

Chapter 2. Food Production: Regional and Urban Agriculture

Regional Agriculture - Why is it Important?

A **foodshed** is defined as the flow of food from an area where it is grown into a place where it is consumed.¹⁶ The City of Oakland, and the metropolitan Bay Area, are both auspiciously situated in close proximity to several of the nation's most fertile and productive agricultural land. The agricultural region surrounding Oakland includes 32 counties in three distinct regions. The Central Valley region (comprised of the Northern San Joaquin Valley, Southern San Joaquin Valley, and the Sacramento Valley) reaches as far as 100 miles to the east, 200 miles north, and 300 miles to the south of Oakland. California's Central Coast region reaches as far as 300 miles to the south of Oakland. The third and closest region to Oakland includes the nine county Bay Area region which has many acres of farmland remaining in production and extends as far as 90 miles from Oakland. Together, agricultural production in these three immediate regions surrounding Oakland accounts for over 20 million acres and well over \$16 billion in total sales of food in 2002.¹⁷ Of the top 20 agricultural counties in all of California, 15 are located within this region.

Unfortunately though, this high-yielding region does not necessarily serve as a complete foodshed for the Bay Area population, even given its close proximity and the latent Bay Area market. With agriculture being one of United States' biggest export industries, with agricultural goods traveling across state lines, and with agricultural goods being a major import to the country, today the average food item travels over 1500 miles from farm to table.¹⁸ This means the average American city has a foodshed that encompasses a 1500 miles radius.

What does this distance mean to our consumption of and dependency on energy, our ability to access healthy and fresh foods, our increasing reliance on food packaging and processing, our development patterns, our local economy, and our regional identity? Though food is generally thought of as cheap, these food miles traveled and the current dominating food system represent many hidden economic, social, and environmental costs that are not factored into the actual price of food. In addition, in California and in places where much of the country's fertile land is found, regional agriculture is under extreme pressure from urbanization, environmental degradation, and a globalized, industrialized farm economy.

At the local scale, the current food system disregards small farmers and local economies. Due to advanced biotechnologies, accelerating productivity, and the concentration of food producers¹⁹, in the U.S., on average, 75¢ of every dollar spent on food goes to processors,

¹⁶ "What is a Foodshed?" *Wisconsin Foodshed Research Project*. 1 December 2005.

<http://www.cias.wisc.edu/foodshed/foodshed.htm>>.

¹⁷ United States Department of Agriculture. 2002 Census of Agriculture. Total sales represents the gross wholesale market value before taxes and production expenses of all agricultural products sold or removed from the place of production regardless of who received the payment. Sales of grains, fruit, vegetables, and livestock (excluding horses, burros, and mules) are included in the data.

¹⁸ Pirog, R., T. Van Pelt, K. Enshayan, and E. Cook. *Food, Fuel, and Freeways: An Iowa perspective on how far food travels, fuel usage, and greenhouse gas emissions*. Leopold Center for Sustainable Agriculture. Ames, Iowa. 2001.

¹⁹ Lyson, Thomas, A. *Civic Agriculture*. Medford, MA: Tufts University Press, 2004.

packagers, shippers, advertisers and retailers. Because small farmers are receiving near record low prices for commodities and are unable to find alternative markets, thousands of small farmers go out of business each year. Additionally, both hidden and direct agricultural subsidies have favored large-scale farmers and corporate middlemen, allowing them to artificially lower their prices and increase the reach of their markets, pushing smaller farmers out of business.²⁰ The number of small farms is also declining due to the consolidation of farms that produce and deliver solely under production contracts with large food processing corporations.

To make things worse for small American farmers, the U.S. is increasingly relying on foreign food production and at the current pace of change, will soon become a net importer of agricultural products. This is happening because of major consolidations of America's largest food processors and commodity brokers whose bottom line depends

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on cheap, imported food procured at prices lower than those offered by small American farmers. Dependence on foreign nations for our food and the prolific consolidation of farms is endangering American's food security. Considered in the context of homeland security, one specialist on hunger recommends that cities should be able to produce or supply at least a third of the food required by its residents by providing an infrastructure for a safe, regional food supply that networks producers, processors, distributors and consumers.²¹ While the current landscape does not call for concern about food shortages today, increasing our reliance on a global food system increases our vulnerability to the whims of international political instability and increasing oil prices, eventually diminishing our self-reliance as a nation.

The global food system has begun to hurt small farming operations and the food system in the California. Heavy importing of food has been decreasing farm profits throughout California and is gradually slowing down local economies dependent on the agricultural industry. Agriculture has always been a large contributor to the state's economy directly through sales, job creation, support services and businesses, and by supplying lucrative secondary markets such as food processing. As foreign competition drives local farmers out of business, the Californian economy, whose agricultural industry generates \$59 billion in personal income for Californians²² is greatly at risk.

Adding to the pressure on our already vulnerable small local farmers is the alarming rate at which urban development is absorbing California's prime farmland. Between 2000 and

²⁰ Gorelick, Steven, Helena Norberg-Hodge, and Todd Merifield. *Bringing the Food Economy Home, Local Alternatives to Global Agribusiness*. London: Zed Books, 2002.

²¹ Mann, Peter. “Why Homeland Security Must Include Food Security.” *Community Food Security Coalition News*. Winter 2002.

²² Goldman, George, Nicolai V. Kuminoff, and Daniel Sumner. “The Measure of California Agriculture.” Produced for the University of California Agricultural Issues Center, October 2000.

2002, urban land in California expanded by 92,750 acres (145 square miles). Prime farmland accounted for 21 percent of the urbanization, and 8 percent occurred on other important farmland classifications.²³ The California Department of Finance projects that California will grow to nearly 59 million people by 2040, with much of that growth taking place in agricultural regions of the state. While urban development might provide higher value-added economic activity like construction and commerce for what have traditionally been rural jurisdictions, the accruing loss of farmland is harming the state's agricultural industry. Instead of developing farmland to accommodate the growing population, existing cities could absorb much of this population growth and the economic activities that come with growth, generating a win-win situation for our urban and rural economies.

The loss of farmland not only means a loss in economic activity but a loss of regional identity and consumers' ability to access fresh and local foods. In the Bay Area, which has traditionally been connected to the area's regional farms through its well-known food processing companies, restaurants, culinary schools, and the recent comeback of farmers' markets, regional identity is at stake. While dependence on foreign and out-of-state imported foods puts the entire population at risk to accessing fresh and local foods, it is the low-income communities that are hit the hardest. Pressures from urban growth and foreign competition have encouraged many of the Bay Area's regional small farmers to specialize and find niche markets where they can charge high prices and make reasonable profits from their production. However, such pricing provides farmers with a limited market and consumers with limited choices to access fresh and local foods. While farmers' markets and high-end restaurants and groceries stores that carry food from regional farms are able to cater to a segment of the population, a large majority of consumers are unwilling or unable to purchase these goods at the going prices. Lower-cost foods can be found in most neighborhood grocery stores, but often this affordability comes at the cost of other factors, nutrition being one. With food products traveling over 1500 miles on average before they are consumed, they must be sufficiently durable to withstand shipping, but durability and shelf-life are often realized at the expense of nutritional content.²⁴

The environment also suffers from the current rate at which food travels and from the current methods of production, processing, and distribution. Given the stark reality of the world's imminent decline of oil production, and given that the modern food system relies greatly on the use of nonrenewable fossil fuel inputs, growing and processing food sustainably and closer to home is becoming increasingly important. Though California is the leading state in food production, it is relying on imports to feed its own population and exporting more food than ever before (about one-fifth of its agricultural products).²⁵ In fact, California is a net importer of food with 43 percent of the state's raw farm tonnage going to export, and 59 percent of the state's demand for raw farm products imported from domestic and foreign sources.²⁶ A shocking study shows that the state imports more

²³ State of California, Division of Land and Resource Protection, Farmland Mapping and Monitoring Program. *California Farmland Conversion Report, 2000-2002*. December 2004.

²⁴ Kloppenburg, Jack Jr., John Hendrickson and G. W. Stevenson. "Coming into the Foodshed," *Agriculture and Human Values* 13:3 (1996): 33-42.

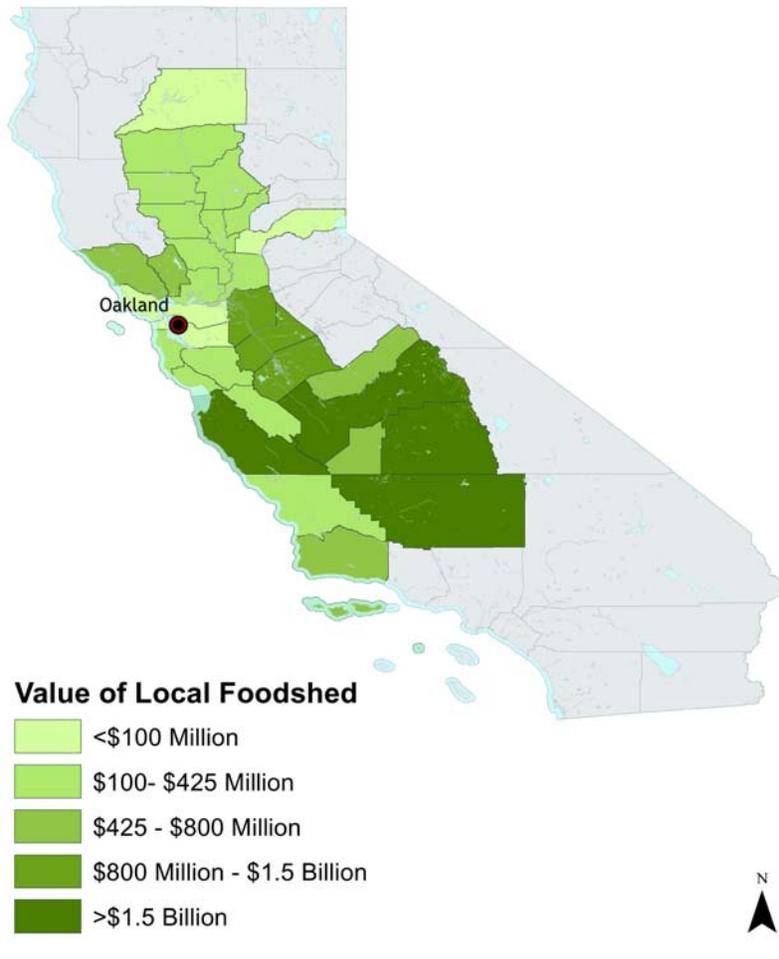
²⁵ Deumling, Diana, Steven Gorlick, Katy Mamen, and Helena Norberg-Hodge. *Ripe for Change: Rethinking California's Food Economy*. Produced for International Society for Ecology and Culture. 2004.

²⁶ Ibid

strawberries, asparagus, garlic, and other fresh vegetables ubiquitous to California crops, than we export.²⁷ This needless and redundant transportation of food greatly contributes to numerous air quality concerns, the least of which is global warming, and is unnecessarily contributing to the depletion of nonrenewable energy resources. With California capable of providing the vast majority of its foods from small and local farms, we could not only reduce our greenhouse emissions from the reduced travel of our food, but we could provide cheaper and healthier foods to our citizens and strengthen our local economies.²⁸ Additionally, by preserving our farmland we would also help to reduce sprawling development and greenhouse emissions resulting from extensive commuting, thereby allowing for overall healthier urban and rural communities.

Assessment of Regional Agriculture

Figure 2.1: Proposed Local Foodshed for Oakland²⁹



²⁷ Ibid

²⁸ Ibid

²⁹ US Department of Agriculture, 2002 Census of Agriculture

For the purposes of analyzing the potential for Oakland to obtain a larger percentage of its food from local and regional sources, 32 counties, geographically located in three distinct regions, were chosen either due to their proximity to Oakland or to their recognition as having highly productive agricultural land, or both. These counties were also chosen as Oakland's ideal foodshed because they were included as a part of the 2002 survey area of "Important Farmland in California" conducted by the California Department of Conservation, Farmland Mapping and Monitoring Program. Of these 32 counties, only six are not currently designated as Farmland of Local Importance, meaning agricultural land considered important to the local economy and land that is either currently producing, or has the capability of production, but does not meet the criteria of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.³⁰ All but three of the counties (San Francisco, San Mateo, and Marin) have lands designated as Prime Farmland, meaning land most suitable for producing food, feed, forage, fiber and oilseed crops. Most of the Central Valley's agricultural land is either classified as Prime Farmland or Unique Farmland, meaning land used to grow vegetables, grapes and horticultural crops, including fruits, nuts and berries, and that have unique soil and climatic requirements.³¹ It is important to keep in mind that other counties such as Mendocino are also perfectly situated to serve Oakland's food needs, but were not chosen as a part of this assessment because they are not included as California's most productive farmland regions. Additionally, while we stress the importance of preserving the region's productive farmland, we are also concerned with expanding the utilization of productive growing spaces within urban areas that have year-round growing climates. This is discussed in the subsequent section of this chapter.

One goal of this report was to assess whether the immediate region surrounding Oakland could serve as a foodshed to the City. Below, we quantify the value of food produced in the chosen region in order to later compare

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this to consumer expenditures on food in the City of Oakland (see "Food Retail Demand" in Chapter 3). Our findings show that total consumer demand represents approximately 7 percent of what is being produced in the region, therefore, we can assume that there is strong market potential for regional farmers to sell products to Oakland consumers. When looked at in terms of value, together the three regions alone are currently capable of supplying all of Oakland's food demands. But for this producer-consumer relationship to be developed more fully, producers not only need to find more profitable markets in Oakland, but appropriate distribution systems need to be in place for producers to easily access local markets. Chapter 3 will discuss some of the collaborative efforts among farmers, wholesalers, retailers, and institutions in the three regions that are attempting to increase distribution networks and bring more regional food to the Bay Area's markets.

³⁰ State of California, Division of Land and Resource Protection, Farmland Mapping and Monitoring Program. *California Farmland Conversion Report, 2000-2002*. December 2004.

³¹ United State Department of Agriculture definitions and classification system.

Though we know that the immediate region is productive enough to serve as a foodshed to Oakland (and other metropolitan areas in northern California), it is difficult to determine how much food from this region currently makes its way to Oakland consumers. Data such as the expenditures on food purchased from this region through Oakland farmers' markets, community supported agriculture, and farm stands is unavailable in a comprehensive form. Additionally, we were not able to account for local foods that appear in food retail establishments. Therefore this report does not present a baseline of regional food currently consumed in Oakland. However, standard data on consumer food expenditures for Oakland is presented in Chapter 4, "Consumption."

Central Valley

Table 1. Regional Food Production from Central Valley

Land in Farms (2002)	14,234,026 acres
Value of food commodities produced and sold in Central Valley (2002)	\$11,978,321,000
Value of food sold by Central Valley farms direct to consumers (2002)	\$57,981,000
Percent of food commodities sold directly to consumers (2002)	0.5 %
Value of certified organic food produced and sold in Central Valley (2002)	\$70,121,000

Source: US Department of Agriculture, 2002 Census of Agriculture

Located approximately 200 miles north, 300 miles south, and 100 miles east from Oakland the Central Valley represents a total of 18 counties. The region ranks number one in California, the nation, and perhaps the world for agricultural production, but also ranks number one among the nation's most threatened agricultural regions to urbanization.³² The region's economy is centered on agriculture, providing 20 percent of the counties' jobs.³³ Eleven of California's 20 top producing agricultural counties are in the Central Valley. The productivity of the region reflects a range of growing conditions (soils and local climates) conducive to specific crops and is also due to the widespread use of advanced irrigation technologies. Primary crops range from fruit, nuts and grapes in the northern counties of the region, to milk, chickens, chicken eggs, cattle and calves, and turkeys in the southern counties.³⁴ A significant amount of the poultry in this region is raised and delivered under production contracts, meaning that the livestock are sent directly to poultry companies nationwide for processing and packing. Much of the economic activity of the Central Valley that is not directly agricultural is associated with agriculture: packing, shipping, processing, and other secondary and tertiary activities that support agricultural enterprises. Some

³² "Farming at the Edge." American Farmland Trust. 2 December 2005. <<http://www.farmland.org/farmingontheedge>>.

³³ Great Valley Center. *The State of the Great Central Valley of California, Assessing the Region Via Indicators: The Economy 1999-2004*.

³⁴ Specific attention is given to food crops grown for human consumption, but other crops such as cotton and alfalfa are also present.

attribute as much as 30 percent of the Central Valley's total economy to agriculture, considering indirect multiplier effects.³⁵

Central Coast

Table 2. Regional Food Production from the Central Coast

Land in farms (2002)	3,981,209 acres
Value of food commodities produced and sold in Central Coast (2002)	\$3,124,976,000
Value of food sold by Central Coast farms direct to consumers (2002)	\$12,911,000
Percent of food commodities sold directly to consumers (2002)	0.4%
Value of certified organic food produced and sold in Central Coast (2002)	\$30,423,000

Source: US Department of Agriculture, 2002 Census of Agriculture

Located approximately 70 miles from Oakland at its closest point, and as far as 300 miles southward, the Central Coast represents a total of five counties. This region ranks number four in the nation for agricultural production,³⁶ but also ranks number 15 among the nation's most threatened agricultural regions to urbanization.³⁷ Agriculture is an important component of the Central Coast economy. Three of California's 20 top producing agricultural counties are in the Central Coast region. The region boasts fertile soils, a mild climate allowing year-round growing, a good water supply, and low air pollution. The Salinas Valley in Monterey County has been named the nation's "salad bowl" for being the top vegetable producing region in the world. The Salinas Valley produces 95 percent of the nation's artichokes and is responsible for a large portion of the nation's strawberries, head lettuce, cauliflower, and celery. The coastal areas in Santa Cruz, Monterey, San Luis Obispo and Santa Barbara counties produce field vegetables, strawberries and wine grapes, and the inland county of San Benito is primarily used for cattle grazing. San Luis Obispo County is also a large producer of vegetables (lettuce, bell peppers, broccoli) as well as strawberries and seed crops.³⁸

³⁵ Umbach, Kenneth. "A Statistical Tour of California's Great Central Valley." *California Research Bureau*. August 1997. 5 January 2006. <<http://www.library.ca.gov/CRB/97/09.>>

³⁶ Ibid

³⁷ "California Region, Central Coast." American Farmland Trust. 2 December 2005. <http://www.farmland.org/california/central_coast.htm>.

³⁸ Ibid

Bay Area Counties

Table 3. Regional Food Production from the Bay Area Counties

Land in Farms (2002)	2,073,686 acres
Value of food commodities produced and sold in Bay Area (2002)	\$1,235,335,000
Value of food sold by Bay Area farms direct to consumers (2002)	\$14,132,000
Percent of food commodities sold directly to consumers (2002)	1.1%
Value of certified organic food produced and sold in Bay Area (2002)	\$10,902,000

Source: US Department of Agriculture, 2002 Census of Agriculture

Extending as far as 90 miles northward and 70 miles southward, the Bay Area represents a total of nine counties. Overall, a metropolitan region, agricultural in the Bay Area is the smallest industry and agricultural resources and outputs are expected to remain around at their current rate over the next few decades.³⁹ Of the nine counties of the Bay Area region, Sonoma, Napa, and Solano are the top producers, with Alameda and San Francisco being the least productive. The majority of production in the top growing counties yields grapes and fruit, with vegetables and fruit split roughly equally in Solano. Sonoma County ranks number 16 among the state's top 20 agricultural producers, producing the state's second largest yield of wine grapes following Napa, as well as large quantities of livestock products and apples. Marin County provides a significant percentage of the Bay Area's milk supply in addition to other dairy products, meat, and shellfish.⁴⁰ In the county home to Oakland, Alameda, beef cattle, and wine grape operations are currently the county's top-earning food production activities.

Direct Marketing from Regional Foodshed

While the number of farmers' markets across the country has increased 79 percent since 1994, direct marketing continues to represent a small portion of food distribution in the United States and California.⁴¹ As of 2002, there were 372 farmers' markets in California, but the percentage of commodities from Central Valley, Central Coast and Bay Area farmers sold directly to consumers is strikingly low, at 0.5, .04, and 1.1 percent respectively. This means that most producers contract with distribution companies (the middle men) to get their food to market. Even though "cutting out the middle man" can earn farmers more profits, as discussed earlier, many small farms have been consolidated to produce and deliver solely under production contracts with large food processing corporations. For small producers to have direct access to ripe and nearby consumer markets, such as Oakland, an innovative and appropriate distribution systems need to be in place.

³⁹ Association of Bay Area Governments. Projections 2005. Based on employment projections.

⁴⁰ "Food Supply." *Marin Agricultural Land Trust*. 6 January 2006. <<http://www.malt.org/preserve/food.html>>.

⁴¹ Egan, Timothy. "Growers and Shoppers Crowd Farmers' Market," *New York Times*. 29 September 2002.

Within our proposed foodshed, Yolo County ranks first among all 32 counties in total sales of agricultural products sold directly to individuals for human consumption at \$8,300,000 in 2002, and Sonoma ranks second at \$5,866,000. Alameda County ranks nearly last of the 32 counties with only \$168,000 in total direct marketing sales. The *Alameda County Foodshed Report* found that Alameda County growers lacking effective collaborations for strategizing direct marketing techniques, as compared to other counties, and therefore are faced with competition for market opportunities close to home. The report found that consumer and advocacy efforts to change institutional and commercial food service buying practices have primarily focused on the characteristics of products rather than source location (e.g. organic or pesticide-free produce rather than produce grown locally).⁴²

Urban Agriculture and Community Gardening - Why is it Important?

In addition to assessing the capacity for the immediate region surrounding Oakland serve as a foodshed, another goal of this report is to assess the capacity within Oakland to produce local food. While resources did not allow us to produce a comprehensive land inventory for potential production sites in Oakland, the following section highlights many of the existing urban agriculture initiatives cropping up in the City and the current production capacity of these community enterprises. Chapter 6 provides a scenario of how urban gardening might expand if Oakland were to source 30 percent of its food from local and regional producers.

Urban agriculture is the production of food within the boundaries of a city. Urban agriculture can be a pot of herbs grown on a balcony, backyard gardening, rooftop gardening, greenhouses, market and community gardens, edible landscaping, and even beekeeping. Urban agriculture has many beneficial functions such as entrepreneurial food production, recreation, education, neighborhood beautification, gathering spaces, and community building. It also contributes to a sustainable urban environment by improving soil and air quality, supporting biodiversity by providing habitats for insects and birds, and reducing unnecessarily high temperatures caused by the heat island effect. Additionally, growing and distributing food within cities decreases energy needs and costs associated with long distances and conventional growing methods.

“There is a quiet revolution stirring in our food system. It is not happening so much on the distant farms that still provide us with the majority of our food; it is happening in cities, neighborhoods, and towns. It has evolved out of the basic need that every person has to know their food, and to have some sense of control over its safety and its security. It is a revolution that is providing poor people with an important safety net where they can grow some nourishment and income for themselves and their families. And it is providing an oasis for the human spirit where urban people can gather, preserve something of their culture through native seeds and foods, and teach their children about food and the earth. The revolution is taking place in small gardens, under railroad tracks and power lines, on rooftops, at farmers' markets, and in the most unlikely of places. It is a movement that has the potential to address a multitude of issues: economic, environmental, personal health, and cultural.”

Michael Ableman, *The Quiet Revolution*

⁴² Cozad, Shauna, Gail Feenstra, Shawn King, Henry Krusekopf, and Sarah Prout. *Alameda County Foodshed Report*. Produced for UC Sustainable Agriculture Research and Education Program, UC Davis. October 2002.

Though community gardening can be considered a component of urban agriculture it should not be confused with gardening for urban food production. Often as a part of a City's parks and recreation department, community gardens are usually established as form of recreation and neighborhood beautification; they are located in small lots or parks; and they are maintained by neighborhood residents and volunteers. Any food from these gardens is usually consumed on a small scale, usually by individuals and families. On the other hand, the purpose of community urban food production is to primarily grow organic food for sale (often to people in underserved neighborhoods), provide job skills training, and recover food waste for fertilizer. Community urban food production attempts to maintain a sustainable food chain within a shorter area by producing, processing, selling, and composting food within a neighborhood or city.

Urban agriculture is not new to American cities. During the Second World War, North Americans were encouraged to plant Victory Gardens to grow their own food so that larger agricultural production could be channeled to feeding Allied troops abroad. Urban dwellers in the United States and Canada converted backyards, empty lots and rooftops into gardens to grow hundreds of thousands of tons of fruit and vegetables. Today, food security and hunger are pressing concerns for many cities. Urban gardening not only "provides low-income people with an important safety net where they can grow nourishing foods and save income for themselves and their families," but it can provide the entire city with opportunities for economic development and community revitalization as residents take pride in neighborhoods gardens and provide all residents with reliable access to fresh and nutritious foods and a sense of community self-sufficiency.

Assessment of Urban Agriculture in Oakland

Table 4. Oakland Gardens

<i>Gardens</i>	
City Slicker Farms	7
People's Grocery*	5
OBUGS*	5
Oakland Food Connections*	1
SOL	2
Parks and Recreation Community Gardens	8
School Gardens in Collaboration with Alameda County Cooperative Extension*	6
East Oakland Boxing Association	1
Estimated Total Urban Gardens	35
Estimated Total Private Backyard Gardens	17,606

*Includes some school gardens

Figure 2.2: Oakland Community Gardens, School Gardens, and Urban Farms, Population Density per Square Mile

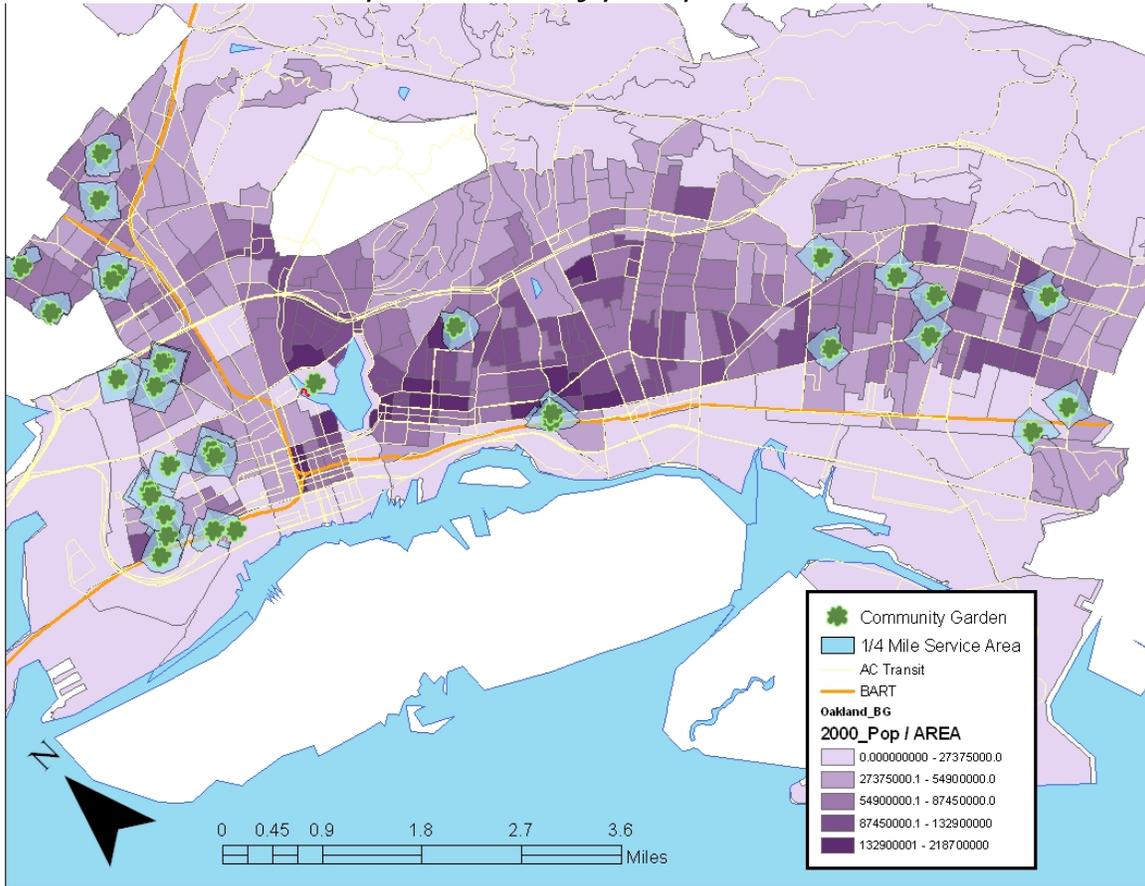


Figure 2.2 shows Oakland community gardens, school gardens and urban farms, along with the population density per square mile. A ¼ -mile “Pedestrian Buffer” around each garden shows the area around each garden from which a person would normally walk by Oakland’s streets. While some areas of Oakland are currently served by several community or school gardens, many areas, including some of the more densely populated areas - where community gardens could provide much needed opportunities for engaging with green space and fresh, nutritious produce – lack community or school gardens.

Community Initiatives

Community-Based Urban Gardens

City Slicker Farms, Oakland Based Urban Gardens (OBUGS), People’s Grocery, Sustaining Ourselves Locally (SOL), and Oakland Food Connections are five nonprofit organizations that manage urban gardens in Oakland neighborhoods for the purposes of applying education, entrepreneurship, leadership, innovation, environmental stewardship, and principles of community self-reliance to affect fundamental social change and enrich community life. This form of community capacity building is played out in a total of 35 different gardens throughout Oakland and is not only empowering the people

who are involved in the garden projects, but it is increasing access to food through community urban food production.

City Slicker Farms was founded in 2001. Their mission is “to increase self-sufficiency in West Oakland by creating organic, sustainable, high-yield urban farms and backyard gardens.”⁴³ They are funded by various private foundations. Their seven different farms and 11 backyard gardens demonstrate the viability of a local food-production system, provide community spaces, involve community members who want to learn about connections between ecology, farming and the urban environment, and give West Oakland residents tools for self-reliance. Their farms focus on growing a seasonal variety of organic produce by using sustainable growing practices and intensive growing methods to maximize yields. They produce culturally appropriate (African American, Latino & Asian) fruits and vegetables (cooking greens, root vegetables, herbs, summer crops, etc.);

eggs; honey; bread and pizza from their wood-fired oven. The seven farms represent 1.25 acres, 2.5 tons of food per year, and a total annual sales of \$5,000 in the 2005, though sales are expected to increase to \$20,000 within the next year as more land is brought into production.⁴⁴ The founding director acquired the land by deed of purchase. The land is zoned mixed use.

City Slicker Farms sells produce on a sliding scale to residents through farm stands, the Mandela Farmers' Market, and work-trade. Their farming practices depend on decomposed plant and food waste for fertilizer and they save seeds from their farms in order to foster varieties adapted to the growing region and reduce dependence on outside seed sources. Additionally, their composting program involves community outreach to encourage neighborhood residents to increase their composting practices. Education is integrated into their farming by conducting workshops for residents to learn about gardening, cooking, nutrition, natural medicine, and ecology. City Slicker Farms' backyard gardening program is discussed below.

Oakland Based Urban Gardens (OBUGS) was founded in 1998. Their mission is “to provide nutrition and environmental education and to facilitate community building through

Food Currently Produced in Oakland's Community-based Gardens:

...apples, beets, broccoli, cabbage, carrots, cauliflower, celery, cilantro, chard, collards, corn, eggplant, eggs, figs, garlic, green beans, herbs, honey, kale, kiwis, lemons, lettuce, mazuna, mustards, onions, oranges, peaches, peppers, pears, plums, potatoes, raspberries, spinach, strawberries, tomatoes, turnips...

⁴³ City Slicker Farms program collateral. Provided to Serena Unger and Heather Wooten on 14 December, 2005.

⁴⁴ Personal communication with Willow Rosenthal, Founder, City Slicker Farms. 12 January 2006.

a network of neighborhood gardens.”⁴⁵ OBUGS focuses on academic enrichment for youth, life and jobs skills, and on increasing access to healthy, fresh foods in order to provide an alternative to the processed foods available in the many neighborhood liquor stores. They actively farm three gardens and sponsor five. Four of these gardens are dedicated to in-school classes and after school activities in which children grow and use organic vegetables through gardening, cooking, and nutrition and the environmental education. OBUGS has worked with and established mentoring relationships over 300 West Oakland youth. The programs support both K-8 and high school curriculums that emphasize earth and biological sciences. Their YO!BUGS program provides employment opportunities for high school-aged students who learn how to open and operate small food-based businesses and how to conduct market research and advertise their products. In addition, YO!BUGS has recently initiated a coupon program in which one-dollar coupons are distributed throughout West Oakland to encourage residents to buy healthy foods from the Mandela Farmer's Market. Every Saturday OBUGS participates in the Mandela Farmers Market in which they conduct cooking classes and science activities for youth, and where OBUGS gardeners sell produce and flowers from the neighborhood gardens. Their three actively farmed gardens represent 4000 square feet of productive growing space and a total annual donation of \$500-\$1000 for food “sold” at the Mandela Farmer's Market.⁴⁶ The founding directors acquired their current garden lots by purchase and are actively seeking more garden space. Not including the school gardens, the land is zoned for non-commercial use.

People's Grocery which was founded in 2001, is discussed at length in Chapter 4, but appropriate to this section is a short discussion of their gardening activities. Their mission is “to uphold the human right to healthy and affordable food and to build community self-reliance by increasing neighborhood access to locally-produced fruits and vegetables and by promoting social enterprise, youth entrepreneurship, sustainable agriculture and grassroots organizing.” Their five gardens are maintained by People's Grocery staff, volunteers and school groups at the West Oakland YMCA, the North Oakland Land Trust, Ralph Bunch Middle School and Hoover Elementary school. Food produced at the gardens is harvested for sale to low-income residents through their Mobile Market and is also foraged by neighbors and school children. In addition, they will soon be launching a produce box delivery program.

Worm bins and compost bins collect food scraps from neighborhood residents and provide nutrients to grow their organic produce. Their gardens produce seasonal vegetables that grown well in the Oakland climate and that are desired by the community: collards, kale, chard, mustards, spinach, lettuce, cabbage, potatoes, garlic, onions, carrots, beets, broccoli, cauliflower, turnips, celery, cilantro, mazuna, green beans, kiwis, apples, oranges, lemons, pears, strawberries, plums, and figs. The gardens represent about one acre total, 1,280 pounds of food, and total annual sales of \$15,000 in 2005. They anticipate acquiring more production space and increased sales in the coming year. Garden space that is not located at schools are zoned as residential.

⁴⁵ Oakland Based Urban Gardens program collateral. Provided to Serena Unger on December 15, 2005.

⁴⁶ Personal communication with Aysha Massel, OBUGS. 10 March 2006.

Sustaining Ourselves Locally (SOL), founded in 2003, resides in a mixed-use building and adjacent lot in East Oakland. The founders' goal is to create a model of urban sustainable living as a means of bridging the gap between cities and the food sources they depend on.⁴⁷ Their mission is "to support and promote an urban community involved in, inspired by, and educated about environmentally and socially conscious living, and to provide a space to model and teach these practices locally. By growing organic food, conserving and recycling resources, and organizing community events and workshops, [they] are exploring ways to make the city more healthy and livable for all its inhabitants." Sol has revitalized two formerly vacant and underutilized lots by removing debris and invasive weeds and has laid down mulch and soil to plant fruit trees and vegetables. Keeping within the principles of sustainability and self-reliance, the gardens use water from a demonstration greywater irrigation system. The commercial storefront of the building hosts a large kitchen for demonstrations, a common area for community space, and event space for educational workshops. In 2004 and 2005, SOL led weekly workshops in the summer with Team Oakland and Youth Employment Partnership to create a garden out of a nearby empty lot. Participants aged 15-21, learned basic gardening and construction techniques through on-the-job training, learned how to cook with ingredients from the gardens, learned about litter abatement, and created a mural on the exterior fence facing International Boulevard. Eight to 12 students participated each week during the summer and occasionally throughout the year. The garden is also frequently visited by neighborhood youth on a regular basis.

In addition to its youth programs, SOL maintains a greenhouse with seasonal organic vegetable starts that are sold at the Alameda Marketplace and on their site with annual sales of about \$2000. The primary garden represents 5000 square feet of land. A second gardening location was acquired when a local business owner saw what they had done with the first garden and asked SOL if they would want to garden lot behind her business. This new garden is approximately 2500 square feet. They estimate that together the two gardens produced approximately a half a ton of food, valuing approximately \$1800 in one year. Their growing methods are organic and biointensive (companion planting, green mulching, nutrient cycling via onsite compost) mostly planted in the ground in rows and garden beds, with some container planting. Food is distributed directly to project members, visiting class groups, neighbors and guests. Food from SOL's second garden is used mainly to support a weekly Farm Stand run on site where food items is sold for nominal fee 25 cents. Leftovers are given to neighbors or purchased by the SOL household at market value. Their gardens produce tomatoes, eggs, lettuce, greens, peaches, peppers, eggplants, broccoli, garlic, herbs, onions, carrots, strawberries, raspberries and corn.⁴⁸ SOL rents both lots and their building.

⁴⁷ Green Matthew. "Organic urban farm blossoms in what used to be a blighted vacant lot." *San Francisco Chronicle*. 14 October 2005.

⁴⁸ Personal communication Julia Shams, SOL. 23 February 2006.

School Gardening

Alameda County Cooperative Extension works with seven Oakland schools⁴⁹ to provide curriculum resources, staff trainings, plants and seeds, and all other resources to support school gardens. By exposing school children to how food is grown, the primary goal of the gardening program is to have the children consume more nutritionally-sound foods. Other school garden programs include **OBUGS** who uses the Extension curriculum to work with four schools⁵⁰ using two of their garden sites, **People's Grocery works** who works with Hoover Elementary and Ralph Bunch Middle School to provide ecological and gardening classes that are focused on nutrition and growing food, and **Oakland Food Connections** who started an after school garden club at Unity High School. Here, high school students learn about nutrition through positive eating and study habits and how to build their own gardens. There have been several other school gardening programs that have not lasted due to the lack of institutional and community support. School garden programs depend on parents, community garden activists, and interest school staff with on-going support to be long-lasting and effective programs.

The Watershed Project has offered various gardening and composting classes for Oakland Unified School District teachers as continuing education for the last ten years. Teachers that chose to take classes can learn how to integrate gardens into schools by reducing waste and utilizing composting resources from the school, and get ideas on how to make connections between sustainable agriculture and locally grown food while testing kid-friendly, healthy recipes using the food from school gardens. The Watershed Project also offers grants to schools that are interested in starting gardens.

Backyard Gardening

Though it is difficult to know how many residents have edible backyard gardens and landscaping in Oakland, there is a great deal of interest in private gardens and there are many educational programs and resources that cater to beginning as well as advanced backyard gardeners.

Bay-Friendly Gardening Program is offered by StopWaste, the public interface of the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board. The program provides home gardeners tools for creating a beautiful and healthy "Bay-Friendly" garden. The program was developed to encourage residents to make environmentally friendly gardening choices, such as reducing waste, integrated pest management, and protecting the watersheds of the San Francisco Bay. Since 2004, when the educational program began, it has served about 1000 Oakland residents.⁵¹ In addition, StopWaste has provided home composting bins to Alameda County residents since 1993. It has sold a total of 17,616 bins to Oakland residents since then, which represents about 20 to

⁴⁹ East Bay Conservation Corps Elementary and High Schools, and Growing Children, Markham, Peralta, Stonehurst, and Whittier Elementary Schools .

⁵⁰ Lafayette and Prescott Elementary Schools, Saint Martin de Porres Elementary and Middle Schools, and Roots Charter School.

⁵¹ Personal Communication with Jeanne Nader, Program Manager, Bay-Friendly Gardening Program, StopWaste.Org. 9 January 2006.

22 percent of single family homes in Oakland, and the highest number of bins sold in any Alameda County city. Since most people do backyard composting to produce fertilizer for their gardens, it can be assumed that since 1993, at a minimum, 17,616 Oakland single-family households have maintained backyard gardens.⁵²

In addition to the Bay-Friendly Gardening Program, other educational resources for backyard gardening include **Merrit College, Wildheart Gardens, Alameda County Master Gardeners Program, Oakland Food Connections, City Slicker Farms**, and three demonstration gardens located throughout Oakland. Merrit College sponsors many of the Bay-Friendly Gardening classes as a part of the Landscape and Horticulture program and also offers over 50 other classes including mushroom cultivation, edible landscapes, herbs in the landscape and urban community gardening. Wildheart Gardens which is operated by a horticulture teacher at Merrit College, is a demonstration permaculture⁵³ garden that provides educational services to local residents as well as free plants for schools, community gardens, and other nonprofits. Alameda County Master Gardeners are volunteers trained by UC Cooperative Extension to give research based horticultural information to the home, school, and community gardeners of Alameda County.

City Slicker Farms' Back Yard Garden Program builds and maintains organic backyard gardens with low income West Oakland residents in order to increase nutrition and improve the environment in the community. Each participant receives two 4x8 planter boxes with trellises, a fruit tree, soil, plants, seeds, a compost bin, and a West Oakland Gardening Guide to start with. Once each quarter City Slicker Farms follows up to provide more plants, seeds and compost and to work with the participants to maintain their garden and answer questions. Every six months participants can receive two more beds if they wish. City Slicker Farms works with volunteers to build and install the gardens, as well as with knowledgeable gardeners from the UC Cooperative Extension Master Gardeners program who make the quarterly follow-up visits. In return for the garden supplies and technical assistance, all participants are asked to become "neighborhood garden leaders" and help other neighborhood members to build their own gardens. The Backyard Garden Program started in September 2005 with the goal of having 11 participants by the end of the year. That goal was easily met and the goal for 2006 is to have 50 new participants.

Temescal Amity Works is a community art and backyard produce re-distribution project sponsored by a collaboration among neighborhood residents, the Temescal Merchants Association, and Pro Arts. The collaboration's goal is to create project that facilitates and documents the exchange of backyard produce, conversation, and collective biography within the Temescal Neighborhood of Oakland. In early 2005, they began to maintain a community crop sharing program called the Big Backyard and a storefront just off of Telegraph Avenue. They have familiarized themselves with the neighborhood's citrus trees and vegetable gardens and offer to pick and collect what people do not want or cannot use.

⁵² Ibid

⁵³ Permaculture (permanent agriculture) is the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability, and resilience of natural ecosystems. It is the harmonious integration of landscape and people providing their food, energy, shelter, and other material and non-material needs in a sustainable way. Definition retrieved 11 January 2006 from <http://permaculture.org.au>.

Whatever they collect is given away for free at the storefront and delivered to people's homes. They also make neighborhood jams, juices, and sauces during heavy growing seasons. These are distributed as widely as possible to interested neighbors, visitors, and community groups. In addition they sponsor a "seed swap" which allows neighborhood residents to bring seeds from their gardens to share or take some seeds from others to plant. The Temescal area lends itself well to this program since it was planned as an "orchard suburb" in the 1920's and 1930's and there are still many houses with citrus trees in their front and backyards, hundreds of backyard gardens, and edible landscaping such as rosemary bushes, blackberry bushes, and plum trees.⁵⁴

City Initiatives and Policies

Parks and Recreation Community Gardens

Oakland's Community Garden Program is managed by the City's Office of Parks and Recreation and works in partnership and collaboration with Oakland Unified School gardens, youth service programs, horticultural career-training (Americorps, Project YES, Merritt College Horticulture Dept., OBUG, Team Oakland), and Oakland residents. The program provides plots of land for residents to grow organic vegetables, fruits and flowers with the mission to empower participants "to meet their needs for health, recreation, good nutrition, job skills, community security and natural beauty."⁵⁵ Currently there are eight gardens offering over 175 plots located throughout Oakland and approximately 125 participants, with 10 on the waiting list. To tend a plot the annual fee is \$25. Most plots are dedicated to one individual each and are about 32-50 square feet in size. The Lakeside Demonstration Garden is different in that it is an education garden focused on building community, where groups of people work together in larger areas with multiple plots. The goal of this garden is to demonstrate different approaches to gardening for the public. For other resources and education on gardening, the Parks and Recreation Community Gardening Program directs residents to the Bay-Friendly Gardening Program, Merritt College, Alameda County Master Gardeners, and Berkeley's Ecology Center for resources and education on gardening. All Parks and Recreation community gardens are zoned as open space.

General Plan Policies

Urban food production necessitates land use planning since gardens require space and must function within the surrounding urban context. While the Land Use and Transportation element of Oakland's general plan does not take up this issue directly, it does state that a goal of the "Economic and Environmental Sustainability" component is "Achieving Environmental Quality," which is to be pursued through "expanding the network of open space opportunities in order to promote conservation of natural resources and improve air quality, enhance recreation and open space opportunities, and assure environmental justice and a healthful living environment."⁵⁶ Urban gardening and food production can certainly be seen as fulfilling the tenets of this goal. This goal is applied to land use most clearly with

⁵⁴ Description of Temescal Amity Works borrowed 9 January 2006 from <http://www.amityworks.org>.

⁵⁵ Personal communication with Joshua Amaris, Oakland Parks and Recreation Community Gardening Program Coordinator. 21 February 2006.

⁵⁶ Oakland General Plan: Land Use and Transportation Element, p. 27

the “Urban Park and Open Space”⁵⁷ classification, which includes garden systems but does not explicitly mention food production. There is no land use classification that explicitly and solely pertains to urban gardening and food production.

The Open Space, Conservation and Recreation (OSCAR) Element does explicitly address community gardening as a component of the General Plan. Policy OS-2.3⁵⁸ “Community Gardening” calls for the City of Oakland to “Maintain and support a viable community gardening program to foster an appreciation of local ecology, instill a sense of stewardship and community, and provide a multi-ethnic, multi-generational activity open to all” by funding community garden programs and promoting gardens and “mini-farms” in Oakland schools. Policy OS-2.3 also suggests that parcels owned by the Office of Parks and Recreation, schools, and East Bay MUD reservoirs could all serve as potential land for urban food production.

Summary of Key Findings and Barriers

Oakland is surrounded by a highly fertile region that produces a significant amount of the country's food, and enough food to provide Oakland residents with more than 30 percent of their consumption. While Oakland residents may be eating food grown within this region, a large portion of it is likely to have first traveled out of the state for value-added processing and only then brought back to Oakland and other California consumers. This unnecessary travel siphons economic opportunity from local communities and decreases the freshness and nutritional value of food. Another portion of Oakland's food is likely to be imported from out of state or from foreign producers, also causing a loss of economic and nutritional opportunities.

Although the areas surrounding Oakland rank high among the country's agricultural producing regions, they are also ranked high among the regions at greatest risk of losing farmland. The high rate of farmland converted to urban uses, is a result of California's growing population combined with current land use planning practices, as well as a result of small farmers who are financially stressed and unable to compete in the global food market. California towns and cities can provide these farmers with more lucrative markets and can thereby help to preserve the state's rapidly depleting fertile land. Innovative distribution systems that are able to link these farmers to nearby consumers need to be considered. Closely linked distribution systems not only provide more economic opportunity and a higher quality of food, but can decrease greenhouse emissions and poor air quality.

Over the last five years Oakland has begun to see a budding grassroots movement toward food security expressed through growing interest in urban gardening and its complementary activities such nutrition education and job skills training. Urban gardens are taking place on private parcels (zoned residential or commercial), on public school grounds, on City owned property in the case of the Parks and Recreation Community Gardening Program, and in private backyards. This study found 35 community-based gardens in Oakland. Though this represents a small percentage of food consumed in Oakland, many Oakland residents whose access to fresh food is limited have benefited from the availability of food grown in these

⁵⁷ Oakland General Plan: Land Use and Transportation Element, p. 158

⁵⁸ OSCAR Element, p. 2-20

gardens. While we do not know the exact number of private backyard gardens, we do know that backyard gardens are popular in Oakland as seen by the number of educational programs that cater to Oakland gardeners, the number of residents who participate in them, as well as the number of residents who have purchased composting bins from StopWaste.

Though there are many urban agriculture initiatives cropping up in Oakland, and though there are many resources for Oakland residents to educate themselves on growing food, there are also many challenges that prevent people from engaging in growing food in the City. Perceptions of contaminated soil or air pollution, securing land for food production, and securing broad community participation in garden projects are three major barriers to expanding Oakland-based food production.

Although there is skepticism of urban food production based on the reality that some of Oakland's soil suffers from contamination from past industrial and other uses, contaminated sites should not be universally ruled out as potential sites for food production. A recent study concluded that brownfields have great potential as sites for urban agriculture if remediation can be successfully undertaken.⁵⁹ The U.S. General Accounting Office identified 130,000 to 425,000 contaminated vacant industrial sites, or brownfields within the U.S. that could be safely converted to agricultural purposes when properly developed.⁶⁰ For example, phytoremediation can be a cost-effective process that uses plants to absorb heavy metal contaminants, such as lead, from the soil. Flower and plant production could be done on brownfields as an intermediary use of the land before applying other production uses.

Another barrier has to do with land security for urban gardens. Given the current housing crunch, the City's space is valuable to residential development, especially as the City pursues an aggressive housing policy. While the Parks and Recreation Community Gardens are zoned as open space, other current urban gardening takes place on leased land zoned residential or commercial which does not provide long-term stability for the future of these gardens. Giving these areas a special zoning designation and developing explicit land use policies that support urban agriculture, would ensure that urban food production is viable in the long-term. This could allow urban food production to coexist with residential development as a long-term community resource if edible landscaping, roof-top gardening, community gardens, and on-site composting were to be incorporated into residential or mixed-use develop projects. Instead of urban gardening competing with residential and commercial uses, if sophisticatedly integrated, it can be synergistic to these urban land use activities.

Various methods of food production could also take place on certain types of land that are not suitable for residential or other uses. With a growing interest in urban gardening, many community-based urban garden organizations are expanding and looking for additional land

⁵⁹ Heinegg, Alexandra, Patricia Maragos, Edmund Mason, Jane Rabinowicz, Gloria Straccini, Heather Walsh. "Brownfield Remediation: Solutions for urban Agriculture." *McGill School of Environment*. 2002. 12 January 2006. <http://www.mse-research.mcgill.ca/envr401_2002/brownfields>.

⁶⁰ "Urban Agriculture and Community Food Security in the United States: Farming from the City Center to the Urban Fringe." A Primer Prepared by the Community Food Security Coalition's North American Urban Agriculture Committee. October 2003. 6 January 2006. <<http://www.foodsecurity.org/PrimerCFSCUAC.pdf>>.

to use for growing food and flowers. There are many underutilized parcels without structures, either private or publicly owned, that could serve as long-term garden spaces. In addition to public easements, rights-of-way, parks, and school yards for which soil could be used to grow food, other properties that are paved could be used for container gardens, greenhouses, or other alternative farming techniques (e.g mushroom cultivation). To measure the use of such idle land, one study suggests that urban growers who employ continuous cropping and space-intensive growing techniques can earn as much as \$100,000 from high-value and specialty crops off of one acre in a good season.⁶¹ Instead of letting certain areas of land sit fallow to grow weeds, it could be used to capture value for the Oakland economy.

Having a database of both public and private available land, and an administrative organization to systematically manage the use of the land, could put underutilized land to use and could provide security of land tenure if official lease agreements were designed to accommodate the needs to urban farmers and gardeners. For more information on conducting an urban land inventory, as well as sample a sample use contract, see “Appendix 4: Blueprint for a Publicly-Owned Vacant Land Inventory & Management Plan for Urban Agricultural Use.”

School gardens have also shown a degree of instability as gardens do not stand as high funding priorities and as the staff, parents, students, and community organizations who organize and maintain gardens do not always have a long-term interest since there is high turn over among teachers, since parents become disinvested as children age and leave school, and since community organizations are not well funded to provide ongoing resources. In order to be viable and long-lasting, school gardens need to have stable and committed resources to ensure that they are maintained and used in conjunction with curriculum. Widespread garden-based education provided through the school curriculum not only creates opportunities for our children to discover fresh food and make healthier food choices at an early age, but it could also be a valuable resource to ensure that Oaklanders remain engaged in gardening and healthy, productive lifestyles throughout adulthood.

A critical component to the success of a “30% Local Food” plan is a physical and policy infrastructure to support the viability of new and existing urban food production. Chapter 6 provides a more detailed list of ideas that might address the barriers discussed here.

⁶¹ Roberts, Wayne. *The Way to a City's Heart is through its Stomach: Putting Food Security on the Urban Planning Menu*. Published by Toronto Food Policy Council as a part of the Crackerbarrel Philosophy Series. 2001.