vietnamese-American populations and may also impact their health and well-being. Currently, Latinos are the third-largest ethnic group in Santa Clara County, and they are projected to be the largest by 2050. Compared with other ethnic groups, Latinos have a greater likelihood of being overweight or obese; having poorer nutrition and lower levels of physical activity; and experiencing high rates of injury and violence. However, Latinos who are immigrants have some behaviors that are healthier than those of Latinos born in the United States. The Status of Latino/Hispanic Health report finds that a variety of neighborhood conditions, such as persistent barriers to eating a healthy diet, being physically active, and feeling safe and preventing violence in Latino neighborhoods, may contribute to key health disadvantages among Santa Clara County Latinos.³⁰⁰

Santa Clara County also has a large Vietnamese population; the City of San José has the largest Vietnamese population of any city in the United States. Vietnamese adults were more likely than adults in the overall county population to be diagnosed with coronary heart disease and diabetes. More Vietnamese families lived in poverty from 2007 to 2009 than families in the county overall and families in other major ethnic groups, with the exception of Latino families. In 2011, 5 percent of Vietnamese adults in the county reported going hungry at some time in the past year because they could not afford enough food, and 16 percent said they or other adults in their family had to obtain food from a church, food pantry, or food bank.³⁰¹ The causes of health disparities are complex, and the solutions will involve changes to social, economic, and environmental conditions that affect health and require collaborations between government agencies, health care organizations, community-based organizations, schools, worksites, and other key stakeholders.³⁰²

Consumption of Healthy Foods and Beverages. In Santa Clara County, more than 80 percent of adults report that they do not eat at least five servings of fruits and vegetables per day. Women (21 percent) were more likely than men (9 percent) to have eaten at least five servings of fruits and vegetables the previous day. More whites (18 percent) ate the recommended daily servings of fruits and vegetables than Asian/Pacific Islanders (13 percent) and Latinos (10 percent). Consumption of vegetables was highest among older people. Of those 65 and older, 17 percent ate at least five servings of fruits and vegetables per day, compared with only 6 percent of those aged 18 to 24. In Santa Clara County, consumption of fruits and vegetables has little correlation with income, but it did increase with level of education.³⁰³

More than 50 percent of middle and high school students reported that they had eaten at least two servings of fruit the previous day, while 30 percent ate three or more servings of vegetables. Between 2001–2002 and

2007–2008, the percentage of middle and high school students who reported eating at least two servings of fruit per day rose from 51 percent to 54 percent. The percentage of students reporting that they had eaten at least three servings of vegetables did not change over the same time period. More than 50 percent of adolescents reported that they drank one or more sodas in the previous day.³⁰⁴

In 2009, 40 percent of adults in the county reported that they ate at a fast-food restaurant at least once a week. A higher percentage of Latinos (49 percent) and African Americans (43 percent) reported eating fast food at least once per week than other ethnic groups. People 65 and older were less likely to regularly consume fast food than people ages 18 to 24.³⁰⁵

Breastfeeding. Infants are considered breastfed if they begin receiving breast milk when they are discharged from the hospital. Both nutrient and antibody rich, breast milk helps to support infants' immune system and helps infants to grow and develop. Infants that are not breastfed are at higher risk for infections and delays in growth and development of the brain and nervous system. In 2010, 79 percent of infants in our county breastfed exclusively (although 96 percent of infants breast fed at some point during the postpartum period).³⁰⁶ This represents an increase from 2005, when 65 percent of Santa Clara County infants breastfed exclusively and 94 percent breastfed at some point during the postpartum period.³⁰⁷

Countywide Nutrition Standards. Santa Clara County enacted comprehensive nutrition standards on July 1, 2012, which affect the nearly 6 million meals served by the County annually. The new standards are based on the U.S. Department of Agriculture (USDA) Dietary Guidelines for Americans 2010. The five venues covered by the nutrition standards include: meetings and events, vending machines, cafeterias and cafes, leased properties, and custodial populations that are under the purview of the County of Santa Clara. Residents fed by the County are no longer served sodas, flavored milk, or other sugar-sweetened beverages. Highly processed foods and foods high in trans fats are also banned from menus. Instead, clients have access to fresh produce, whole grains, water, low-fat milk, and other healthy beverages. The standards also require that smaller portion sizes and vegetarian options are made available.³⁰⁸

County General Plan Health Element. For the first time, the County is working on developing a Health Element of its General Plan, which will explicitly integrate public health, social equity, and long-term planning. The Health Element will examine factors affecting the social and physical well-being of county residents and employees, such as access to healthy food, bicycle and pedestrian safety, air quality, and other issues. If adopted, the Health Element will provide a framework for integrating "evidence-based health strategies into community planning, transportation, and land-use decisions."³⁰⁹



6. Food Waste

Food waste recovery is the "series of activities where discarded food materials are collected, sorted, processed and converted into other materials and used in the production of new products."³¹⁰ Because of the many environmental, economic, and social benefits associated with reducing food waste and diverting food from landfills, they are important parts of a sustainable food system. Unused and discarded food materials, which are known as food residuals, can be valuable resources. For instance, surplus food can be donated to feed those in need, and discarded food materials can be converted into compost for use in future agricultural production.³¹¹ This chapter will examine how food waste can be reduced and recovered and some of the efforts being made in Santa Clara County to make our food system more sustainable by putting food residuals to beneficial uses rather than into landfills.

According to the U.S. Environmental Protection Agency, food makes up the largest percentage (21 percent) of waste going into landfills.³¹² In California, 15.5 percent of landfilled material is food waste.³¹³ SPUR estimates that in the Bay Area, 970,000 tons of food waste goes to landfills each year.³¹⁴ Food waste occurs at every point in the food system: from production through processing, distribution, retail, and consumption. A recent paper by the National Resources Defense Council stated that the process of getting food from farm to fork consumes roughly 10 percent of the total U.S. energy budget, uses 50 percent of U.S. land, and accounts for 80 percent of consumptive fresh water use in the United States.³¹⁵ Yet only 60 percent of the food that Americans produce is actually eaten. Most uneaten food ends up rotting in landfills, where food waste is the primary source of methane emissions, a greenhouse gas 21 times more harmful than carbon dioxide.³¹⁶ Landfills are responsible for 17 percent of U.S. methane emissions.³¹⁷

By reducing food waste and sending fewer food residuals to landfills, we can reduce the amount of methane released from landfills, cut back on resource (such as water and energy) use associated with food production, and produce compost, which is a valuable soil amendment. Some of the economic benefits of food waste reduction and recovery include tax benefits for businesses that donate edible food to food banks or other food rescue organizations and, in some cases, lower trash collection and disposal fees for businesses. Finally, food donations can divert edible food away from landfills to people in need of food assistance.³¹⁸

The amount of food waste currently sent to California's landfills conflicts with many jurisdictions' goals of reducing inflow to landfills. Rather than throwing away excess food, cities and counties across California are hoping to manage it through source reduction, energy production, feeding people, feeding animals, industrial uses, and composting for soil restoration.³¹⁹ In 2011, Assembly Bill 341 (AB 341) established a statewide goal of diverting 75 percent of solid waste from disposal by 2020 through source reduction, recycling, or composting.³²⁰ Several cities in Santa Clara County are committed to significantly reducing solid waste. The City of San José has ambitious goals to reduce landfill contributions by 75 percent by 2013 and by 100 percent by 2022.³²¹ The City of Palo Alto has a goal of achieving zero waste—that is, no waste burned or buried in landfills—by 2021.³²² Sunnyvale has also adopted a zero waste policy. To achieve zero waste in Sunnyvale, City staff has recommended three progressive diversion goals: 75 percent diversion by 2020, 80 percent by 2025, and 90 percent by 2030. In 2011, Sunnyvale diverted about 172,000 tons, or 66 percent, of its waste stream; it disposed of another 86,000 tons in landfills. To achieve a 75 percent diversion rate, 21,700 tons of material that is currently disposed of will need to be diverted instead. To guide its efforts at waste reduction, the City of Sunnyvale has developed a zero waste strategic plan that analyzes the potential of different diversion scenarios. This analysis reveals that the biggest portion (41.8 percent) of the waste stream coming into the SMaRT Station—a material recovery facility that sorts mixed waste for the Cities of Sunnyvale, Mountain View, and Palo Alto—is compostable or potentially compostable material. The largest portion (57.1 percent) of the SMaRT Station's residual waste stream, which will go to a landfill, is also compostable or potential and commercial waste streams and diverting organics at the SMaRT Station have some of the greatest potential and commercial waste streams and diverting organics at the SMaRT Station have some of the greatest potential to increase the City's overall diversion.³²³

6.1 Food Waste Reduction

The most efficient and sustainable way to manage food waste is reduction. Consumers can reduce food waste by minimizing the amount of food they discard through proper planning, shopping wisely, educating themselves on the importance of minimizing food waste, understanding better what food label dates mean, buying imperfect products, and freezing unused products. The best practices for reducing food waste during production are to revise quality and aesthetic standards, expand alternative outlets and secondary markets for off-grade foods, practice farm-level food recovery, pay attention to secondary uses of trimmings and peels, and enact regulatory measures that incentivize complete harvests. The best management practices to reduce food waste during distribution are to use discount shelves, redesign product displays, allow for prepared foods to run out by closing time, and donate more. Restaurants can also do their part by adapting menus to serve correctly sized portions, auditing waste, improving planning, and encouraging guests to take food home.³²⁴

6.2 Food Waste Recovery

Food waste recovery describes the entire process of separating, collecting, and processing materials that would otherwise be sent to landfills, and returning them to the food system in the form of raw material for new products.³²⁵ Food residuals can be recovered and donated for use at charitable feeding sites, converted into raw materials that can be used in the agriculture production of new products, or converted into energy. The most popular types of food recovery in Santa Clara County include reuse, composting, and anaerobic digestion.

6.2a Reuse/Edible Food Recovery

Reuse of food waste in food harvesting includes the gleaning of unused food or by-products from agricultural fields. Reuse in postproduction is the collection of perishable, nonperishable, and prepared foods from various stages in the supply chain. Currently, only about 10 percent of available, edible wasted food is recovered each year in the United States, allowing room for significant improvement.³²⁶

Reuse at the retail level can make food that would otherwise be wasted available to people in need. For instance, food banks (which are described in more detail in Chapter 5) may have formal agreements or partnerships with retail chains or independent markets to receive food donations. Second Harvest Food Bank, which is one of the primary providers of food assistance for low-income residents in Santa Clara and San Mateo Counties, operates a large-scale food donation program through which manufacturers, distributors, grocery retailers and wholesalers, growers and packers, schools and institutions, and food transportation companies can donate unsalable, surplus, distressed, or close-to-code-date food. By donating food that would otherwise go to waste, donors save money on dumping and disposal fees, reduce waste, receive a tax deduction, increase warehouse space or save on storage charges, and expand company visibility through partnership opportunities. In 2012, Second Harvest of Santa Clara and San Mateo Counties received over 300 million pounds of food from local businesses.³²⁷ All of the donations Second Harvest receives through these and other programs "are made available to [their] network of over 300 nonprofit partner agencies and direct service programs."³²⁸



In addition, Second Harvest also runs a Grocery Rescue program. Items that are most useful to help feed the hungry include meat, dairy, deli, produce, and frozen and refrigerated foods. Through the Grocery Rescue program, donations are picked up either directly by Second Harvest Food Bank or by one of their authorized partner agencies. At present, they work with over 50 grocery stores locally, including Target, Walmart, and Save Mart.³²⁹ Second Harvest Food Bank also has a program for accepting excess produce from home and community gardens.³³⁰ Second Harvest Food Bank has a long-standing relationship with Village Harvest, a nonprofit volunteer organization serving the Bay Area that "harvests fruit from backyards and small orchards, then passes it along to local food agencies to feed the hungry." In 2012 Village Harvest harvested 231,291 pounds of fruit throughout the greater Bay Area, and as of July 2013 they had harvested 135,751 pounds of fruit for the year to date.³³¹

6.2b Composting

Composting turns organic material—such as leaves, grass clippings, twigs, fruit and vegetable trimmings—into a dark, crumbly, earthy-smelling soil conditioner. Composting can be done at the individual level, which is often referred to as backyard composting, or it can be done at the private and public level, which is referred to as commercial composting. Commercial composting occurs when cities or organizations collect organic material and send it to a processing facility for large-scale compost production. The facility then sells or donates the compost back to consumers, such as farmers, landscape companies, and park managers.

Composting organic waste creates a renewable and sustainable cycle of production and soil restoration. Composting saves money by lowering garbage bills and replacing store-bought soil conditioners and fertilizers. Compost also helps garden and plants by improving the fertility and health of soil. In addition, compost saves water by helping the soil to hold moisture and reducing water runoff. Compost also has the added value of being able to cleanse stormwater runoff, decreasing not only its volume but also its levels of pollution. Larger-scale benefits include reducing the amount of waste being imported into landfills, as well as reducing the costs associated with transporting and processing of landfill materials.

6.2c Anaerobic Digestion

Food waste can also be recycled via anaerobic digestion, which converts organic waste into energy. Anaerobic digestion is a biological process that produces a gas, known as biogas, which is principally composed of methane and carbon dioxide. These gases are produced from organic wastes such as livestock manure and food waste.³³² Anaerobic processes can occur naturally or in a controlled environment such as a biogas plant. In a controlled environment, the process occurs in an airtight container called a digester. Depending on the waste feedstock and the system design, biogas is typically 55 to 75 percent pure methane. State-of-the-art systems report producing biogas that is more than 95 percent pure methane.³³³ The output of biogas creates a renewable source of energy that is similar to natural gas.

Besides the overall benefit of reducing waste and methane in landfills, an added benefit of anaerobic digestion is that traditional methods of food waste disposal deposit fats, oils, and grease in our pipes and wastewater treatment facilities. Diverting these materials from the wastewater infrastructure to anaerobic digesters prevents combined sewer overflows, which in turn protects water quality and saves money. In addition, the solid residual from the digesting process can be used as a soil amendment, similar to compost. Like compost, this residual material can reduce the need for chemical fertilizers, improve plant growth, reduce soil erosion and nutrient runoff, alleviate soil compaction, and help soil to retain water.³³⁴

6.3 Challenges

Many jurisdictions are interested in diverting food waste but are having a difficult time finding local facilities and programs that are permitted to recycle food waste. Currently, food waste composting requires a compostable materials handling facility permit, and many stakeholders have indicated that this requirement discourages food waste composting.³³⁵ Another obstacle to reusing food waste is the need to educate both the public and private sectors about how to process food so that it can be reused. Challenges emerge in restaurant staff handling, language barriers, and the transportation systems needed to transfer food waste from the source destination to the reuse site. Recycling food waste into biogas energy is a new frontier. The primary barriers to anaerobic digestion are a lack of public interest in funding pilot programs, a lack of education on digesters and their impacts, and a lack of research demonstrating that programs in the United States work.

6.4 What's Happening in Santa Clara County?

6.4a What Our Cities Are Doing

Food waste management is still a relatively new aspect of each jurisdiction's waste management programs. For this assessment we were unable to compile data on food waste diversion at the city or county level. However, we can identify the programs that Santa Clara County jurisdictions are undertaking as of January 2013 to divert food waste from landfills. The following section provides an overview on those current programs.

Curbside Food Waste Collection

- The City of Gilroy collects food waste curbside.
- The City of Los Altos has curbside food waste collection.
- The City of Morgan Hill collects food waste curbside.
- Since November 1, 2010, the City of Cupertino has collected food waste, organics, and green waste curbside. It also offers food waste, organics, and green waste collection services to commercial customers.
- Unincorporated Lexington Hills collects food materials with other organics.
- The City of Milpitas currently does not have curbside food waste collection but has future plans to do
 so. Despite this limitation, many of its large commercial businesses implement food waste collection
 programs, including Cisco, LSI, Headway Technology, Scandisk, Beverly Heritage Hotels, Catered
 Too, Sunnyhills Methodist Church, Shirdi Sai Parivaar Church, Chili's Restaurant, and XL Construction.
- The City of Mountain View will launch a commercial food waste management pilot program in July 2013. Many of its large commercial businesses implement food waste collection programs, including Google, Microsoft, Chipotle, Walmart, REI, Costco, Synopsis, LinkedIn, and Intuit.
- Santa Clara County public buildings have commercial food programs, and the County will begin collecting food waste in homes in unincorporated areas in 2014.

- The City of Santa Clara does not have curbside food waste programs, but Mission Trail Waste Systems is providing a food scrap collection program to Santa Clara University. Santa Clara would like to establish one or two commercial restaurant routes that collect food waste for composting.
- The City of Sunnyvale currently operates a commercial organics pilot program, which collects an average of 60 tons a month. Residential food waste collection is under consideration as one of the many programs the City will look at to achieve zero waste goals. The organics pilot program includes one produce market, the Sunnyvale City Hall complex, one school, a medium-sized business and 10 Fortune 500 companies. An additional 500 tons per month of organic material is diverted through the Sunnyvale Materials Recovery and Refuse Transfer Station's automated processes.
- San José is not collecting food waste curbside after an unsuccessful pilot program, but it does have a commercial food program.
- The City of Palo Alto currently collects food waste from multiunit complexes but not single-family homes. In March 2013, Palo Alto launched a two-cart collection pilot project that will provide participating residents with food waste collection services for one year. At present, food waste and food-soiled paper make up about 50 percent of residential garbage; composting these materials could help the city to reach its zero waste goals.³³⁶

Anaerobic Digestion

- The City of Palo Alto is in the midst of planning construction of an anaerobic digestion facility.
- The City of San José has constructed an anaerobic digestion facility that is scheduled to open in 2013. The digestion facility will utilize dry fermentation anaerobic digestion and an in-vessel composting facility.



photo credit: Aziz Baameur

6.4b What Individuals Are Doing in Their Backyards

Santa Clara County has extensive and well-utilized Master Gardener and Master Composter programs that educate and provide resources for backyard composters. In these classes, students learn how to turn leaves, yard trimmings, and food scraps into a valuable soil amendment. Santa Clara County's Home Composting Education Program (HCEP) runs the Master Composter program, conducts workshop and other outreach activities, offers the compost rotline (408-918-4640) to answer composting questions, and sells compost bins.³³⁷ The County's Home Composting Education Program has trained over 400 Master Composter (MC) volunteers since the program began in 1995. In 2012, there were approximately 66 active MC volunteers. MC volunteers receive a 50-hour training course, and in return they donate 50 hours of outreach and education within one year of graduation from the program. The County also regularly offers two-hour introductory workshops on "Compost Basics" and "Worm Composting Basics." Currently HCEP holds about 30 composting workshops each year that are attended by about 1,000 people in total.³³⁸ Many cities in the County provide rebates on composting kits.

In addition, San José State University supports the Center for the Development of Recycling, a nonprofit organization providing information about food waste recycling to Santa Clara County residents, businesses, and local governments. The center provides research, a hotline, and a website for Santa Clara County. It is the oldest center of its type in the country. Run by students at the university, the Center can take excess food, set up food exchanges for nonprofits, help people with composting and connect them to composting resources in the County, as well as provide general information on food waste management.



San José's anaerobic digestion facility will be able to process over 270,000 tons per year of organic waste that would otherwise be disposed of in a landfill. This increase in landfill diversion and production of renewable energy will help San José and surrounding cities to meet their economic development goals and reduce their per capita energy use. The high-quality compost produced will be used to enrich soils, while the renewable biogas not only will be sold as energy for the utility power grid but also will be used to fuel local plants and facilities.³³⁹

7. Conclusion

One of the main reasons for producing the Santa Clara County Food System Assessment (the Assessment) was to evaluate the status to date of our local food system. By doing so, the Santa Clara County Food System Alliance (the Alliance) identified and prioritized the issues where it will focus its attention based on its vision for our food system.

Chapter 1 of this Assessment introduced food systems, the goals of the Assessment, the Alliance and its goals, and the scope and methodology of the Assessment. In Chapter 2, an overview of the county's geography, population, agricultural sectors, and land-use policies furnished the necessary background for the evaluation of the material that followed. Chapter 3 outlined crop and livestock production, farmland and ranchland inventory, organic farming, urban agriculture, educational opportunities, water and climate issues, farm labor, support services, protection of crops and food safety, and regulatory burdens faced by the farming community. Chapter 4 discussed the food distribution system, including the existing infrastructure, shipping, marketing, and sales, as well as examined barriers and benefits to localized food systems. Chapter 5 reported on present and future consumption needs, the retail food environment, food security, and the health status of residents. And Chapter 6 investigated food waste management, such as recycling, reusing, composting, and anaerobic digestion facilities.

The data in these chapters revealed that there are many positive attributes to our local food system. For instance, in July 2012, the County adopted nutrition standards that limit sodas, processed or deep-fried foods, trans fats, and sodium-rich foods, and that encourage water drinking, smaller portion sizes and vegetarian options for all meals served at its facilities. More recently, a new agricultural marketing campaign—Buy Fresh Buy Local Santa Clara Valley—was recently launched to raise awareness of locally grown food and to increase local farmers' incomes.

Yet there is still much to be done to increase our community's food security and move toward the Alliance's vision of a robust and resilient food system. Combating loss of farmland to urban sprawl, overcoming cumbersome regulatory processes, meeting the rising demand for locally produced products, increasing efforts to address hunger and the risks to public health and nutrition, recognizing the need for food justice, and furthering environmental education and practices are some of the outstanding challenges within our food system. The recommendations, formulated by the Alliance from the data laid out in the Assessment, will help to get this work started.

Recommendations

Agriculture & the Economy

- Protect the agricultural lands in Santa Clara County, many of which are threatened by development. Agricultural production in the county is valued at around \$250 million annually and has a local multiplier effect that helps to sustain local and regional agriculture-related economies, as well as providing valuable ecosystem services. Yet agricultural land in the county remains particularly vulnerable to development pressure. Between 1984 and 2010, Santa Clara County lost 45 percent of its farmland, and 55 percent of the county's remaining farmland is at risk of being developed over the next 30 years.
- 2. Uphold policies focusing growth within urban boundaries and limiting their expansion. This is one of the keys to preserving agricultural lands in Santa Clara County. Over the past few decades, county and city land-use policies have helped limit urban growth to within city boundaries. The role of the Local Agency Formation Commission to discourage urban sprawl and protect farmland has also been critical for maintaining agricultural lands and thus the availability of healthy food resources in Santa Clara County.
- 3. Increase public awareness of the challenges of farming at the urban/rural edge. A large part of farming and ranching in Santa Clara County takes place at the urban edge, which can create friction between urban and agricultural land users and pose a threat to agricultural viability. Public outreach and more thoughtful planning can alleviate this area of conflict.
- 4. Retain reduced water rates for agricultural users. Agricultural water users in Santa Clara County receive reduced water rates, which are currently set at no more than 10 percent of the water rate for municipal and industrial users. Many in the agricultural community are concerned that a significant increase in agricultural water rates would jeopardize the profitability of Santa Clara County agriculture.
- 5. Address local agricultural workers' housing shortages. The need for agricultural laborers in Santa Clara County is high because of the significant amount of hand labor required to tend and harvest the county's diversity of crops. The scarcity of affordable housing, particularly in South County communities, has had a tremendous impact on farm workers.
- 6. Provide more funding opportunities for farmers and ranchers. Financing can be challenging for agricultural operations in Santa Clara County, and small and beginning farmers are more likely to struggle to acquire financial assistance.

- 7. Consider streamlining the regulatory process for agricultural operations. In Santa Clara County, farmers and ranchers might interact with as many as 16 federal agencies, 15 state agencies, and eight county agencies, depending on the issue or project at hand.
- 8. Promote local origin labeling to increase sales of locally grown food at point of purchase. In January 2013, a new agricultural marketing campaign—Buy Fresh Buy Local Santa Clara Valley—was launched to raise public awareness of locally grown food and increase local farmers' incomes. A local origin label indicating where food was grown or the farmer who grew it has proved to be an effective way to build consumer awareness of local producers and shift consumer purchasing toward support for the local farming community.
- 9. Encourage wholesale produce companies in Santa Clara County to procure goods from local farms and source-identify farm origin. Food distributor wholesalers serve a critical function in the food system by connecting farmers to markets and allowing for efficient distribution of food among many end users.
- 10. Encourage direct purchasing contracts to increase viability of farming operations. Currently the connections between buyers in the county and local producers are weak. Retail outlets, restaurants, institutions, and food service management companies should consider the potential of off-contract purchasing to shift dollars directly to the farmer. A direct purchase contract can support small and medium growers' long-term economic viability.
- 11. Adopt a local food ordinance that requires the city and county government to purchase, by or through its food service contractor, locally produced foods when a department of the city serves food in the usual course of business.



Hunger, Food Justice, and Health & Nutrition

- Plan for food production within urban areas to improve the county's urban social and environmental conditions. While Santa Clara County has 28 active community gardens, long wait lists suggest there is an unmet demand for gardening opportunities. Urban agriculture can increase residents' consumption of fresh produce; free some household food dollars for other expenses; provide a source of exercise and mental relaxation; and create safe, healthy, green environments in urban areas, among other benefits.
- 2. Increase the acceptance of CalFresh (formerly the Food Stamp Program) at all city and county farmers' markets. At present, 19 out of the 36 certified farmers' markets in Santa Clara County accept food assistance programs. Increased acceptance of EBT, such as CalFresh, at farmers' markets will enhance low-income families' access to fruit and vegetables, and expand the customer base at farmers' markets.
- 3. Increase CalFresh enrollment and nutrition education. The leading source of food assistance in Santa Clara County is the CalFresh Program, but only 52 percent of eligible individuals participate in the program. Yet, in Santa Clara County many households struggle to make ends meet because of the high cost of living, and as a result, 14 percent of the population is food insecure. Coordinating efforts among county agencies to increase CalFresh outreach and enrollment could provide thousands of people with needed food assistance.
- 4. Increase the percentage of retail food outlets that offer healthy, affordable food. Less than a quarter of all the retail food outlets in Santa Clara County have readily available fresh fruits and vegetables, and in the county's low-income neighborhoods there is typically even less access to full-service supermarkets and other sources of healthy food. Furthermore, recent reports by the County Department of Public Health show that many Latino and Vietnamese American communities in the county face significant socioeconomic challenges, including lack of adequate food and persistent barriers to eating a healthy diet, that negatively impact health and well being. Efforts such as the Campaign for Healthy Food San José demonstrate the potential for improving access to fresh fruits and vegetables for all residents.
- 5. Use County nutrition standards as a model. As of July 2012, all meals in County facilities—such as jails, probation facilities, senior nutrition, and medical centers—need to comply with healthy nutrition standards that limit sodas, processed or deep-fried foods, trans fats, and sodium-rich foods, and encourage water drinking, smaller portion sizes, and vegetarian options. These standards, which promote health and wellness, should be encouraged within other governmental jurisdictions and private sector businesses.

Environment

- Encourage more local governments to adopt programs that divert food waste from landfills. Only
 three of Santa Clara County's 15 cities—Gilroy, Los Altos, and Morgan Hill—currently collect food
 waste curbside, although several others have plans to launch pilot programs, and some of the county's large commercial businesses, including Google, Scandisk, and LinkedIn have food waste collection programs. The cities of Palo Alto and San José are constructing anaerobic digestion facilities that
 convert organic material into biogas, a source of energy similar to natural gas.
- 2. Support education programs to help individuals reduce and reuse food waste. Programs such as the County's Master Composter program educate residents on how to turn food scraps and yard trimmings into a valuable soil amendment.

Implementation: What's Next?

As stated in the introduction, the Assessment serves (1) as an educational tool for food system stakeholders and the public at large, and (2) as a foundation for planning the Alliance's future actions. With the Assessment completed, the Alliance will work to:

- 1. Engage key stakeholders and the public
 - a. The Alliance will seek opportunities to raise awareness of the key data and recommendations in the Assessment in communities across Santa Clara County. Expanding residents' knowledge and appreciation of their role in our food system is integral to strengthening it.
 - b. The Alliance will engage a variety of partners to accomplish some of the recommendations to the system that it is proposing. Involving other stakeholders in its objective will increase the Alliance's chances for success.
- 2. Set its future priorities
 - a. The Alliance will create a yearly work plan based on the recommendations. The Alliance will approach implementation of its priorities based on a systems perspective, and by taking into account how and which recommendations overlap, will be able to anticipate how working on one recommendation can potentially affect another or others. The Alliance will identify leverage points and develop strategies to effect change to more than one area of the food system at a time. The Alliance anticipates that this approach will allow for multiple goals to be accomplished simultaneously.
 - b. The Alliance will focus on root causes where possible to ensure long-term change versus short-term gains.

Recognizing the Changing Dynamics of the County's Food System

The Alliance recognizes the need to take the changing dynamics of the food system into account while it works to improve it. Since the Alliance is a collaborative of food system stakeholders, it will draw on its many resources to stay abreast of emerging issues and incorporate them into its decision-making process.

The Alliance considers the Assessment a living document that it will continue to evolve over time to reflect the changing nature of our local food system. It is cognizant that while this document outlines many of the key components of the Santa Clara County food system, there are other important topics that will need to be addressed more fully in future iterations of the Assessment, including:

- Labor: From on-farm labor, to labor connected with the aggregation, processing, and distribution of food
- Education: Efforts aimed at building capacity among food system stakeholders, including farmers, laborers, distributors, retailers, consumers, and decision makers
- Environment: The impact on and benefits provided to the environment by agriculture, and the potential impact—including climate change and water availability—that the environment could have on the Santa Clara County food system
- Culture and Food: The various ways in which the food system interacts with and impacts different cultures

Therefore, the Alliance will periodically review this document to update and capture new issues and data so that their work can reflect changing circumstances and the document can remain a relevant source of information for all.



photo credit: Nancy Barrera

We All Have a Part to Play

Since the Assessment is a document by and for the community, the Alliance invites members of the community interested in contributing to the evolution of the Assessment to contact the Alliance.

Readers should note that while the recommendations serve to inform the Alliance's future work, all county residents can and do play a part in making these recommendations a reality and thus contribute to the vitality of our local food system. Our choices and actions, such as making food purchases, or voicing opinions to local or County representatives on issues impacting our food system, have a real-life effect.

In Chapter 1, a food system was defined as the people and resources involved in producing, processing, distributing, and consuming food and managing food waste. In short, it pointed out that all of us affect and are affected by our food system in one way or another.

It wasn't until recently, however, that we started to become more aware of these relationships at the local level. This recognition has expanded the conversation about the importance of a healthy food system from growers, ranchers, and environmentalists to also include those in the fields of health, nutrition, and social equity. As more people begin to learn, join the dialogue, and act—from community activists to elected representatives—our ability to build a more sustainable local food system and improve local food security increases.

Respecting that all residents already play a part in our invaluable local food system, the Alliance calls on the people and governments of Santa Clara County to join us in this effort to strengthen it.



Appendix A. Grower Interviews

The Santa Clara County Food System Alliance gathered data on agriculture capacity, current distribution channels, and other relevant topics from Santa Clara County farmers. The surveys and interviews generated initial data essential to this Assessment. The purpose was to identify specific barriers, strengths, and opportunities that exist from the perspective of farmers in Santa Clara County. The Agriculture Viability Committee of the Santa Clara County Food System Alliance performed phone and in-person interviews with the selected farmers. A total of 27 Santa Clara County farmers responded to the survey and/or participated in the interviews.

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The Santa Clara County Food System Assessment is a project of Ag Innovations Network, a non-profit organization dedicated to helping stakeholders solve problems in the food system through effective collaboration.

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