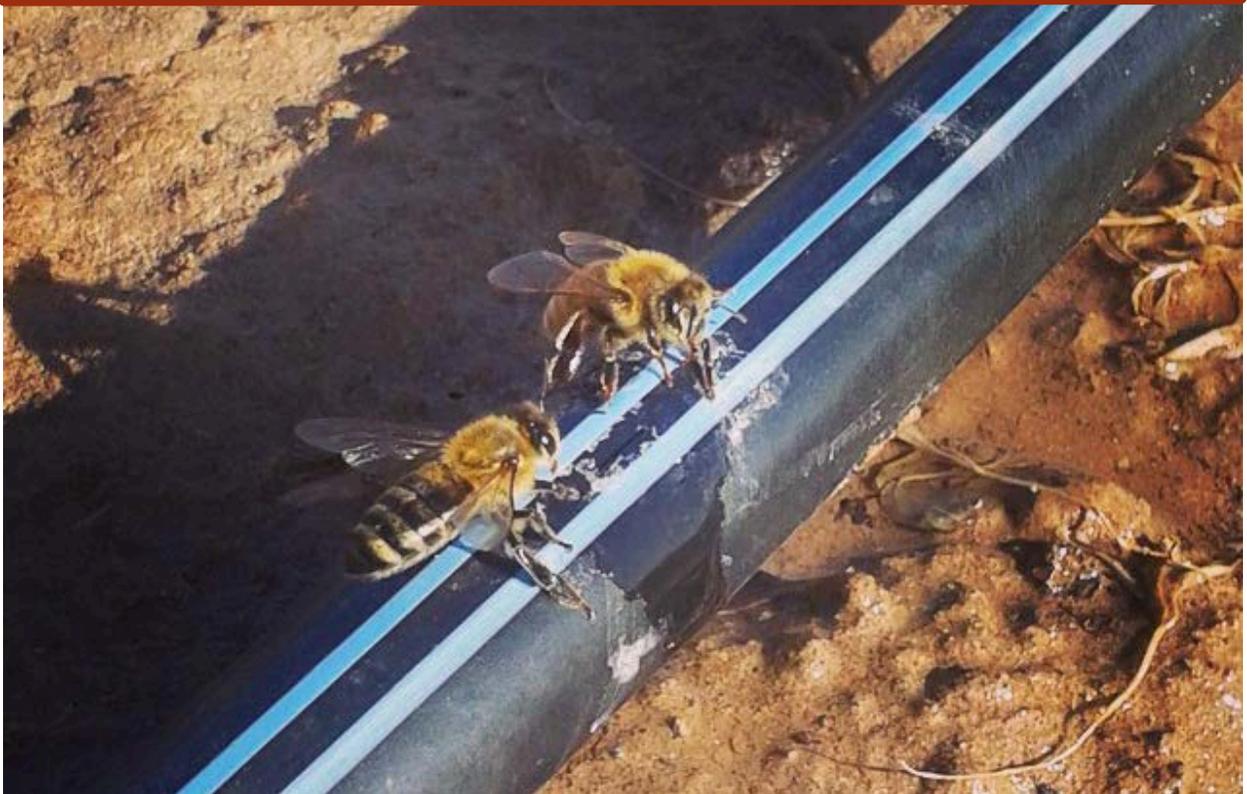




Las Cruces Urban Agriculture and Food Policy Plan

Growing Good in Las Cruces

Krysten Aguilar



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Table of Contents

Executive Summary	5
Chapter 1: Scope and Purpose	7
A context for Las Cruces.....	8
How This Plan Was Developed	10
Chapter 2: A Food Systems & Urban Agriculture Framework	12
Importance of Our Local Food System.....	13
Urban Agriculture and Local Food System Activities	16
Benefits of Urban Agriculture	28
Chapter 3: Goals and Strategic Directions	30
Vision and Goals	31
Objectives and Recommendations.....	33
Chapter 4: Implementation	39
Appendices	43
1: Glossary	44
2: Alignment with City of Las Cruces Plans	48
3: Example Metrics	51
4: District Maps.....	65
5: References	66

Executive Summary

Las Cruces is the second largest city in New Mexico and the urban center of Doña Ana County. Food production and processing within the city can increasingly play a critical role in the regional and state agricultural and food culture and economy. The importance of local, sustainable, and innovative food production and processing to regional economic development, including the expansion of employment opportunities, training, and education, as well as ensuring access to healthy food and improving the health outcomes of the community, cannot be overstated. This is particularly true in Doña Ana County and Las Cruces, where lack of employment, childhood hunger, access to healthy food, and diet-related diseases are at high levels.

The food system encompasses everything from the seed to the compost pile – farmers, distributors, businesses, families, community members, and policy makers all have a role to play.

The purpose of this plan is to provide informed recommendations to advance and guide the city's efforts to support and expand food and agriculture activities within Las Cruces.

While the food system is large and complex, the scope and scale of the recommendations in this plan focus on the local level and what the City of Las Cruces can achieve within its jurisdiction together with a range of public, private, and community partners.

There is substantial evidence that the growth of local food systems positively impacts the local economy in a variety of ways. A USDA report, "Local Food Systems: Concepts, Impacts, and Issues", summarizes the results of a variety of studies looking at the issue of economic impact of local food markets. The overall review found that regional or local food systems have the potential to positively impact the local economy. Local food systems will inevitably retain more revenue within a region than conventional purchasing. Whether it is direct-to-consumer sales or sales to local retailers, a greater percentage of each dollar will remain in the region. In this way, a regional food hub and healthy local food system will foster regional economic development



Urban agriculture (UA) is the practice of cultivating, processing, and distributing food in and around towns and cities. This can take the form of community gardens, urban farms, food trucks selling local produce, community kitchens, and many more activities. Taking part in urban agriculture activities can help people overcome potential personal or cultural barriers such as age, ethnicity, class, or gender while instilling pride in communities and increasing community revitalization, safety, and quality of life.



UA includes the following components:

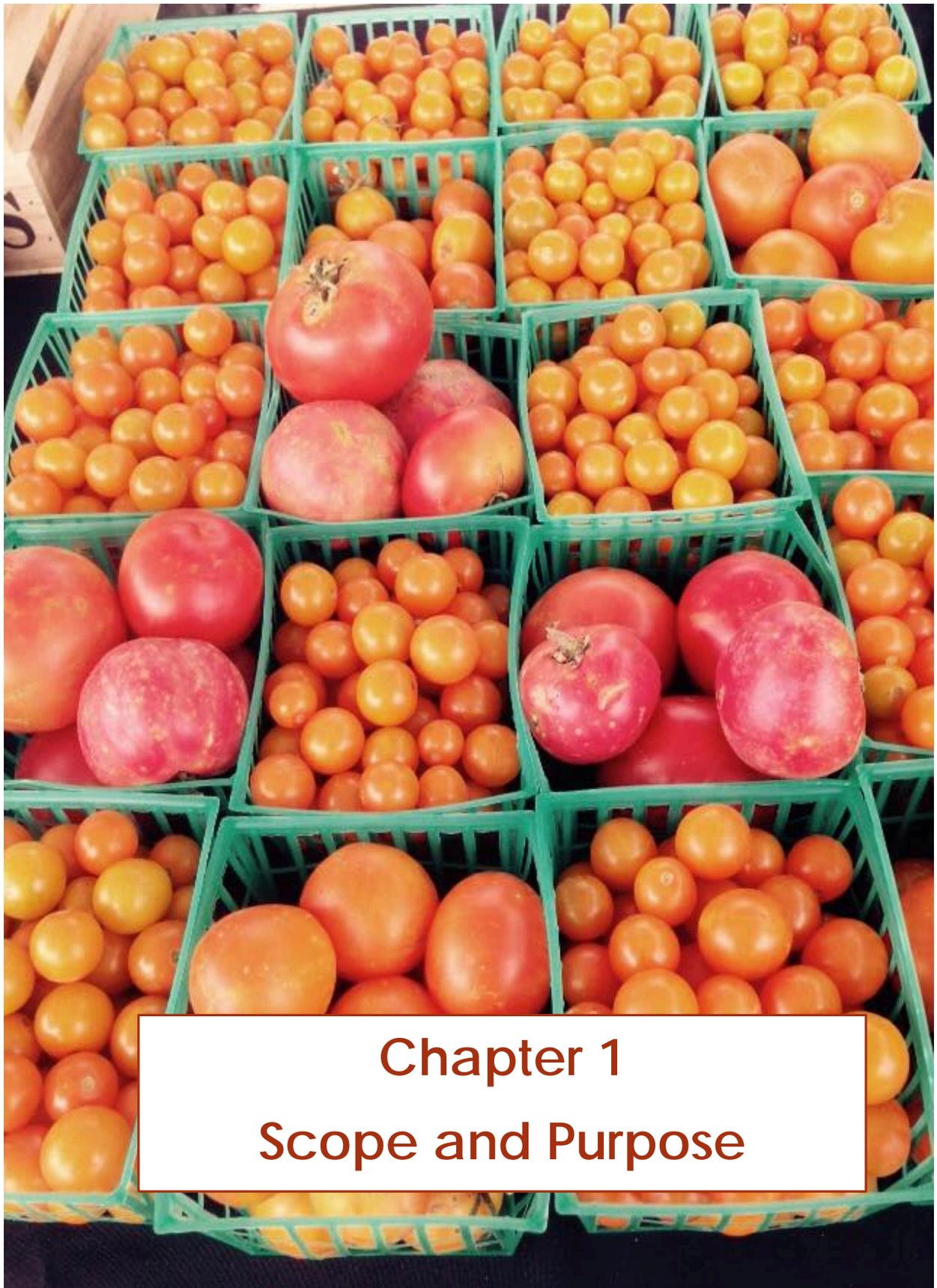
Water	Local food procurement	Compost
Healthy food access	Backyard chickens	Food Waste
Infrastructure	Meat rabbits	Gleaning
Farmers markets	Bees and other pollinators	Community commercial kitchen
Roadside farm stands	Goats and sheep	Urban Farm Incubator

An Urban Agriculture and Food Vision for Las Cruces:

Las Cruces has a resilient food system that fosters healthy communities & residents and contributes to the overall economic, social, cultural, and environmental vitality of the city.

Urban agriculture and the food system in Las Cruces will contribute to the following goals:

- **A healthy & food-secure community:** All residents should have enough to eat and access to affordable, local, healthy, sustainable, and culturally appropriate food.
- **A stronger, more vibrant local economy with more food growing and processing opportunities:** Businesses and entrepreneurs that produce, process, distribute, and sell local and healthy food are a key component of a vibrant local economy.
- **Healthier ecosystems and smart environmental resources stewardship:** Food-related waste should be prevented, reused, or recycled, and natural resources should be used wisely.



Chapter 1
Scope and Purpose

1.1. A context for Las Cruces

Growing food has long captured the imagination: fields of ripe red tomatoes, rows upon rows of green onion tops, a landscape full of the ideals of beauty and delicious food – these images feed us, both emotionally and physically. While we may consider farming and the growing of food to happen only in rural areas, historically, food was produced where people were, both in the countryside and in urbanized areas. There has recently a huge resurgence in the interest of growing our food where we are – increasingly, in cities and towns. Mesilla Valley has a long, rich history of agricultural production and mouthwatering cuisine. Food and agriculture are an integral part of the regional economy; food production and related activities within Las Cruces is a natural and beneficial extension of that history.

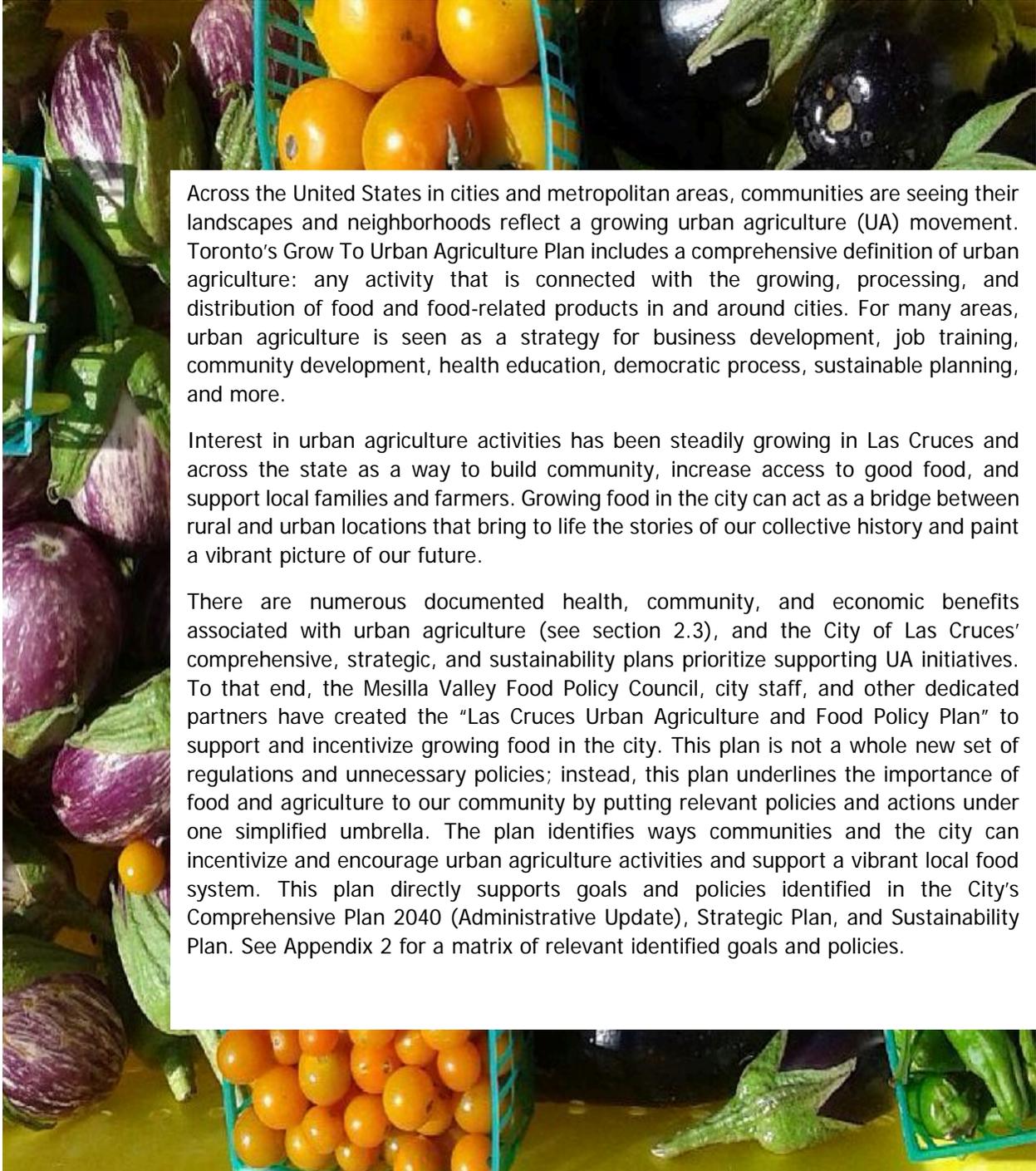
The Mesilla Valley Food Policy Council (MVFPC) works to increase awareness of local food system issues. Created in 2012 as a taskforce, the MVFPC is a collective effort to improve the availability of safe, healthy, and sustainable food at reasonable prices for all residents, as well as fostering links between food, health, and local economic development in our region through collaborative efforts. Spearheaded by La Semilla Food Center and the New Mexico Department of Health's Healthy Kids Las Cruces initiative, the council has worked diligently over the past two years to develop a comprehensive urban agriculture and food policy plan for the City.

The City of Las Cruces has an important role to play in the larger context of the regional foodshed. Bounded by mesas on the east and west, the Mesilla Valley stretches from just south of Radium Springs in the north and Sunland Park in the south, encompassing much of Doña Ana County and including more than 76,347 acres of land in irrigated farms. The Mesilla Valley region's location along the Rio Grande corridor has a rich tradition of agricultural production through time. Long before Onate and other Spanish settlers reached the Rio Grande in 1598, many different Native American tribes hunted, fished, and grew crops along the fertile land surrounding the river. Today, the area is dominated by agriculture and is renowned as the mecca of green chile production.

Las Cruces is the second largest city in New Mexico and the urban center of Doña Ana County. Food production and processing within the city will increasingly play a critical role in the regional and state agricultural and food culture and economy. The importance of local, sustainable, and innovative food production and processing to regional economic development, including the expansion of employment opportunities, training, and education, as well as ensuring access to healthy food and improving the health outcomes of the community, cannot be overstated. Particularly in Doña Ana County, where lack of employment, childhood hunger, access to healthy food, and diet-related diseases are at unacceptable levels.



Urban Ag Visioning and Kickoff Event



Across the United States in cities and metropolitan areas, communities are seeing their landscapes and neighborhoods reflect a growing urban agriculture (UA) movement. Toronto's Grow To Urban Agriculture Plan includes a comprehensive definition of urban agriculture: any activity that is connected with the growing, processing, and distribution of food and food-related products in and around cities. For many areas, urban agriculture is seen as a strategy for business development, job training, community development, health education, democratic process, sustainable planning, and more.

Interest in urban agriculture activities has been steadily growing in Las Cruces and across the state as a way to build community, increase access to good food, and support local families and farmers. Growing food in the city can act as a bridge between rural and urban locations that bring to life the stories of our collective history and paint a vibrant picture of our future.

There are numerous documented health, community, and economic benefits associated with urban agriculture (see section 2.3), and the City of Las Cruces' comprehensive, strategic, and sustainability plans prioritize supporting UA initiatives. To that end, the Mesilla Valley Food Policy Council, city staff, and other dedicated partners have created the "Las Cruces Urban Agriculture and Food Policy Plan" to support and incentivize growing food in the city. This plan is not a whole new set of regulations and unnecessary policies; instead, this plan underlines the importance of food and agriculture to our community by putting relevant policies and actions under one simplified umbrella. The plan identifies ways communities and the city can incentivize and encourage urban agriculture activities and support a vibrant local food system. This plan directly supports goals and policies identified in the City's Comprehensive Plan 2040 (Administrative Update), Strategic Plan, and Sustainability Plan. See Appendix 2 for a matrix of relevant identified goals and policies.

2

Farmers markets

6+

Community Gardens

~15

School Gardens

Las Cruces Snapshot

- 2011 – Community forums throughout the county
- 2012 – Doña Ana Taskforce was formed
- November 2013 – City Council Resolution supporting a food policy council
- May 2014 – Urban Agriculture Visioning and Kickoff Event held at City Hall
- October 2014 – Las Cruces Urban Ag & Farm to School Community Celebration held in downtown Las Cruces



How This Plan Was Developed

The Las Cruces Urban Agriculture and Food Policy Plan is the result of the community's collective knowledge about the current food environment. It is the culmination of our vision, desires, and ambitions for a healthy and vibrant Las Cruces-- grounded in present realities. The plan is also the result of a tremendous commitment of time, knowledge, and concern. La Semilla Food Center, in partnership with Healthy Kids Las Cruces, spent over three years gathering data, hosting community meetings, and facilitating the Mesilla Valley Food Policy Council. The Doña Ana Food Policy Taskforce – a precursor to the Mesilla Valley Food Policy Council - was formed in early 2011. A core group of Taskforce participants met regularly to further research, coordinate activities, and progress efforts to form the Mesilla Valley Food Policy Council. The Taskforce has also held three food system meetings-- in April and September 2011 and March 2012.

During the summer of 2011, La Semilla Food Center coordinated with the Colonias Development Council and Healthy Kids Las Cruces to facilitate seven community forums with over 145 attendees from throughout the Paso del Norte region. These forums, held in Anthony, Chaparral, El Paso (2), Hatch, Las Cruces, and Vado provided substantial community input on potential food system goals, targets, and policy interventions. This information exchange between communities has continued to grow with the emergence of new projects and partnerships crossing community, county, and state lines.

As the group coalesced, the Mesilla Valley Food Policy Council (MVFPC) officially came into being. In November of 2013, the Las Cruces City Council passed a resolution supporting a food policy council.

The MVFPC created working groups around areas of particular interest to members; these working groups focused on the topics of healthy food access, a regional food plan, and urban agriculture. In order to advance the efforts of the urban agriculture group, in May 2014, the Mesilla Valley Food Policy Council hosted the "Urban Agriculture Visioning and Kickoff Event" at City Hall. This event introduced the possibilities of urban agriculture in the southwest. Demonstration tables were set up to sample local foods, see vertical gardens, and learn more about the happenings in the area. Participants were led through a visioning exercise and asked for feedback, which indicated that community members were excited and ready to see UA

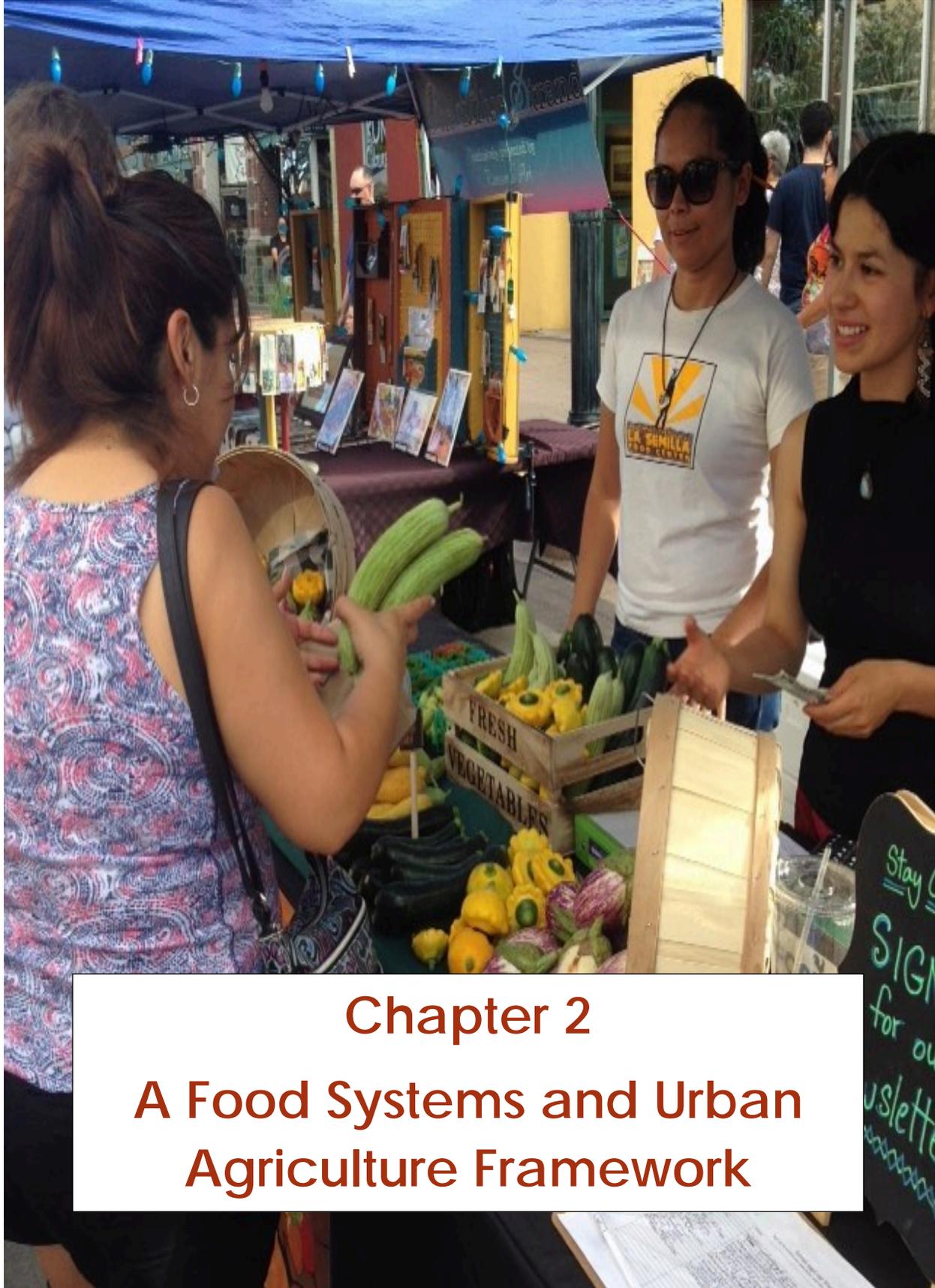
activities move forward in Las Cruces. Participants expressed a desire to see more food grown in the city to create healthier and happier communities and to be a force for economic gardening through local business development.

The Las Cruces Urban Ag & Farm to School Community Celebration was held in October 2014 in downtown Las Cruces in partnership with Project Mainstreet. The event involved education on the urban agriculture initiative and the initial planting of Adopt-a-Pot, as well as food trucks, family and kid activities, and a movie showing of Growing Cities. Roughly 218 people participated in the event. Various smaller meetings with community members and stakeholders have been held regularly to solicit feedback and input on the policy plan throughout the entire process.

This UA plan is the culmination of community visioning and outreach meetings and collaborative work by partners committed to making Las Cruces a vibrant, healthy, and happy community to in which live, work, and raise families. The Comprehensive Las Cruces Urban Agriculture and Food Policy Plan will support the rich, vibrant heritage of delicious food and family farms in the Mesilla Valley in general and Las Cruces in particular. This celebration of our food culture will foster healthier communities and healthier people.

The purpose of this plan is to provide informed recommendations to advance and guide the city's efforts to support and expand food and agriculture activities within Las Cruces. While the food system is large and complex, the scope and scale of the recommendations in this plan focus on the local level and what the City of Las Cruces can achieve within its jurisdiction together with a range of public, private, and community partners.





Chapter 2
A Food Systems and Urban
Agriculture Framework

2.1 Importance of Our Local Food System

From farmers markets to restaurants that specialize in buying and serving local food, the ways in which we procure and consume our food has changed dramatically over the past decade. This move toward buying local is fueled both by mainstream activists and writers, and by scientists and international organizations, all expounding on the multiple benefits of buying our food close to home. These benefits are far reaching and cover many different aspects within a community: economy and jobs, agriculture, sustainable development, community food security, and ecological sustainability, to name just a few.

The USDA launched the “Know Your Farmer, Know Your Food” (KYF2) initiative in September 2009, which was “designed to spur a ‘national conversation’ on how to develop viable local and regional food systems and stimulate new economic opportunities”. Additionally, many prominent professional organizations have stressed the importance of sustainably, healthy food systems for communities across the U.S., including the American Planning Association (APA), American Public Housing Association, Academy of Nutrition and Dietetics, and the American Nurses Association¹. The APA published a report articulating the importance of urban agriculture in planning for healthy, sustainable communities². The fact that so many organizations are stressing the importance of healthy, local food systems is an indication that communities nationwide are recognizing and capitalizing on their regional food supplies. Consumers and their attendant buying power are shifting towards a more sustainable and logical way of procuring their food.

Local food systems issues are springing up across the country, being spearheaded by city, county, and state governments, non-profit organizations, businesses, and food advocates. A healthy and thriving local food system positively affects the community in various ways, from health to education, and food security to local economies. Buying local foods can benefit everyone involved: farmers, consumers, and distributors. Since each region and locality differs, each food system will also differ, being most effective when local considerations are kept at the forefront of planning and initiation.



The food system encompasses everything from the seed to the compost pile – farmers, distributors, businesses, families, community members, and policy makers all have a role to play.

There is substantial evidence that the growth of local food purchasing positively impacts the local economy in a variety of ways. A USDA report, “Local Food Systems: Concepts, Impacts, and Issues”, summarizes the results of a variety of studies looking at the issue of economic impact of local food markets. The overall review found that regional or local food systems have the potential to positively impact the local economy. Local food systems will inevitably retain more revenue within a region than conventional purchasing. Whether it is direct-to-consumer sales or sales to local retailers, a greater percentage of each dollar will

remain in the region. In this way, a regional food hub and healthy local food system will foster regional economic development

The way in which food is grown and purchased has a significant impact on the environment, including soil health, water quality and supply, and ecological impacts. Perhaps the most significant aspect is the distance that food travels to reach consumers. Transportation distance affects the amount of fossil fuel usage, generally resulting in greater greenhouse gas emissions. Local food supply chains can be an important aspect of reducing pollution and carbon dioxide emissions into the atmosphere.

This, however, is not a cut-and-dry issue. While some studies have found that local food systems produce significantly fewer carbon dioxide emissions, because of the shorter distances food must travel, others have stated that distance is not an adequate measure for environmental impact. Transportation generally accounts for less of a share of energy usage than production and processing. However, even allowing that distance traveled may only be small portion of energy usage, local food systems may still be a better overall bet for conservation of energy sources and other resources. Often, local farms can provide fresher products, since they have not had to endure long and global processing, and this both provides consumers with a healthier product and keeps money circulating in the local economy rather than spreading to the global market.³

Las Cruces: At a Glance

Population (2015): 103,722

The city's population is young, with 52 percent of the population under the age of 34. The age group 5- 19 makes up 20 percent of the city's total population.*

*Unemployment rate** (Nov. 2015):*

Las Cruces	New Mexico	United States
6.1%	6.8%	5.0%

*Las Cruces Land Acreage Breakdown***:*

Category	Acres	Percentage
Agriculture	447	1.0
Commercial	1525	3.0
Industrial	781	2.0
Infrastructure	10,168	21.0
Institutional	2,230	4.0
Leisure	890	2.0
Mixed Use	35	0(.1)
Residential	8320	17.0
Undeveloped	24,880	50.0
Total	49,276	100

Sources: *CLC Comprehensive Plan*Sources;**United States Bureau of Labor Statistics;*** 2012-2013 City of Las Cruces Land Use Inventory Survey/



Food related health issues abound in our society. Obesity, heart disease, and diabetes are a few of the problems associated with poor nutrition. These issues affect not only the individual, but the community as a whole, impacting everything from health care costs to worker productivity to quality of life. The food environment (the kinds of foods easily accessible in a community) has a direct impact on health, and individuals without grocery stores in their community have been shown to higher rates of all three chronic health conditions.*

Food has become a leading cause of death in the U.S.: high-calorie diet, combined with a lack of exercise, accounts for one-fifth of the annual deaths in the U.S. Access, or lack thereof, to whole foods and education play a large role in individual and community health. Conservative estimates indicate that improving New Mexico residents' diets could save \$140 million in healthcare costs per year, according to the New Mexico Food Gap Task Force.

According to the CDC, in 1990 only around 15% of adults in most US states were obese; today, both state and national numbers are all much higher. According to the Centers for Disease Control, 60% of New Mexico residents are overweight or obese, with one-third (34%) overweight and more than one-quarter (26%) obese. Nearly four of every five state residents (78%) eat fewer fruits and vegetables that nutritionists recommend (five servings per day), and 22 percent report they have no physical activity.

The U.S.-Mexico Border Diabetes Prevention and Control Project estimates that roughly 72 percent of adults in the Paso del Norte region are obese or overweight and 16 percent of border residents have diabetes; an additional 14 percent have pre-diabetes. The profile of childhood obesity from the New Mexico Department of Health is particularly disturbing with 13.2 percent of kindergarten and 22.6 percent of third grade students obese in New Mexico. The New Mexico Indicator-Based Information System reports that diabetes is the 6th leading cause of death in the state.

Finally, heart disease, the leading cause of death in the U.S. for men and women, becomes a significantly increased risk is for those who already have one or both of the above conditions.

Treuhaff, Sarah and Allison Karpyn. "The Grocery Gap: Who Has Access to Healthy Food and Why It Matters" 2010. PolicyLink, The Food Trust. Available at: http://thefoodtrust.org/uploads/media_items/grocerygap.original.pdf
NM IBIS, Centers for Disease Control

2.2 Urban Agriculture and Local Food System Activities

Urban agriculture (UA) is the practice of cultivating, processing, and distributing food in and around towns and cities. This can take the form of community gardens, urban farms, food trucks selling local produce, or community kitchens.

But why is this practice important in a community? What makes these facets of urban agriculture valuable? There is a lot to be gained from these practices in areas ranging from the social or the economic to topics of health and the environment. Engaging in these activities brings people of all ages, cultures, and classes together in efforts that foster pride in their local communities, further builds strong relationships between neighbors, and creates self-sustaining, self-sufficient communities with improved nutrition access and understanding. Furthermore, evidence has shown that, “with improved access to well-maintained green spaces, citizens become engaged through volunteer or paid work which often engages those that are unemployed, or those with employment opportunities available to them.”⁴

This section will elaborate on the forms of urban agriculture mentioned above, and introduce some of the common programs, ideas, and activities that make up urban agriculture.



Urban Farming and Gardening

Urban farms and community gardens are the components of UA that are the most familiar to people – growing food on vacant lots, hoop houses, and community gardens nestled in neighborhoods are the face of UA for many.

Urban farms are large-scale, intensive-use sites where food can be grown “by an organization or private enterprise, and often include entrepreneurial opportunities like growing food for sale.”⁵ An urban farm grows food in an urban area on land, usually either a backyard or a vacant lot, which would not typically be dedicated to producing food. Urban farms go beyond home consumption and grow produce for market. Urban farms can provide many benefits for urban areas, including access to fresh food for urban consumers and open space for communities.⁶

Several reports indicate job creation and training, business incubation, and food access as major impacts of urban farms.⁷ Many urban farms choose the term farm because they tend animals as well as grow plants. Chicken coops, bee hives, and rabbit warrens are the most common urban farm livestock elements.

Community gardens, on the other hand, are smaller-scale urban agriculture sites “where individuals and families grow food primarily for personal consumption or donation.”⁸ Community garden plots are often intended to serve a particular neighborhood or local community center. Community gardeners are generally not permitted to sell the products of their labor for profit, and most community gardens are for personal use only. They can have a variety of owners: institutions, community groups, land trusts, or private citizens. Many of the most successful community garden ventures cited within the literature are operated under the city’s parks and recreation departments or partner with other public agencies for land access.⁹ There is a growing demand for community gardens, which often have long waiting lists.¹⁰ Community gardens also provide greater access to fresh and nutritious vegetables, playing a significant role in addressing public health and livability issues.¹¹ One of the greatest benefits of community gardens is that they help build the character of a neighborhood through sustainable community development. They can be sites for a combination of activities: food production, sharing of basic resources such as land and water, and recreation. As a result, community gardens provide many opportunities for social and cultural exchange.¹²

Home gardens are food-producing spaces on private, residential property. Home Gardens are used as an accessory use on residential properties, which may include commercial sales to the public. Growing your own food has many health benefits, including



The City of Las Cruces operates four community gardens:

- Munson Senior Center
- Las Esperanzas
- East Mesa/Sage Café
- Gomez Park

There are also community gardens at various churches, schools, and preschools in the city.



Adopt-a-Pot is a collaboration between the MVFPC and Parks and Recreation. Currently, 15 of the 32 planters between Las Cruces Ave. and Griggs Ave. are adopted by community members and businesses.



"The Doña Ana County Master Gardeners Program trains volunteers to assist the Doña Ana County Cooperative Extension Service faculty & staff to provide accurate, research-based gardening information and programs to county residents. In 2013, Master Gardeners in Doña Ana County, volunteered 5980 hours, valued at \$132,397 in-kind. Master Gardeners offer assistance to those seeking to start or maintain a garden in the area."

Doña Ana County Extension Master Gardener Program, NMSU College of Agricultural, Consumer and Environmental Sciences (aces.nmsu.edu)



control over pesticides and increased fruit and vegetable consumption. Vegetables that ripen in the garden have more nutrients than some store-bought vegetables that must be picked early.¹³

Community Supported Agriculture (CSA) is one of the more recent additions to the UA spectrum. CSAs operate by allowing participants to purchase a share in a local farm, which in exchange for an up-front payment will make regular produce deliveries for the duration of the growing season. This encourages seasonal consumption, reducing the environmental impact of out-of-season food purchases, and also helps to address food insecurity with grants and "adopt-a-share" programs that bring CSA to low-income families.) is a newer example of urban farming.¹⁴ Several studies have found that direct marketing efforts in urban centers allow farmers to expand their business and encourage many small added-value businesses¹⁵

City Landscaping is a type of urban agriculture that has numerous benefits. Besides beautifying our City, landscaping restores and remediates abandoned or vacant lots and enhances the value of surrounding property. Perhaps more importantly to Las Cruces, land that is planted (versus bare earth, rock, pavement, concrete sidewalks, paved roads, etc.) cools and cleans the landscape through transpiration and by removing carbon dioxide from the atmosphere. Landscaping also aids environmental restoration and remediation through reusing abandoned areas, vacant lots, and certain waste streams, such as yard waste compost, from the urban landscape. A greener urban landscape can also provide psychological, emotional, and general health benefits.¹⁶ The city's Parks and Recreation Department is currently partnering with the MVFPC to coordinate Adopt-a-Pot, a program that encourages residents and families to care for the large planters along downtown Main Street and plant edibles in them, including herbs, vegetables, and plants to attract pollinators.

Other types of urban gardens abound in cities, as well, each serving a particular purpose in the community. School gardens serve as learning classrooms for youth to develop an understanding not only of growing food, but also to immerse them in experiential learning in math, science, and other subjects. Demonstration gardens also serve an educational purpose to the wider community; sensory gardens immerse infants and toddlers in worlds of wonder; and healing gardens provide spaces that promote refuge, healing, and stress reduction.

Healthy Food Access and Infrastructure

Healthy food access is troublesome for many families. In hundreds of neighborhoods across the country, nutritious, affordable, and high quality food is out of reach, particularly low-income neighborhoods, communities of color, and rural areas. Known for its arid landscape, New Mexico also encompasses vast stretches of “food deserts” where residents don’t have access to plentiful, nutritional and affordable food. New Mexico has a food insecurity rate of 16.6%, while Doña Ana County has an insecurity rate of 16.8%, compared to a national rate of 14.3%.¹⁷ Bringing healthy food retail into neighborhoods that have historically lacked access is a key strategy within a multifaceted approach to improve the food environment and advance community well-being. Healthy food retailers such as grocery stores, farmers markets, cooperatives, mobile markets, and other vendors of fresh, affordable, nutritious food are critical components of healthy, thriving communities.

While much progress is being made to develop new models of food retailing that serve communities previously left out, the evidence continues to suggest that many families are underserved and that the problem is most pronounced for residents of low-income communities and communities of color. This is particularly true in Doña Ana county and Las Cruces. The research indicates that poor access to healthy food corresponds with poor nutrition and that new healthy food retail contributes to community economic development in tangible, positive ways¹⁸.

Doña Ana County Food Insecurity Rate: 15%, or 31,770 residents

Childhood hunger: 29.2% of New Mexican children are food insecure; that’s over 150,000 kids. New Mexico ranks #1 for childhood hunger in the nation.

Census tracts in Las Cruces that are identified as food deserts (areas with low income and low food access) by the USDA Economic Research Service: 10

Good nutrition is vital to good health, disease prevention, and essential for healthy growth and development of children and adolescents. Evidence suggests that a diet of nutritious foods and a routine of increased physical activity could help reduce the incidence of heart disease, cancer, and diabetes—the leading causes of death and disability in the United States.¹⁹ As non-profit ChangeLab Solutions explains,

“One strategy local governments can employ to help support schools’ efforts to improve student health is to prohibit fast food restaurants and mobile vendors from locating near schools. This strategy is aimed particularly toward middle and high school students who may leave campus during lunchtime or get to and from school on their own. By enacting zoning measures to prohibit the location of fast food restaurants and mobile food vendors near schools, communities can prevent children from substituting low-nutrient, high-calorie food for the healthier options served at school. Communities may also choose to extend the prohibition to parks, community centers, libraries, and other locations children frequent.”²⁰



Farmers markets refer to a market where local farmers can bring produce to sell to the general public seasonally or year-round. Farmers markets are an integral part of the urban/farm linkage and have continued to rise in popularity, mostly due to the growing consumer interest in obtaining fresh products directly from the farm.²¹

As people become concerned with public health, local economies, environmental impacts, and food safety, demand for farmers markets will increase. Since 1994, the number of farmers markets in the USDA National Farmers Market Directory has more than quadrupled to a reported 7,864 in August 2012.²² By making local, fresh, and healthy produce available to consumers, these markets encourage relationships between vendors and consumers and can lead to a strong and loyal customer base for farmers.

Furthermore, farmers markets support community food security by providing easy access to healthy and affordable options for lower income residents, who may have limited options at regular food stores; this can be due to lack of proximity, higher prices, or a combination of these and other factors.²³ As one report explains, "Farmers markets are often the first point of entry into the marketplace for small and medium-sized producers. Farmers markets help small and medium-sized producers incubate their businesses, develop and test new product lines, obtain better prices for high-value product than alternative distribution channels, and obtain a reliable source of farm income that helps keep wealth in local communities."²⁴

The Las Cruces Farmers and Crafts Market is currently part of Double Up Bucks, a state-funded program that matches SNAP purchases of fruits and vegetables dollar for dollar, increasing the economic impact of the market and getting more fresh fruits and vegetables to underserved families. Other types of farmers markets include mobile markets that take produce directly into neighborhoods using a food truck or other type of vehicle and mini or pocket markets, single-stand farmers markets that can easily be set up in buildings or corner stores.

Farm or roadside stand is generic term for a type of marketing site in which a farm producer sells directly to consumers. A roadside stand may be distinguished from a roadside market in that the latter is usually a permanent structure that is often open year-round.²⁵ A roadside stand is a seasonal, temporary or semi-temporary structure that may be located on or off the farm.



Combined Annual Economic Impact of the Las Cruces Farmers and Crafts Market: \$8,393,137.64

SNAP sales at the market (June 1 – August 16, 2015): \$6,490.00

Double Up Bucks at the market (June 1 – August 16, 2015): \$6,309.00



Urban agriculture is already being identified as an integral part of healthy communities.

The Amador Proximo plan is a community-driven plan to develop a blueprint for redevelopment of the Amador neighborhood. One main goal of the plan is to:

“leverage... agricultural heritage” of the neighborhood. Identified strategies to incorporate in the neighborhood include community gardens and a community kitchen to process and market produce as well as incubate small businesses and offer job training.”



Roadside farm stands are usually operated on the farming location by a single farm operation. Some farms are able to devote their entire production to a single farm stand outlet, but in many cases farms operate a retail farm stand in addition to other marketing arrangements such as wholesale, farmers markets, or community supported agriculture (CSA).²⁶ Other variations include multiple farms cooperating to grow for a single stand and off-farm stand locations.

Urban Farm Incubator and education centers offer new farmers affordable access to land, and sometimes infrastructure, while they refine their farming and marketing skills. Urban incubator farms provide immediate hands-on work for residents who are learning skills that can be transferred into entrepreneurial opportunities. Incubator farms are a form of community development with positive agri-entrepreneurial impacts, health impacts, job creation, food security, and sustainable local food systems.²⁷

A shared-use community commercial kitchen can be a key piece in building economic opportunity, environmental sustainability, and community health.²⁸ It can also play a critical role in developing a healthy, safe, and secure local food supply on an ongoing basis and during times of crisis.

As long as such facilities meet the local requirements for food production and sale, shared-use kitchens can help to create income for entrepreneurs and their families by providing a cooking space for those who are unable to invest in production space for a fledgling business. A shared kitchen can provide a location to process locally grown food, thus increasing economic opportunity for local farmers.²⁹

Local food procurement by governments and institutions plays an important role in increasing access to local, healthy food. In recent years, consumer demand for local food has increased steadily, as more people choose to spend their food dollars at farmers markets, farm stands, restaurants, and grocery stores, as well as on community-supported agriculture operations (CSAs) that source agricultural products grown nearby. By 2008, the value of local food sales in the United States had reached \$4.8 billion, up from \$1.2 billion in 2007 and \$551 million in 1997.³⁰

Supporting the local food economy can also have important economic, quality of life, and environmental benefits such as preserving farmland and training the next generation of farmers.³¹ Money spent at a local farm can circulate within that community between six and fifteen times, supporting local agriculture, businesses, and people.³² Living-wage jobs develop

through food production, processing, and sales. New markets of institutional food service providers are also created.

There has been a growing interest in food procurement by private and public institutions—from the growing Farm to School movement in K12 schools to colleges and universities, state agencies, and public hospitals. Many states have noted the potential for public institutions to serve as leading purchasers of locally-grown food, and have enacted legislation to promote the use of food grown within the state. For example, the Puget Sound Regional Council explains in its Local Food Procurement Policies that,

“Encouraging government and other institutions to purchase locally grown food can strengthen the local food system. It establishes new institutional markets for local producers, maximizes the freshness and quality of food served by these agencies, and can support improvements to local food infrastructure, such as distribution and processing facilities.”³³

Because approximately 50% of food is consumed away from home,³⁴ institutions that provide meals, snacks, vending and beverage choices can have a role in improving diets, since making healthy foods like fruits and vegetables available increases the likelihood that they will be consumed. So-called food hubs, which the USDA defines as “centrally located [facilities] with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products,” help to increase the consumption of fruits and vegetables simply by making them available. In doing so, they not only increase the choices for their patrons but also provide a business model that is designed to aid farmers with support and infrastructure.³⁵

Water Sources for Urban Agriculture

Annual precipitation in the region varies greatly. On average the Las Cruces area receives about 9 inches of rainwater per year, but this can vary from only a couple inches to over 15 inches in any given year. The average, 9 inches, translates to about 8,000 gallons of water per 1,000 square feet of impervious surface per year.

Las Cruces Utilities provides water to homes and business in Las Cruces. Water is drawn from the Mesilla Bolson and the Jornada del Muerto Bolson via wells. While this water is currently the principal supply of water available for all types of use, there are several alternative sources of water that can be used for urban agriculture.

Wastewater Reuse

Treated wastewater, known as reclaimed water, provides recycled water for industrial, landscape irrigation, or other demands not requiring potable quality water, via a dedicated delivery system that is completely separated from the system used to deliver potable water.³⁶ The separate delivery system is made from purple piping and so the use of treated wastewater is sometimes known as purple pipe water.

Reclaimed water is currently available in Las Cruces and is provided for several large irrigation uses. Reclaimed water is of an appropriate quality to be used for growing food grade crops, but supply is limited to the capacity of the treatment plant.

Greywater, which is water that has not come in contact with sewage, can be obtained from sinks, showers, and washing machines in homes or businesses. This water is typically used as-is, untreated, and is appropriate for some landscape plants but not others, due to high salt content or other contaminants. It is important to be careful about using untreated greywater on food plants, as the plants can uptake contaminants from the water.

Water Harvesting

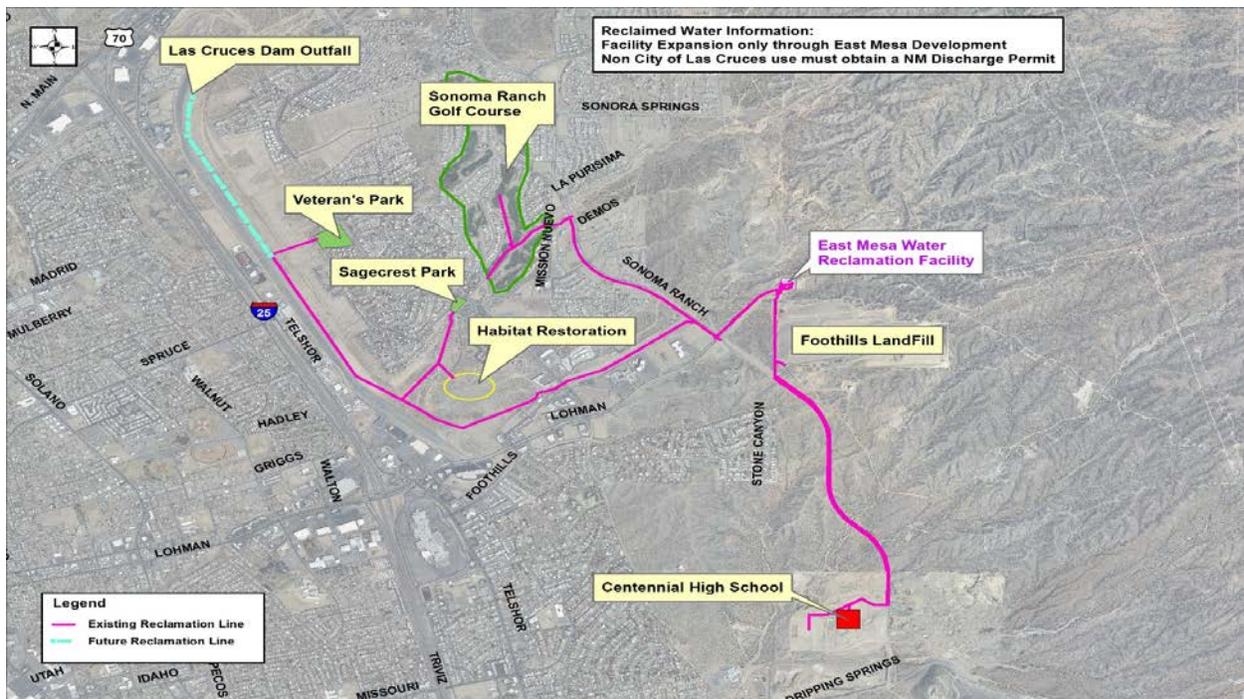
Rainwater harvesting is the capture and use of rain water from rooftops and other impervious surfaces, such as concrete patios and driveways. Stormwater harvesting is the capture and use of runoff water from storm drains or creeks. The harvested water is typically used for landscape irrigation or groundwater recharge. It is appropriate for large scale landscapes such as parks, schools, commercial sites, parking lots, and apartment complexes, as well as small scale residential landscapes.³⁷ The water can also be used for other non-potable uses, depending on the purity of the water. For example, intercepted water can be routed for use in evaporative coolers, toilet flushing, pet washing, car washing, indoor plant watering, and pet and livestock watering.³⁸ When harvested water percolates into the soil and becomes available to plants, it is known as green water.

Water can be captured in rain barrels and above- and below-ground cisterns, then subsequently applied to landscapes and food crops. Or the water can be captured directly on the ground by forming small depressions in the ground called swales. When capturing rainwater, it is important to consider the capacity of the cistern against the needs of the landscape where the water will be applied. The larger the cistern, the more likely that the captured water can supply most or all of the plants' needs; however, larger cisterns cost more to install.

Historically in this area harvested rain water provided water for drinking, landscape watering, and agricultural uses. When Las Cruces developed a centralized water supply, treatment, and distribution system water was no longer intentionally harvested. Recently, as people have become aware of the importance of extending the water supply, water harvesting has gained popularity, and it is once again being used to provide water for residential and commercial landscapes.

There are many advantages to harvesting rain water and stormwater. The harvested water reduces the use of high quality drinking water for landscape irrigation. It is available free of charge and puts no added strain on the municipal supply. In addition, green water helps recharge groundwater and enables the soil to act as a natural air conditioner.

"Purple Pipe"/Reclaimed water on the Las Cruces East Mesa



Livestock

There is growing interest in keeping livestock in urban areas in North America. Livestock refer to raising animals, including on residential properties. Chickens can be raised to produce eggs and meat and goats or rabbits can be used to produce fertilizer or get rid of waste. Bees can be important to urban farming due to the role they play in pollination and their production of honey.

Backyard chickens have taken center stage across the nation over the past several years, with many cities passing ordinances and revising zoning codes to allow chickens within city limits. Chickens are part of a healthy local food system, enabling community members to produce their own food while providing many benefits. The main benefit of a backyard flock stems from the human-animal bond³⁹, as well as the production of a food item, primarily eggs. Emotional benefits include increased social interaction and reduced feelings of loneliness, isolation, and depression.⁴⁰ Eggs from well-tended backyard chickens are more nutritious and tastier⁴¹, and chickens are great composters. An additional environmental effect is the supply of chicken manure, which, when properly handled, is a good garden fertilizer, reducing the need for commercial fertilizers.⁴²

Meat rabbits can help feed a family with lean, nutritious meat. Rabbits breed and grow so quickly that one pair of healthy does (females) can produce more than 600 pounds of meat in a year,⁴³ compared to the dressed yield of 400 pounds for an average year-old beef steer. Rabbits also use feed more efficiently than cows do: According to the U.S. Department of Agriculture, a rabbit needs 4 pounds of feed to make 1 pound of meat. In comparison, beef cattle need 7 pounds of feed or more to create 1 pound of meat, reports Michigan State University's Department of Animal Science. Today, we know that it's also an excellent source of protein, has less cholesterol and fat than chicken, beef, lamb or pork, and that it has an almost ideal fatty acid ratio of 4:1 omega-6 to beneficial omega-3 fatty acids.⁴⁴ Rabbits are clean and quiet, so they aren't disruptive to neighbors and their manure can enrich a home garden without composting.



Chickens in Las Cruces:

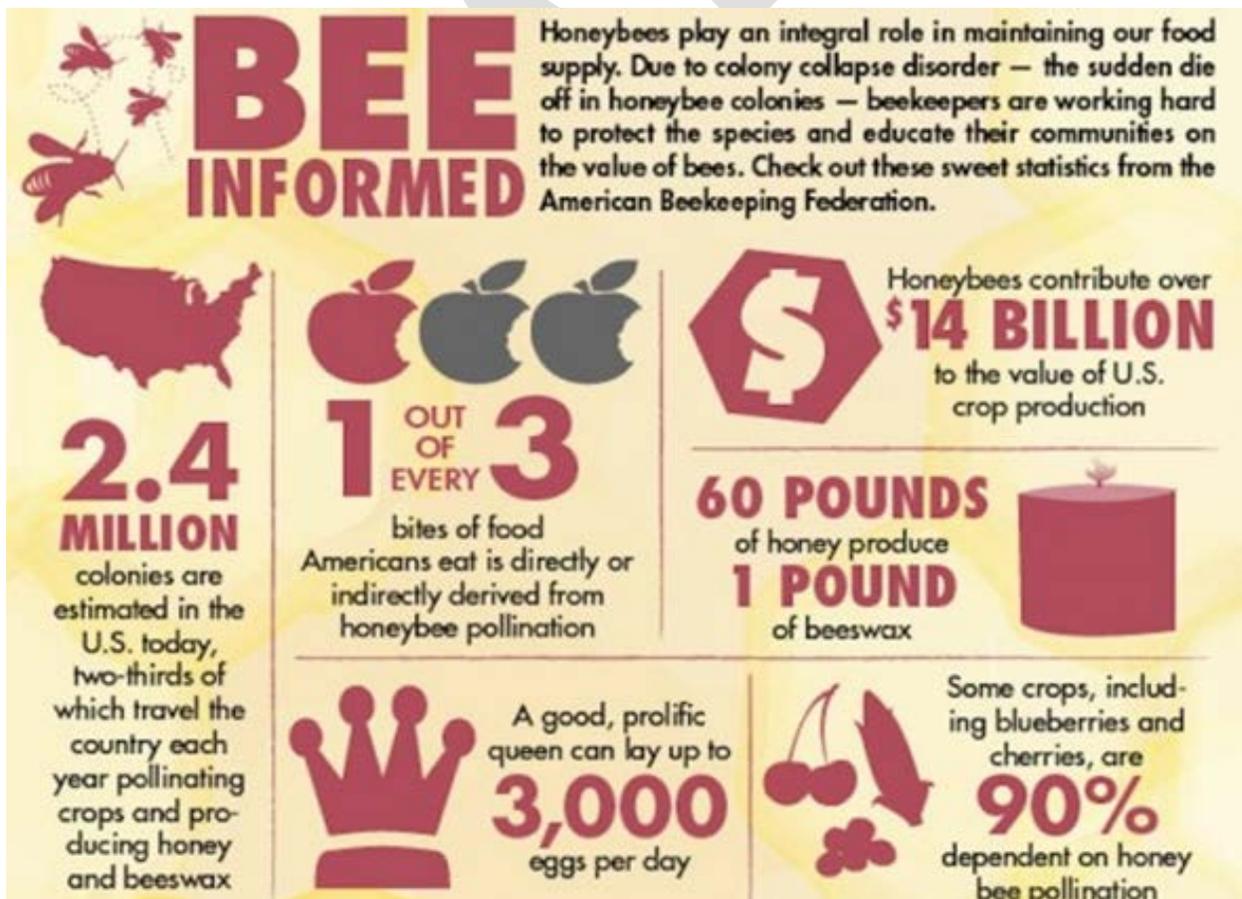
As of November 2014, city residents can now keep chickens on their properties. Up to six chickens per property are allowed in areas not zoned for agriculture. Owners must now pay \$15 per year for a permit.



Bees and other pollinators provide sources of food. A few examples of the foods that would no longer be available to us if bees ceased pollinating our agricultural goods are: broccoli, asparagus, cantaloupes, cucumbers, pumpkins, blueberries, watermelons, almonds, apples, cranberries, and cherries.⁴⁵ Honey is a food product created by bees. Honey bees account for 80% of all insect pollination.⁴⁶ By keeping flowers pollinated, bees perpetuate floral growth and provide attractive habitats for other animals such as insects and birds.⁴⁷

Goats can provide milk, cheese and meat to their owners while keeping the weeds and annoying over-growth problems at bay. Goats are popular amongst urban farmers because they're a manageable size and relatively inexpensive to feed. A seasonal supply of milk—a doe lactates for up to 10 months after giving birth—cheese, and other dairy products are the obvious benefits provided by goats. But they also offer companionship; they're highly intelligent and dog-like in their ability to bond with humans. Other incentives for keeping goats include fiber (from long-haired breeds like the Angora), brush control, and fertilizer (their manure is dry, fairly odorless, and nitrogen-rich).⁴⁸ Goats can also be used for their meat.

Sheep are docile, gentle animals and they are multipurpose, providing meat and wool, and even milk. Sheep have some advantages over other types of livestock: they're relatively small and easy to handle, compared with cows and pigs. They don't need perfect pasture, and they eat brush, grasses and weeds that grow in poor soil. Sheep manure will also fertilize the soil. They are gentle, docile and they are trainable, while not needing a lot of space.⁴⁹



From *Inhabitat.com*, an infographic detailing the essential role that bees and pollinators play in our food system. Urban beekeeping is on the rise nationwide.



Food Waste

The Natural Resources Defense Council reports that,

“Feeding the U.S. population requires an enormous amount of land and resources. Yet, 40 percent of food in the U.S. goes to waste. When the resources to grow that food are considered, this amounts to **approximately 25 percent of all freshwater, 4 percent of the oil we consume, and more than \$165 billion dollars all dedicated to producing food that never gets eaten.** Reducing your own food waste is an easy way to trim down your bills and your environmental footprint.”

Furthermore, as the USDA details,

“ ‘Food loss’ represents the amount of edible food, postharvest, that is available for human consumption but is not consumed for any reason; it includes cooking loss and natural shrinkage (e.g., moisture loss); loss from mold, pests, or inadequate climate control; and plate waste. “Food waste” is a component of food loss and occurs when an edible item goes unconsumed, such as food discarded by retailers due to undesirable color or blemishes and plate waste discarded by consumers. Food loss (particularly the food waste component) is becoming an increasingly important topic both domestically and internationally.

In the United States, 31 percent—or 133 billion pounds—of the 430 billion pounds of the available food supply at the retail and consumer levels in 2010 went uneaten. Retail-level losses represented 10 percent (43 billion pounds) and consumer-level losses 21 percent (90 billion pounds) of the available food supply. (Losses on the farm and between the farm and retailer were not estimated due to data limitations for some of the food groups.)

The estimated total value of food loss at the retail and consumer levels in the United States was \$161.6 billion in 2010. The top three food groups in terms of share of total value of food loss were meat, poultry, and fish (30 percent, \$48 billion); vegetables (19 percent, \$30 billion); and dairy products (17 percent, \$27 billion). The total amount of food loss represents 387 billion calories of food not available for human consumption per day in 2010, or 1,249 out of 3,796 calories available per American per day. Recovery costs, food safety considerations, and other factors would reduce the amount of food that could actually be recovered for human consumption.”

Compost is the result of the natural breakdown of organic materials by bacteria, fungi and insects. Compost improves the textures of any type of soil; sandy, clay loose or hard. Soils can both hold more water and drain more efficiently when compost is added. It is composed of organic material ranging from leaves and wood chips to household refuse. When broken down, these materials become one of nature's best garden fertilizers and richest mediums for potted plants. Compost adds organic matter to the soil and helps to maintain healthy, productive growing conditions.⁵⁰ It is made up of waste material that is generally high in either carbon or nitrogen. While frequently referred to as yard and kitchen waste, it could be argued in fact it is not waste at all but a valuable resource for composting/recycling.

In 2009, an estimated 30% of compostable organics ended up in the nation's landfills.⁵¹ This green waste should instead be converted into high-quality compost that can safely be used to restore and maintain healthy farmland, vegetable gardens, parks, playgrounds, and urban landscapes. Composting organic matter to make them safe for use on agricultural lands and gardens is economically sound, and a way to cut down on the volume of waste materials at the landfills or incinerators. Keeping organic matter out of the solid waste stream holds down the cost for the community in disposal cost.

Gleaning is simply the act of collecting excess fresh foods from farms, gardens, farmers markets, grocers, restaurants, state/county fairs, or any other sources in order to provide it to those in need.⁵² Each year, well over 100 billion pounds of food are thrown away in this country and estimates from 2009 indicate that up to 20 percent of America's entire food supply goes to waste.⁵³ At the same time there are 49 million people, including more than 16 million children, who are at risk of going hungry.⁵⁴

Roadrunner Food Bank and Casa de Peregrinos welcome gleaning volunteers and donations. These programs make the best use of our agriculture and what's left in the fields to feed those in need healthy, local food.



2.3 The Benefits of Urban Agriculture

Urban agriculture and local food system activities can produce far-reaching, diverse positive impacts throughout the many facets of a community. From strengthening social cohesion and increasing economic prosperity to improving both human and environmental health, a robust local food system is an asset to any community.

As outlined in, "Urban Agriculture Impacts: Social, Health, and Economic: A Literature Review⁵⁵," the benefits to urban agriculture can include:



Social Benefits

- Gardens and farms beautify neighborhoods and are often points of pride for local residents; such places are less likely to be vandalized than unutilized urban space
- Successfully growing food increases self-reliance and self-esteem among community members
- Maintaining shared spaces helps to bring people together and
- Urban agriculture programs provide opportunities and venues to educate the community, adults and children alike, about food, nutrition, sustainability, and the environment, among other things.
- Growing and selling food brings together community members across generations, creating opportunities for anyone from senior citizens to young children, as well as across cultures.

Economic Benefits

- Urban agriculture projects can create local jobs, which is especially significant since such projects often take place in areas with high levels of unemployment.
- Farmers markets, which can attract patrons across a wide area, provide reliable markets and opportunities to expand and increase sales for small farmers.
- The presence of a community garden or urban farm has been shown to increase nearby home and property values.
- Municipal governments can save money by placing urban farms or gardens on otherwise vacant land, decreasing upkeep costs that may result from vandalism or illegal dumping.
- Local residents save on produce/healthy food options, which are sometimes not otherwise accessible in areas with limited or nonexistent access to healthy and affordable foods (food deserts).





Health Benefits

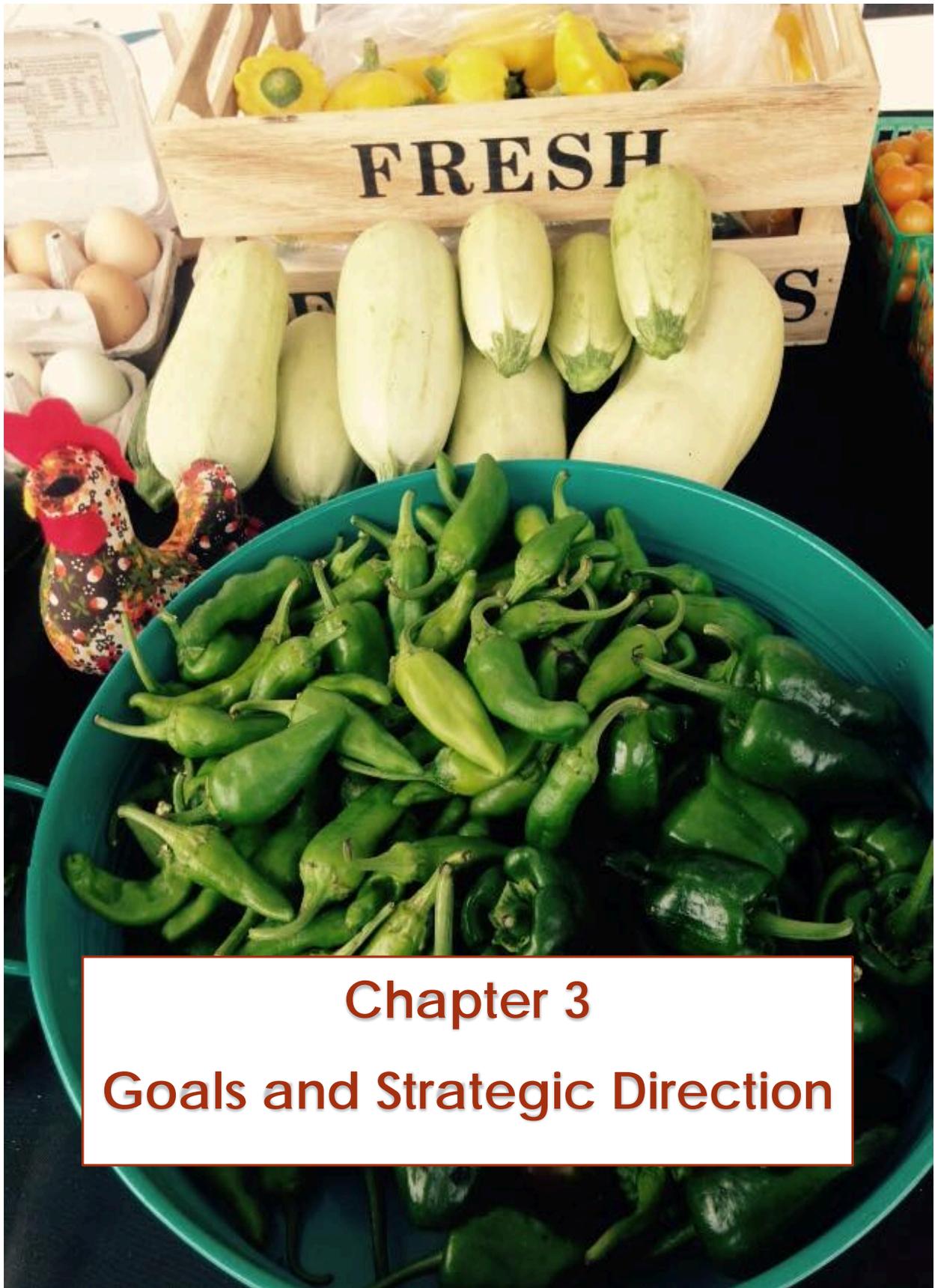
- A literature review of urban agriculture studies showed that, “people who participate or have family members that participate in community gardens ‘[are] 3.5 times more likely to consume fruits and vegetables at least 5 times per day than people without a gardening household member.’”
- Hands-on involvement in the growing process and education on how to cook with produce helps to improve a community’s nutrition awareness and understanding of healthy eating practices.
- Food security and access in food-insecure areas improves when community gardens and farmers markets are available.

Environmental Benefits

- Green space helps to mitigate the “heat island” effect, wherein urban spaces tend to be hotter than the surrounding rural areas, because gardens and farms help to reduce the amount of heat absorbed by paved surfaces.
- Garden and farm space can reduce the environmental impacts from excess stormwater runoff, which can introduce and concentrate pollutants in rivers, lakes, and other water bodies. Stormwater runoff also leads to erosion of arroyo banks and flooding. When there is vegetation present to absorb the water, it reduces the pollutants available to flow into water bodies and helps to anchor soils.
- Rain barrels are an oft-used urban agriculture device that catches and stores rain water, which can then be used to water lawns and gardens. They help to conserve water and to reduce costs both personal and community gardens.



Here in Doña Ana County, where farm land is the most expensive in the state, urban agriculture activities have been found to be a critical tool for fostering public buy-in and political awareness to advocate for keeping land available to and affordable for farmers. This makes it feasible for young and beginning farmers, who can have a hard time entering the industry here, to make a start. Farmers markets and, even more, CSA’s connect eaters to producers, fostering civic agriculture that turns consumers into stakeholders who value having near-by land in agriculture production.



Chapter 3
Goals and Strategic Direction

3.1 Vision and Goals

Las Cruces has great diversity within its boundaries – unique cultures, distinct neighborhoods, and historic places. The vision, goals, and recommendations set forth recognize this and work within this context.

An Urban Agriculture and Food Vision for Las Cruces:

Las Cruces has a resilient food system that fosters healthy communities & residents and contributes to the overall economic, social, cultural, and environmental vitality of the city.

Goals

Urban agriculture and the food system in Las Cruces will contribute to:

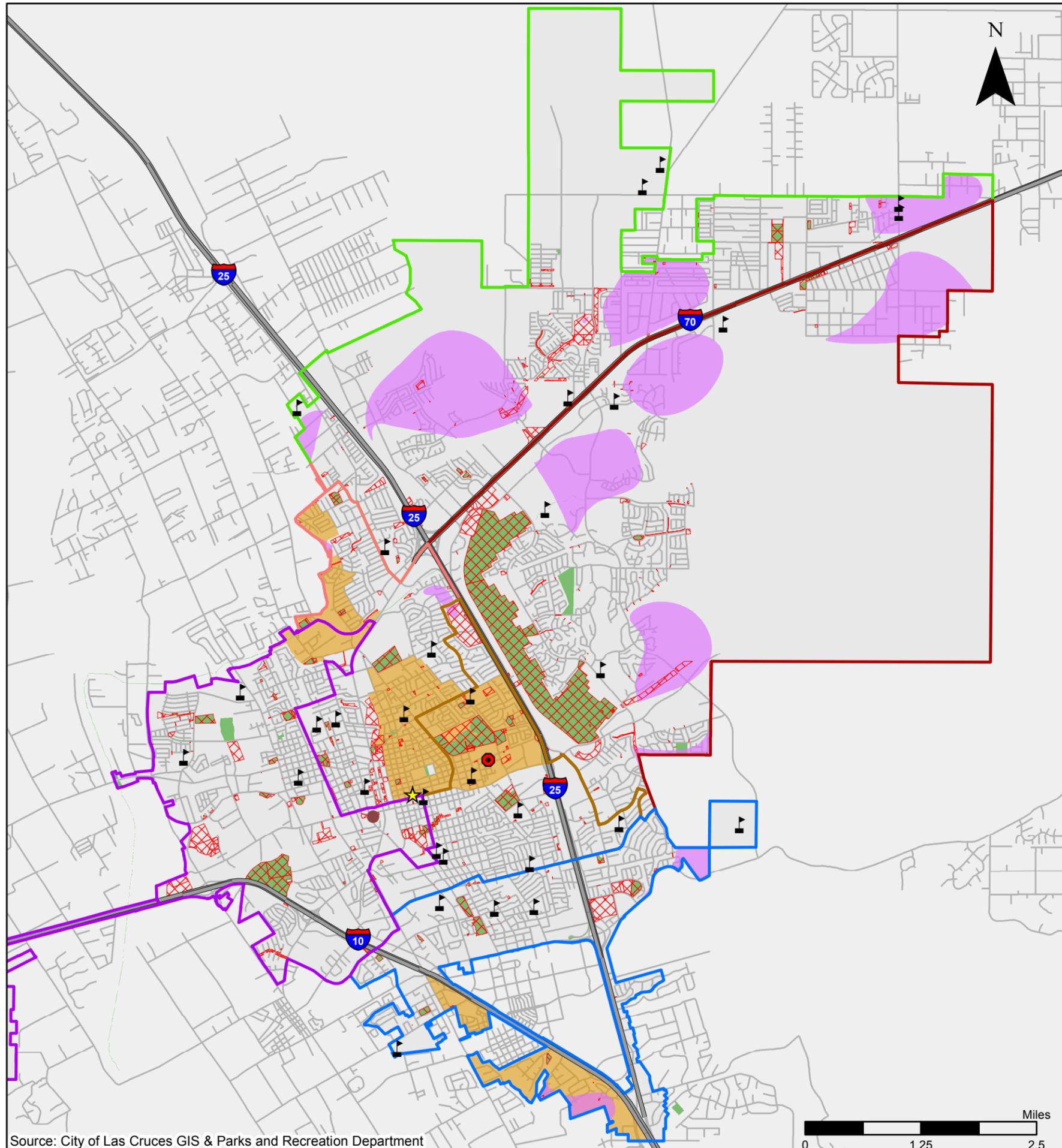
- **A healthy & food-secure community:** All residents should have enough to eat and access to affordable, local, healthy, sustainable, and culturally appropriate food.
- **A stronger, more vibrant local economy with more food growing and processing opportunities:** Businesses and entrepreneurs that produce, process, distribute, and sell local and healthy food are a key component of a vibrant local economy.
- **Healthier ecosystems and smart environmental resources stewardship:** Food-related waste should be prevented, reused, or recycled, and natural resources should be used wisely.

Strategic Direction: Realizing the Vision and Goals of the Las Cruces Urban Agriculture and Food System Plan

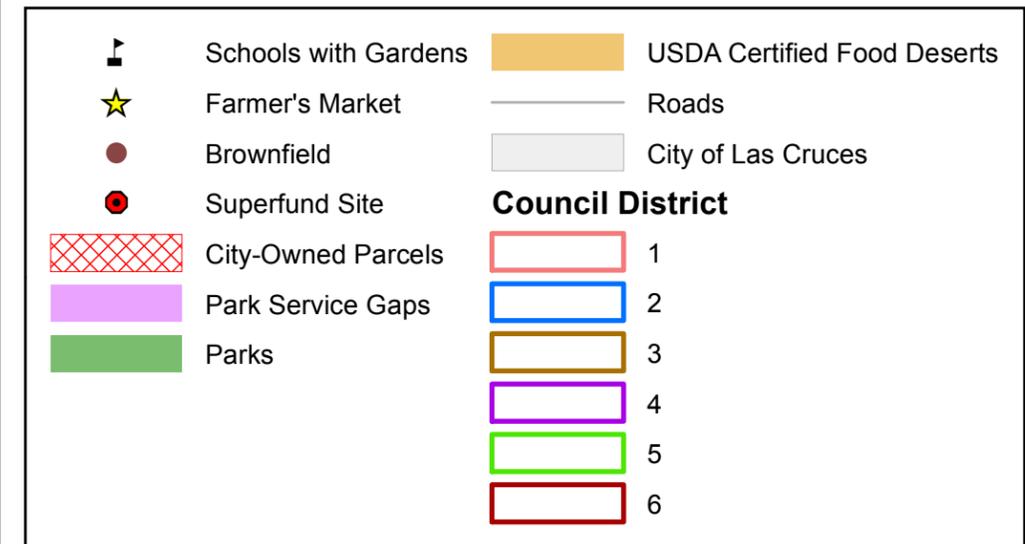
To realize the vision and goals of this plan, recommendations have been made based on thorough research and input from community members in the city. Each recommendation indicates whether it is a policy, a program, or education-based; many are more than one of these. Additionally, key City departments have been identified for each recommendation.

Las Cruces Urban Agriculture Opportunity Areas

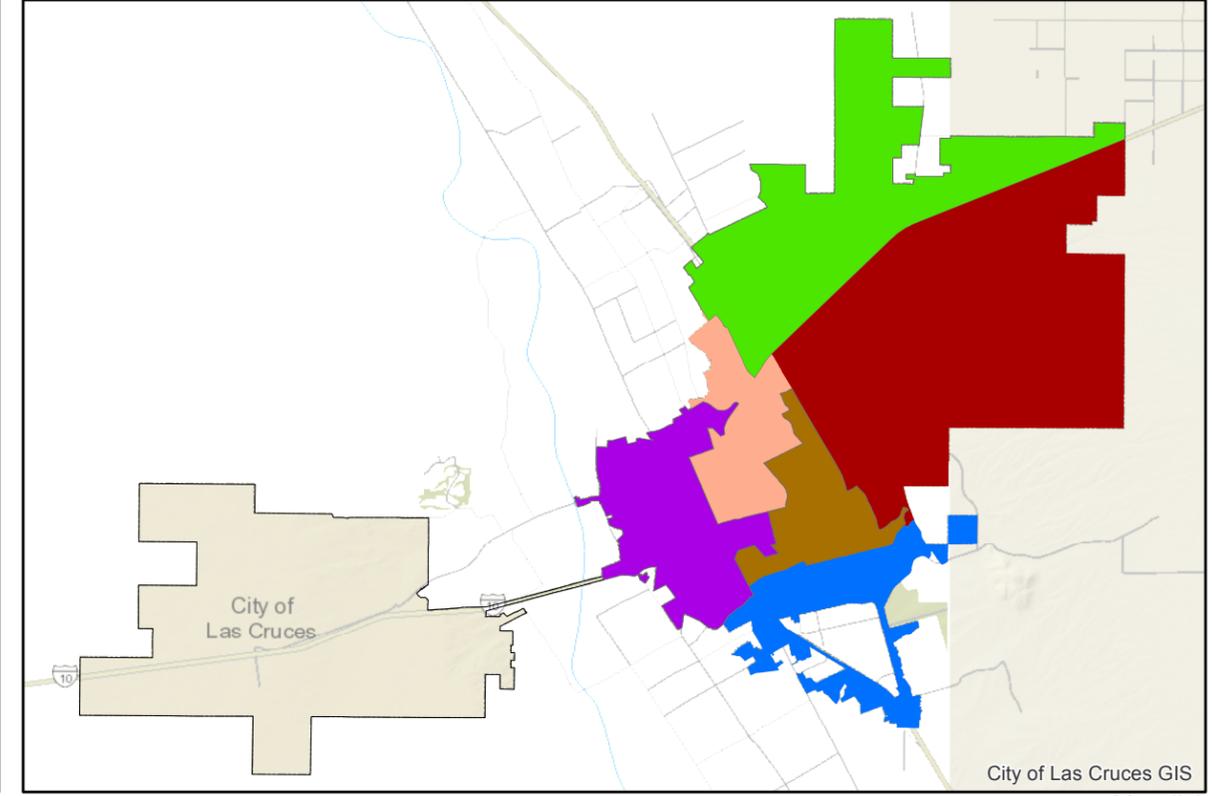
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Source: City of Las Cruces GIS & Parks and Recreation Department



Disclaimer: The map highlights areas of opportunity for illustrative purposes only, it does not guarantee any action.



City of Las Cruces GIS

3.2 Objectives and Recommendations

Goal: A healthy & food-secure community

All residents should have enough to eat and access to affordable, local, healthy, sustainable, and culturally appropriate food.

<i>Objectives and Recommendations</i>		Policy	Program	Education	Community, Cultural Serv.	Community Development	Parks and Recreation	Publics Works	Utilities	City Admin.
1	Establish healthy food access points that can be reached by safe walking, biking, or transit by all residents									
a	Develop standards and guidelines for farm stands in all zoning districts to encourage home gardening and other urban agriculture activities, with restrictions on hours/days of the week to minimize noise/traffic, if needed	✓				●				
2	Use the City's purchasing and contracting power to support healthy, local, sustainably produced food.									
a	Establish a Senior Meal pilot to increase the purchase of locally grown produce.		✓		●					
b	Establish an Employee Community Supported Agriculture (CSA) Program as part of the City's wellness program.		✓				●			
3	Support programs, policies, and projects that help get more healthy food to children and youth									
a	Establish Healthy Food Zones around schools within the City to encourage healthy food trucks that meet competitive school foods rules.	✓				●				
4	Increase affordability of healthy, local food for low-income residents.									
a	Encourage SNAP redemption at farmers markets and farm stands by seeking funds to subsidize the cost of EBT machines and by supporting and/or lobbying for Double Up Bucks program funds.	✓	✓		●					
b	Develop standards/guidelines for mobile produce markets to encourage their presence in all districts. This could include type of food sold, considerations for human and gas powered vendors, hours and days allowed in various districts, waiving of fees if operating in underserved areas, etc. (See 3b)	✓				●				
c	Establish development incentives for new development and neighborhood master plans that incorporate community gardens.	✓	✓			●	●			

Objectives and Recommendations		Policy	Program	Education	Community, Cultural Serv.	Community Development	Parks and Recreation	Publics Works	Utilities	City Admin.
5	Promote healthy food, especially in low-income communities and with youth, through education and collaborative efforts.									
a	Promote benefits of local urban agriculture and food systems on utility bill mailers, city website, billboards, and other marketing outlets.			✓	●	●	●	●	●	
b	Encourage neighborhood associations to allow food gardening on residential lots.			✓		●				
c	Continue to ensure that the City's zoning code does not restrict front or backyard produce gardening activities.	✓				●				
6	Continue to establish community gardens and promote home gardening.									
a	Educate communities about the importance of community gardens through outreach activities and workshops.			✓	●	●	●	●	●	
b	Hold regular workshops at existing community gardens on gardening, and cooking, and food literacy.			✓			●		●	
c	Ensure existing community garden regulations remain clear and the process to participate is simple and straightforward.	✓					●			
d	Partner with Master Gardeners, NMSU CES, local schools, etc.to develop and provide a comprehensive and easy-to-understand home gardening curriculum for residents (topics may include kitchen composting, soil improvement, irrigation system design and management, plant and seed selection, etc.)			✓	●		●			
e	Waive fees for low-income residents associated with the raising of livestock for food, including chickens, rabbits, goats, and bees.	✓				●				

Goal: A stronger, more vibrant local economy with more food growing and processing opportunities

Businesses that produce, process, distribute, and sell local and healthy food are a key component of a vibrant local economy.

<i>Objectives and Recommendations</i>		Policy	Program	Education	Community, Cultural Serv.	Community Development	Parks and Recreation	Publics Works	Utilities	City Admin.
7	Support efforts to expand urban food production on privately owned land, including residential, commercial and institutional properties.									
a	Ensure City zoning code includes “urban farms”* as an allowed use in all applicable zones. (see Appendix 1, Glossary)	✓				●				
b	Pursue and support state legislation giving tax incentives to municipal area lot owners that put their property into cultivation.	✓								●
c	Facilitate soil testing on cultivated private and city-owned land through partnerships with NMSU and CES.		✓				●			
d	Provide incentives for promoting food production in planned unit developments. (Such as allowing higher density development in exchange for urban agriculture features.)	✓				●	●			
e	Implement financial incentives for new water meters/lower water use for urban farming activities through grants and other programs.	✓	✓						●	
f	Explore opportunities to expand rooftop and building-supported agriculture.			✓		●				
g	Work jointly with other jurisdictions to conserve agricultural land.		✓			●				

Objectives and Recommendations		Policy	Program	Education	Community, Cultural Serv.	Community Development	Parks and Recreation	Publics Works	Utilities	City Admin.
8	Create opportunities and spaces for entrepreneurial ventures and businesses that grow, distribute, process, and sell local, healthy food.									
a	Establish a Healthy Food Financing Initiative with municipal funds, as well as state appropriations and grants.	✓	✓			●				●
b	Support programs and organizations that provide on-the-job training in urban agriculture and local food system work, including urban farming, value-added food processing, and local food retail.		✓			●				●
c	Support farmers markets that sell healthy and locally produced food in underserved areas by waiving associated fees and/or through an expedited permitting process.		✓			●				
d	Create a how-to guide for starting a farmers market/farm stand, including regulations and potential costs.			✓		●				●
9	Integrate urban agricultural activities into local economic development plans and processes as a means to diversify the economy and attract more young people to stay or return to the area.									
a	Establish an urban farm incubator and education center through public/private partnerships. (Other potential p/p projects include: community commercial kitchen, community garden or urban farm, seed bank, and food hub with an aggregation and distribution component)		✓		●		●			
10	Celebrate local food as integral to Las Cruces' economy and agricultural heritage.									
a	Partner with local organizations to create an annual community event that celebrates local food and urban agriculture, and supports local businesses in the food and agricultural sector.		✓				●			
b	Integrate food system and urban agriculture topics into educational programming at City venues.			✓	●		●		●	
c	Continue to support the Mesilla Valley Food Policy Council and its mission through staff participation, meeting space, and funding.	✓				●		●		

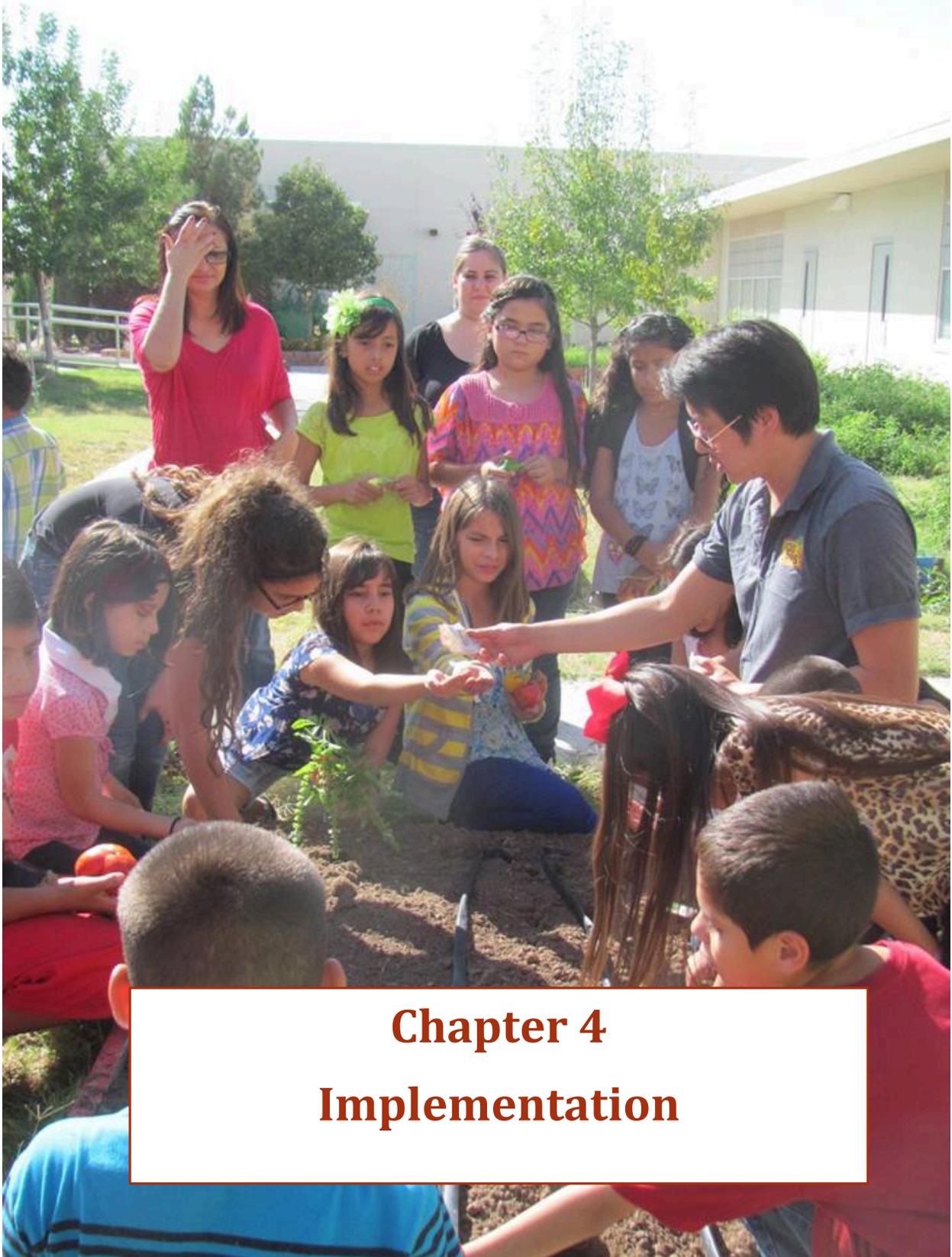
Goal: Healthier ecosystems and smart environmental resources stewardship

Food-related waste should be prevented, reused, or recycled, and natural resources should be used wisely.

	<i>Objectives and Recommendations</i>	Policy	Program	Education	Community Cultural Serv.	Community Development	Parks and Recreation	Publics Works	Utilities	City Admin.
11	Prevent edible food from entering the waste system.									
a	Investigate a city-wide food composting program and create an action plan, including funding streams, to institute. (public/private?)		✓						●	
b	Create incentives for businesses to compost food waste.			✓					●	
c	Encourage gleaning at urban farms and community gardens to benefit local emergency food centers.	✓					●			
d	Host a city-wide day of donations and gleaning of produce.		✓	✓			●			
12	Eliminate water and energy waste.									
a	Encourage/incentivize responsible water usage and irrigation practices		✓	✓			●		●	
b	Integrate urban agriculture into stormwater management strategies. Examples include utilizing stormwater retention areas for orchards; encouraging owners/developers of land neighboring on urban agricultural land to cooperate with agricultural producers by directing stormwater runoff appropriately.	✓	✓					●		
c	Install rainwater harvesting equipment on City properties to meet retention requirements, drainage and flood control requirements, plus harvest rainwater for beneficial use (supplemental irrigation water for landscape planting, recharge aquifer, dust control, erosion control) at all City parks, facilities and roadways.		✓					●		
d	Encourage incorporation of greywater infrastructure in new City facilities as they are constructed.	✓						●		
e	Expand Lush N Lean workshops to specifically address responsible water usage and irrigation practices in food production at existing and new community gardens.			✓					●	
f	Integrate rainwater harvesting principles into design standards and development codes (curb cutouts, etc.) and in Landscape Development Standards.	✓				●		●		

<i>Objectives and Recommendations</i>		Policy	Program	Education	Community, Cultural Serv.	Community Development	Parks and Recreation	Publics Works	Utilities	City Admin.
13	Encourage the use of alternative pest control practices.									
a	Establish that City landscaping will employ minimal pesticide and herbicide use and begin implementation of other methods of pest and weed such as Integrated Pest Management when performing pest and weed management tasks at all City-managed landscapes and facilities.	✓	✓				●			
b	Encourage organic practices through educational outreach on the effects of pesticides and chemical fertilizers on health, water, and pollinators.			✓			●		●	

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Chapter 4

Implementation

Engaging Stakeholders & Potential Partners and Enacting this Plan

Engaging stakeholders and potential partners is of the utmost importance to the success of this Plan; without engaged stakeholders, actions will be less effective and much more time consuming. Current stakeholders and partners should continue to be engaged. It may also be necessary to engage new stakeholders and form new partnerships moving forward.

The MVFPC, City staff, and identified stakeholders will work together to prioritize the various recommendations in Section 3.2, Objectives and Recommendations. The prioritization will be based on the following:

- Short, mid, or long-range timeline
- Identification and number of stakeholders and key players that need to be involved
- Type of action that will need to be taken (ordinance, resolution, etc.) and the accompanying estimated timeline
- Amount of City staff time needed to accomplish the action
- Funding needed, if any, including source and steps & partners needed to secure

Based on prioritization of the recommendations, MVFPC members and City staff can begin implementing this plan. Prioritization of recommendations and of actions items shall be reported to City Council on a regular basis as part of the City's strategic planning process.

Evaluation: Is it Working?

One of the most important questions in policy and planning work is simple: is this policy and/or plan working in the intended way? The answers, however, are not quite as straightforward and simple as the question itself.

The Five Borough Farm, a project based in New York City to evaluate the effects and benefits of urban agriculture activities, has created a methodology and set of user-friendly tools for farmers, gardeners, and other food entrepreneurs to track and evaluate effects of UA activities. These metrics are able to be adapted and site specific and have great potential to be an effective evaluation tool for UA and food policy in Las Cruces.

It is recommended that city staff and partners work to modify the existing metrics framework as necessary to fully evaluate the effect and benefits that might be realized from this plan and urban agriculture in Las Cruces.

About the Metrics Framework (from Five Borough Farms):

The first step in developing the metrics framework was to understand the kinds of benefits that farmers, gardeners, and other key stakeholders intuitively link to urban agriculture. Based on extensive interviews, site visits, and a comprehensive survey of peer-reviewed literature, Five Borough Farm defines nineteen outcomes toward which urban agricultural activities...can contribute. The potential outcomes were grouped into four main categories—health, social, economic, and ecological.

Within this framework, activities may contribute to multiple potential benefits. To demonstrate those kinds of benefits, data must be collected about specific activities that take place at ... farms

and gardens. The recommended indicators are designed to make the process of data collection and analysis accessible to anyone in the urban agriculture community, allowing even farmers and gardeners with limited resources to report on their activity, thus making it easier to aggregate information on urban agriculture's impacts citywide.

Indicator Guide

Indicators are signs of progress and change that result from an activity, project, or program. The indicator guide below— the first tool of its kind in the country— enables users to track activities across multiple farms and gardens to measure the health, social, economic, and ecological benefits of urban agriculture. The guide identifies important goals of urban agricultural activity (e.g. improve access to healthy food, increase physical activity, etc.) and recommends indicators (sales at farmers markets, number of person-hours spent working on the farm or garden) that farmers and gardeners can track to measure their impacts in reaching those goals.

Health	Social	Economic	Ecological
Improve Access to healthy food for underserved communities	Social capital/ connection	Local and regional economic stimulation	Awareness of food systems ecology
Improve food-health literacy/ skills/aspirations for underserved communities	Youth development	Job growth	Stewardship
Increasing healthy eating	Food access	Job readiness	Conservation
Increasing physical activity	Age integrated spaces	Affordable healthy food	Stormwater management
			Soil improvement
			Reducing food waste
			Habitat improvement/ biodiversity/ ecological connectivity

*See Appendix 3 for full metrics and data collection tools.

What success will look like

Many of the recommendations laid out in this plan are measurable and it is recommended that City Council delegate to the MVFPC and city staff the role of prioritizing actions, engaging stakeholders, and to report progress on identified actions to the council on an annual basis. During the Urban Ag Kickoff and Visioning Event, one of the visioning exercises included asking participants what a successful UA initiative would look like in Las Cruces; success will look like the stories told and ideas that sprouted during this initiative. If rainwater harvesting and greywater use increases, if all families have access to fresh healthy foods, we'll know our strategy is working. If new food businesses pop up, if community gardens increase, if our neighborhoods become safer, greener, and more vibrant, we will have success. If we see our vision begin to materialize, we will begin realizing success.

Vision:

Las Cruces has a resilient food system that fosters healthy communities & residents and contributes to the overall economic, social, cultural, and environmental vitality of the city.





Appendices

**Appendix 1:
Glossary**

Agriculture	The cultivation of animals, plants, fungi, and other life forms for food, fiber, biofuel and other products.
Agri-Tourism	Involves any agriculturally-based operation or activity that brings visitors to a farm or ranch, including buying produce direct from a farm stand, navigating a corn maze, picking fruit, feeding animals or staying at a bed and breakfast on a farm.
Alternative energy sources	Using waste heat or the digestion of organic matter to generate power and heat. Examples include using waste heat for greenhouses and generating power from processing agricultural residues.
Buffer	A strip of land or a fence between one use and another, which may or may not have trees and shrubs planted for screening purposes. A buffer is designed to set apart one use type from another. An appropriate buffer may vary depending on uses, district, size, etc.
Commercial Agriculture	Agriculture that is for commercial purposes. Commercial agriculture encompasses large to small scale farming operations.
Commercial Kitchen	A type of food processing facility that has been certified by health and safety agencies and contains a range of standard and specialized equipment designed for large volumes.
Community Gardening	The practice of growing and raising food, either as a group or as an individual, in a shared garden space. Community gardens are often located on public lands or undeveloped private land and are the result of a group of people coming together to make land available for gardening. Community gardens often contain raised bed allotment plots, tool sheds, water access, public art and educational signage, among other features.
Community Kitchens	A kitchen used for communal cooking and sharing of meals in a social atmosphere. Community kitchens can be health and safety certified and can provide space for food preservation and preparation classes and activities. Community kitchens are often provided as part of a community center or other social amenity.
Community Supported Agriculture (CSA)	A farming and food distribution model that consists of community members supporting a farm operation with a set fee at the beginning of the growing season, so that growers and consumers provide mutual support and share the risks and benefits of local food production. Members of CSAs then receive proportional shares in the annual output of the participating farm or farms. It usually involves weekly to monthly delivery of vegetables and fruit, and sometimes dairy products and meat.
Demonstration Kitchens and Gardens	Kitchens and gardens that provide teaching and learning opportunities through demonstration (e.g. container gardening, cooking demonstrations) and are often integrated with other activities and spaces (e.g. within community gardens or centers).
Farmers markets	Public markets that contain a wide variety of vendors and products including local farm produce, honey, meat, cheese and eggs as well as other made and baked food goods. Farmers markets often operate in parks, streets and permanent facilities and are managed by different types of organizations and entities.
Food Access	All people at all times have both physical and economic access to a healthy diet.
Food Asset Mapping	The practice of physically mapping the location of a range of food assets such as community gardens, local food restaurants, food trucks, food sharing centers, community kitchens, farmers markets and festivals etc. Analysis on a range of topics can be undertaken based on this baseline information.
Food Desert	An urban or rural area or neighborhood that has no, or grossly insufficient, access to healthy, affordable and culturally-appropriate foods for local residents.
Food Forest	A low-maintenance sustainable plant-based food production and agroforestry system based on woodland ecosystems, incorporating fruit and nut trees, shrubs, herbs, vines and perennial vegetables which have yields directly useful to humans. Making use of companion planting, these can be intermixed to grow in a succession of layers, to replicate a woodland habitat.

Food Hubs	A food hub is a place (usually a building or cluster of buildings) that bring together a wide spectrum food and agriculture related activities with the overall purpose increasing access, capacity, visibility, and the experience of sustainable urban and regional food systems within a city. Food hubs can operate as purely commercial, public or hybrid entities.
Food Miles	The distance an agricultural product is transported from point of production to point of consumption.
Food Policy	Any governance decision, plan or regulation that affects the way that food is produced, allocated, obtained, consumed or disposed.
Food Processing	The transformation of food from its raw state into something that can be stored or eaten. It ranges from basic processing like grading and bagging fresh foods to developing highly refined and packaged foods.
Food Procurement	The process through which large institutions (e.g. schools, hospitals, and universities) purchase food that is served to a wide range of customers. Food procurement practices are often set-out in policy and contractual agreements with suppliers.
Food Production	Farming and gardening practices that produce raw food products – fruits, vegetables, grain, legumes, meat, eggs, dairy products and fish.
Food Recovery Programs	Programs, often led by community organizations, to redirect good and healthy food products considered surplus or not marketable by food industry standards to food programs who redistribute it to individuals and households in need. Food recovery programs are also known as gleaning programs.
Food Safety	Adherence to rules to ensure that food is handled, prepared, and stored in ways that prevent contamination of food by bacteria, viruses and parasites.
Food Sector	The range of food-related businesses including farms, ranches, fishing operations, food product manufacturing, farm and food product wholesaling and distribution, food and beverage stores, and food and beverage services.
Food Security	Physical and economic access by all people at all times to meet their dietary needs and food preferences for an active, healthy life. Food security includes at a minimum the ready availability of nutritionally adequate and safe foods; and an assured ability to acquire foods in socially acceptable ways (e.g. without resorting to emergency food supplies, scavenging, stealing, or other coping strategies).
Food System	The sequence of activities linking farming/growing, processing, transporting, distributing, celebrating, and recovering food waste in the context of larger natural, social, political, and economic driving forces. Food systems exist on multiple scales: local, regional, national and global. Food systems are defined by the geographic, political, economic, environmental, and social contexts they exist in.
Food trucks	Mobile kitchens serving a wide-range of breakfast, lunch, dinner and snack foods. Food trucks often have temporary licenses to operate in high-pedestrian traffic areas. In many cities, food trucks have become an important business incubator and enhance the food experience.
Gleaning	The practice of harvesting food that otherwise might go to waste and channeling it to humanitarian agencies and/or businesses.
Incubator Farm	A farm that is managed in a way to provide resources for mentorship and incubation of new farm businesses.
Liveability	The sum of the factors that add up to a community's quality of life, including the built and natural environment, economic prosperity, social stability and equity, educational opportunity, and cultural, entertainment and recreation possibilities.

Local Food Economy	The economic repercussions of food produced or processed within a particular geographic boundary. On the production side, it consists of all businesses involved in producing, harvesting, distribution and retailing of food products. On the consumption side, it includes households, restaurants, grocery stores and institutions (such as hospitals) which provide and or sell food to people as part of their operations.
Local Food Infrastructure	The facilities such as processing plants, warehouses, permanent farmers markets, green grocers and community kitchens among others that enables the local food economy to function.
Local Multiplier Effect	The concept that the initial spending or investment in a product or service will lead to more consumption that generates more spending. Often associated with the idea of spin-off industries.
Market gardens	The practice of growing a range of fresh produce, herbs and other foods for selling to restaurants and other food markets.
Mobile markets	Non-permanent, mobile markets provide fresh produce and other foods in convenient locations such as transit stations and business districts.
Peri-Urban	Refers to areas that are immediately adjoining an urban area, between the suburbs and rural areas.
Peri-Urban Agriculture	The practice of farming in areas on the urban edge predominantly tailored for serving urban markets. These areas are iteratively shaped by how cities grow and expand into surrounding areas.
Public Realm	All exterior places, linkages and elements of the built form that are physically and/or visually accessible to the public, such as streets, building facades and open spaces
Resilience	The ability of a system to absorb disturbance or undergo change in response to external forces while retaining its basic structure and function.
Supply Chain	The activities that transform natural resources and raw materials into a finished product that is delivered to the final consumer. In a conventional supply chain, competition along the supply chain acts to maximize the financial return.
Urban Agriculture (UA)	Urban agriculture is the practice of cultivating, processing, and distributing food in and around towns and cities. It involves applying intensive production methods and (re)using natural resources and urban wastes to yield a diversity of crops and livestock. Urban agriculture could be undertaken in backyard gardens, rooftop gardens, community gardens and urban farms.
Urban Farm	Land on which private individuals or enterprises apply intensive production methods to crops and/or livestock in and around towns and cities. Urban farms are located on land that would typically be used for non-agricultural purposes, but is instead devoted to the cultivation, processing, and possibly the distribution of food.
Value-added processing	A process through which raw goods are refined into a range of products that are then distributed to a range of restaurants and food retailers.
Vertical growing	Growing food in stacked trays, on green walls or through other systems to increase growing efficiency in small spaces. Hydroponics is often used in vertical growing systems.
Zoning	Zoning is a method by which municipalities regulate the use of land and built forms that may occupy that land.

Appendix 2:
Alignment with City of Las Cruces Plans

Goals:

A healthy & food secure community

All residents should have enough to eat and access to affordable, local, healthy, sustainable, and culturally appropriate food.

Comprehensive Plan 2040	Strategic Plan	Sustainability Plan
<p>Theme: Healthy Community Goal 1: Encourage mixed-use development Policies: 1.1 Encourage development using the mixed use concept of [the] Comprehensive Plan, such as developing compatible non-residential uses within walking distance of existing residential areas. Goal 3: Support the viability of agriculture and the co-existence of agriculture with other land uses. 3.4 Encourage less conventional agricultural practices throughout the city such as urban farming and community gardens. 3.5 Encourage agricultural and ranching activities in the Rural Planning Areas of the Future Concept Map and fringe areas of the city. Theme: Economic Prosperity Policies: 27.3 Support the activities of the Farmers and Crafts Market in cooperation with the Farmers & Crafts Market of Las Cruces, Inc. or its designee.</p>	<p>5. Provide services and programs that are an asset to the City at large. 19. Reduce crime and threat of crime in our community.</p>	

A stronger, more vibrant local economy with more food growing and processing opportunities.

Businesses and entrepreneurs that produce, process, distribute, and sell local and healthy food are a key component of a vibrant local economy.

Comprehensive Plan 2040	Strategic Plan	Sustainability Plan
<p>Theme: Healthy Community Goal 3: Support the viability of agriculture and the co-existence of agriculture with other land uses. Policies: 3.1 Explore options to finance a local food hub processing, aggregation, and distribution center to facilitate local sourcing. 3.2 Encourage the preservation of agricultural pockets and create standards that support urban agriculture in the developed area of the city that contributes to the city's unique urban/rural character. 3.3 Discourage encroachment of small lot development into large, unbroken agricultural areas located near or along the city limits between urbanized and rural areas. 3.6 Encourage small agricultural parcels within the urbanized area of the city as a means to provide open space, buffers between incompatible uses, community gardens, and/or options to offer locally-grown products directly from the source to residents and businesses. Goal 5: Provide a comprehensive, attractive, cost- and resource-efficient system of parks and recreation facilities responsive to the needs and desires of the community 5.3 Provide an array of park sizes to satisfy the differing recreational needs of residents which can vary from small playgrounds, skateboarding parks, model airplane fields, ball fields, and soccer fields, to areas set aside for community gardens and other civic activities and groups. These specialty uses may be established as the entire park or may be appropriately located within a designated area in conjunction with other park elements</p>	<p>1. Foster regional collaboration and partnerships to maximize mutually beneficial outcomes. 9. Foster creativity and innovation. 14. Implement capital projects with respect to community impact, departmental and agency coordination. 20. Promote Las Cruces' unique identity. 23. Support neighborhood vitality and downtown revitalization. 25. Increase educational, recreational and cultural opportunities and amenities. 16. Increase city focus on strategic job creation.</p>	<p>C2: Increase awareness of, and encourage resident participation in, city-wide sustainability programs and services. C8: Double the City land used for local food production end of year 2013 baseline. C9: Increase the amount of local food purchased by the City by 5 percent from end of year 2014 baseline.</p>

<p>Goal 8: Provide public facilities that serve multiple functions.</p> <p>8.3 To the extent possible, encourage opportunities to provide multiple uses in single locations, share or group facilities, and coordinate maintenance with other agencies in order to maximize usage and resources that best serves the target population.</p> <p>Theme: Economic Prosperity</p> <p>Goal 25: Attract and retain a highly trained and motivated work force.</p> <p>Policies:</p> <p>6.25.1 Provide technical and financial assistance to those local programs that provide employment, volunteer opportunities and/or training to citizens, including disadvantaged workers and other persons whose skills will strengthen the local economy.</p> <p>Goal 29: Maintain the viability of agricultural production within Las Cruces and the Mesilla Valley.</p> <p>Policies:</p> <p>29.1 Encourage agricultural producing properties to be maintained in large parcels or tracts to keep production at a premium.</p> <p>29.2 Allow packaging and shipping of locally produced agricultural products on properties zoned for agricultural or agricultural-related uses. a. Production and shipping costs are reduced and the encroachment of industrial development (i.e. large scale packaging plants) into agricultural areas is discouraged. b. Restrict cooking and/or processing of agricultural products on the property unless there is a certified commercial kitchen</p>		
<p>Healthier ecosystems & smart environmental resource stewardship Food-related waste should be prevented, reused, or recycled, and natural resources should be used wisely.</p>		
<p>Comprehensive Plan 2040</p>	<p>Strategic Plan</p>	<p>Sustainability Plan</p>
<p>Theme: Healthy Community</p> <p>Goal 13: Promote the conservation and reuse of resources through innovation and best practices.</p> <p>Policies:</p> <p>13.1 Educate the public about prevention of non-point source water pollution, such as runoff from agriculture, urban environments and other natural and human-made sources</p> <p>13.5 Promote the use of reclaimed water.</p> <p>Goal 14: Encourage the reduction in the amount of solid waste generated by both residents and businesses.</p> <p>4.14.2 Continue a community-wide composting program at various locations within the city such as the yard waste composting site at the old landfill off of Lohman Avenue.</p> <p>4.14.4 Expand acceptance of different types of material for recycling when feasible</p> <p>Theme: Community Character</p> <p>Policies:</p> <p>16.5 Encourage land use mechanisms such as Land Trusts, Greenbelt Tax Status, and Transfer of Development Rights to preserve agriculture as a land use and a cultural heritage.</p>	<p>22. Maintain and preserve our natural resources.</p>	<p>M3: Increase recycling by 10 percent in City, commercial and residential activities.</p> <p>W2: Reduce water consumption in City buildings, parks, and operations by 3 percent of the end of the 2013 baseline.</p> <p>W4: Increase green infrastructure capabilities in four City-owned properties.</p> <p>C5: Establish an average of 10 percent shade canopy coverage and structures in City parks and walkable main streets.</p> <p>C7: Evaluate mechanisms to enhance ecological restoration projects.</p>

**Appendix 3:
Example Metrics**

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Five Borough Farms Indicator Definitions

HEALTH						
BENEFITS	METRICS	CROSS-TAB CATEGORIES	DEFINITION OF TERMS	TOOLS / DATA SOURCE	CALCULATION	NOTES
Improve access to healthy food for underserved communities						
	# (pounds) of food produced by the farm/garden	<ul style="list-style-type: none"> ✗ Assembly/Council District ✗ Type of food 	<p>Food produced = weighed in pounds.</p> <p>Type of food = examples include but are not limited to produce, herbs, eggs, meat.</p>	Tracking Form	<p>Total pounds = sum of all produce weighed. Reporting weight by type of vegetable can be useful.</p> <p>Note: There are other ways to report food produced (crop count), but at a minimum we recommend you track pounds produced.</p>	Farming Concrete has tools and recommended protocol for measuring food production: http://farmingconcrete.org/how-to/record-your-harvest/
	#(\$),% of the farmers market sales from food access programs	<ul style="list-style-type: none"> ✗ Type of program 	<p>Sales = dollar value of product sold.</p> <p>Food access programs = Health Bucks, Farmer's Market Nutrition/WIC/Seniors, EBT.</p>	Tracking Form	<p>% = sales from all food access programs over a given time period divided by total sales during the same time period.</p>	
	# of CSAs linked to the farm/garden	<ul style="list-style-type: none"> ✗ Assembly/Council District 	<p>CSA (Community Supported Agriculture) = Members of a CSA purchase a 'share' of vegetables from a regional farmer.Linked = Your farm/garden hosts a CSA or contributes produce to a CSA.</p>	Tracking Form		
	# of participants in CSAs linked to the farm/garden	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District 	<p>Participants = people who regularly participate in and/or attend the entire program/activity.</p> <p>CSA (Community Supported Agriculture) = Members of a CSA purchase a 'share' of vegetables from a regional farmer.</p> <p>Linked = Your farm/garden hosts a CSA or contributes produce to a CSA.</p>	Tracking Form		
	##% low income shares in CSAs linked to the farm/garden		<p>Low income = A definition used commonly by CSAs is "people who can't afford the price of the share at the initial price offered."Shares = vegetables allotted to members of the CSA, delivered weekly or bi-weekly.CSA (Community Supported Agriculture) = Members of a CSA purchase a 'share' of vegetables from a regional farmer.Linked = Your farm/garden hosts a CSA or contributes produce to a CSA.</p>	Tracking Form	<p>% = sales from low income shares in CSAs divided by total CSA sales during the same time period.</p>	

Improve food-health literacy/skills/aspirations for underserved communities				Survey		
	Q. # of people participating in farm/garden programs/activities reporting that they sometimes, very often, or always read food nutrition labels at the supermarket	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Type of program <input checked="" type="checkbox"/> Type of participation	Participants = people who regularly participate in and/or attend the entire program/activity. Reporting = through completing the survey. Food nutrition labels = Required by the Food and Drug Administration (FDA), the label:1) defines a serving size and describes the weights of macronutrients (fat, carbohydrate, protein) in a serving and the percentages that these macronutrients represent of the daily Recommended Dietary Allowance (RDA) for a 2000-Calorie diet. Additional information may be provided for specific minerals, vitamins, or other components of interest such as cholesterol.2) provides a List of Ingredients which contains the basic components of the product in order of decreasing weight. Type of participation = examples include but are not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.	Survey	Likert Scale ["never," "rarely," "sometimes," "very often," "always"]	Ask "Do you use this label (pictured) when food shopping?"See the Food Behavior Checklist survey developed by the Townsend Lab at UC Davis: http://townsendlab.ucdavis.edu/
	Q. # of people participating in farm/garden programs/activities reporting that they agree with the statement "I can change the things I eat"	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Type of program <input checked="" type="checkbox"/> Type of participation	Participants = people who regularly participate in and/or attend the entire program/activity. Type of participation = examples include but not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.	Survey	Likert Scale ["strongly disagree," "disagree," "undecided," "agree," "strongly agree"]	"I can change the things I eat"See the Fruit & Vegetable Inventory survey developed by the Townsend Lab at UC Davis: http://townsendlab.ucdavis.edu/
Increasing healthy eating						
	# of participants in the farm/garden's health-related programs	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Type of program <input checked="" type="checkbox"/> Type of participation	Participants = people who regularly participate in and/or attend the entire program/activity. Health-related program = a set of systematic activities aimed at improving health/wellness (healthy eating, physical activity, mental health, etc). Type of participation = examples include but are not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.	Tracking Form		

	# of healthy eating program strategies being implemented	X Age groupX GenderX Assembly/Council DistrictX Type of programX Type of participation	Healthy eating program = a set of systematic activities that promote healthy eating. Activities could include but are not limited to recipe dissemination, cooking skills building, exposure to food, healthy food seeking, nutrition education, environmental education. Activities should have some intensity or frequency to be counted. Type of participation = examples include but not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.	Tracking Form		
	Q. #, % of healthy eating program participants meeting the Healthy People 2020 recommended servings of five fruits and vegetables per day	X Age groupX GenderX Assembly/Council DistrictX Type of programX Type of participation	Health People 2020 recommended servings = one serving: 1 cup of raw leafy vegetables; half cup of other vegetables, raw or cooked; 1 medium apple, banana, orange, pear; half cup of chopped, canned, or canned fruit; quarter cup of dried fruit; threequarter cup of 100% fruit or vegetable juice. (Nutrition and Your Health: Dietary Guidelines for Americans, Department of Agriculture, USDHHS, 2000) Healthy eating program = a set of systematic activities that promote healthy eating. Activities could include but are not limited to recipe dissemination, cooking skills building, exposure to food, healthy food seeking, nutrition education, environmental education. Activities should have some intensity or frequency to be counted. Type of participation = Examples include but are not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.	Survey		See the Food Frequency Questionnaire Resource: http://toolkit.s24.net/dietary-assessment/methods/food-frequency-questionnaire/examples-and-links.html
	Q. #, % of healthy eating program participants consuming a fruit and/or vegetable snack once per day	X Age groupX GenderX Assembly/Council DistrictX Type of programX Type of participation	Healthy eating program = a set of systematic activities that promote healthy eating. Activities could include but are not limited to recipe dissemination, cooking skills building, exposure to food, healthy food seeking, nutrition education, environmental education. Activities should have some intensity or frequency to be counted.	Survey		See Food Behavior Checklist survey developed by the Townsend Lab at UC Davis: http://townsendlab.ucdavis.edu/
	Q. # of different vegetables eaten in the last 2 weeks by healthy eating program participants	X Age groupX GenderX Assembly/Council DistrictX Type of programX Type of participation	Participants = people who regularly participate in and/or attend the entire program/activity. Healthy eating program = a set of systematic activities that promote healthy eating. Activities could include but are not limited to recipe dissemination, cooking skills building, exposure to food, healthy food seeking, nutrition education, environmental education. Activities should have some intensity or frequency to be counted. Type of participation = examples include but are not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.	Survey, FFQ (Food Frequency Questionnaire)		See the Food Frequency Questionnaire Resource: http://toolkit.s24.net/dietary-assessment/methods/food-frequency-questionnaire/examples-and-links.html

	Q. #,% of healthy eating program participants consuming fast food once a week or less	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of program ✗ Type of participation 	<p>Fast food = defined as restaurants offering:</p> <ol style="list-style-type: none"> 1) quick service based on criteria of the National Restaurant Association. 2) meal service (vs. snacks, dessert and coffee). 3) prices less than \$7.00 per meal. <p>Restaurants with more than five locations with the same name, like major fast-food chains and regionally and locally owned chains, are included. (see http://www.publichealthadvocacy.org/RFEI/pr esskit_RFEI.pdf)</p> <p>Healthy eating program = a set of systematic activities that promote healthy eating. Activities could include but are not limited to recipe dissemination, cooking skills building, exposure to food, healthy food seeking, nutrition education, environmental education. Activities should have some intensity or frequency to be counted.</p> <p>Type of participation = examples include but are not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.</p>	Survey	Multiple choice question ["never," "less than once per week," "1–2 times a week," "3–4 times a week," or "5 or more times a week"]	Ask "In an average week how often do you eat [eat in or take out] a meal from a fast-food place such as McDonald's, KFC, Taco Bell, or a take-out pizza place?"
	Q. #,% of healthy eating program participants that can identify where their food comes from (i.e. origin of food as plant based)	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of program ✗ Type of participation 	<p>Healthy eating program = a set of systematic activities that promote healthy eating. Activities could include but are not limited to recipe dissemination, cooking skills building, exposure to food, healthy food seeking, nutrition education, environmental education. Activities should have some intensity or frequency to be counted.</p> <p>Type of participation = examples include but are not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.</p>	Survey	Multiple choice question ("check all that apply") with a column for "plant/animal" and one for "factory/lab". This indicator usually applies to healthy eating programs for kids and young adults.	Ask "Think about where each of these every-day items started out from. Did it grow (coming from a plant or animal on a farm) or was it made in a factory or laboratory?" Examples of items: wool, sugar, cooking oil, cardboard, plastic, glass, lycra, aluminum foil.
Increasing physical activity						
	# of people engaged in farming/gardening on the farm/garden	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of participation 	Farming/gardening = includes activities that imply physical exertion such as digging, planting, harvesting, weeding, carrying soil, pushing a mower, etc.	Tracking Form		
	# of total person-hours spent farming/gardening on the farm/garden per year	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of program 	<p>Person-hours = # of people multiplied by # of hours farming/gardening.</p> <p>Farming/gardening = includes activities that imply physical exertion such as digging, planting, harvesting, weeding, carrying soil, pushing a mower etc.</p>	Tracking Form		

		<ul style="list-style-type: none"> ✗ Type of participation 				
	Q. # (average) time spent farming/gardening among people who participate in programs/activities	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of participation 	Farming/gardening = includes activities that imply physical exertion such as digging, planting, harvesting, weeding, carrying soil, pushing a mower, etc.	Survey	Multiple choice question ["never," "less than once per week," "1–2 times a week," "3–4 times a week," or "5 or more times a week"]	Ask "In an average week how often do you garden?"
SOCIAL						
BENEFITS	METRICS	CROSS-TAB CATEGORIES	DEFINITION OF TERMS	TOOLS / DATA SOURCE	CALCULATIONS	NOTES
Social capital/connection						
	# of people participating in farm/garden programs/activities	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of program ✗ Type of participation 	Community/Neighborhood = Assembly/Council District	Tracking Form		
	# total person-hours spent working on the farm/garden per year	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of program ✗ Type of participation 	<p>Person-hours = # of people multiplied by # of hours worked.</p> <p>Type of program = examples include but are not limited to mentoring program, skills building/training, environmental education, food exposure/preparation, health program.</p> <p>Type of participation = examples include but are not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.</p>	Tracking Form		
	# of farmers markets the farm/garden sells in	<ul style="list-style-type: none"> ✗ Assembly/Council District 		Tracking Form		
	#(\$ from urban agriculture-based farmers market sales	<ul style="list-style-type: none"> ✗ Assembly/Council District 	Urban agriculture-based farmers markets = Your farm/garden hosts a farmers market or contributes produce to a farmers market.	Tracking Form	Total annual sales = sum of sales for defined time period (year).	

	% increase in urban agriculture-based farmers market sales from prior year	<input checked="" type="checkbox"/> Assembly/Council District	Urban agriculture-based farmers markets = Your farm/garden hosts a farmers market or contributes produce to a farmers market.	Tracking Form	Follow steps 1-3: 1) Calculate the change in sales (subtract prior year's earnings from the current year's). 2) Divide that change by the prior year's sales (you will get a decimal number). 3) Convert that to a percentage (by multiplying by 100 and adding a "%" sign).	
	Q. community members' perceived benefits and concerns about urban agriculture	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender	Urban agriculture = Urban Agriculture is the growing, processing, and distributing of food and other products through intensive plant cultivation and animal husbandry in and around cities	Interviews/Focus group		This process requires qualitative data collection and analysis.
	Q. community perceptions of safety (personal safety, crime) in their community	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District	Community = Assembly/Council District	Interview/Focus group		This process requires qualitative data collection and analysis.
Youth development						
	# of youth participating in the farm/garden	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Type of program <input checked="" type="checkbox"/> Type of participation	Youth = anyone under the age of 24. A general developmental stage that refers to a range of ages and developmental needs. It is important to identify age groups (under age 10, ages 10-14, 15-19, 20-24) to most appropriately meet their needs. Type of program = examples include but are not limited to mentoring program, skills building/training, environmental education, food exposure/preparation, health program Type of participation = examples include but are not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.	Tracking Form		
	#, % of farm/garden programs that employ youth		Employment = paid work, including part-time or full-time. Youth = anyone under the age of 24. A general developmental stage that refers to a range of ages and developmental needs. It is important to identify age groups (under age 10, ages 10-14, 15-19, 20-24) to most appropriately meet their needs.	Tracking Form		

	# of total youth-person-hours spent working on the farm/garden per year	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of program ✗ Type of participation 	<p>Person-hours = # of people multiplied by # of hours worked.</p> <p>Type of program = examples include but are not limited to mentoring program, skills building/training, environmental education, food exposure/preparation, health program.</p> <p>Type of participation = examples include but are not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.</p>	Tracking Form		
	# of youth the farm/garden trained in job skills	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of learning objective 	<p>Trained = having completed an organized activity or set of activities aimed at imparting information and/or having receiving instructions to improve knowledge and skills for employment.</p> <p>Learning objective = examples include but are not limited to financial literacy, farm management, health education, cooking skills.</p>	Tracking Form		
	Q. #,% of youth who participated in a youth program that graduate from high school	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of program 	<p>Youth program = This should only include youth programs with significant intensity and/or frequency. For example, summer internship programs would be a good youth program to include.</p>	Survey/Longitudinal Study	% = # of youth reporting that they graduated from high school divided by # of youth who took the survey.	You can follow up with youth who participated in your youth summer internship program and count the people who graduated from high school. In order to make the strongest argument for your program's contribution to that outcome, you would have to do this as part of a stronger research design (longitudinal study).
	Q. #,% of youth who participated in a program that report high self esteem	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of program 		Self Esteem Scale	% = # of youth reporting high self esteem divided by # of youth who took the survey.	You would implement this survey/survey question before and after youth participation in your program. See the Rosenberg Self-Esteem Scale here: http://www.yorku.ca/rokada/psyctest/rosenbrg.pdf
	Q. #,% of youth who participated in a program reporting they have at least one good relationship with an adult other than their parent (mentor)	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of program 		Survey	% = # of youth reporting they have at least one good relationship with an adult other than their parent divided by # of youth who took the survey.	You would implement this survey/survey question before and after youth participation in your program.
	Q. #,% of youth indicating positive attitude change and/or aspirations related to participating in youth-adult partnerships	<ul style="list-style-type: none"> ✗ Age group ✗ Gender ✗ Assembly/Council District ✗ Type of program 		Survey	% = # of youth indicating positive attitude change/aspirations divided by # of youth who took the survey.	You would implement this survey/survey question before and after youth participation in your program.

	Q. #,% of youth who participated in a program reporting that they are/identify with being "part of their food community"	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Type of program	Type of program = examples include but are not limited to mentoring program, skills building/training, environmental education, food exposure/preparation, health program	Survey	% = # of youth reporting that they identify with being part of their food community divided by # of youth who took the survey.	You would implement this survey/survey question before and after youth participation in your program.
	Q. #,% of individuals reporting positive attitude and/or aspiration related to volunteering for civic activities, community service, and/or philanthropy	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Type of program		Survey	% = # of youth indicating positive attitude change/aspirations divided by # of youth who took the survey.	You would implement this survey/survey question before and after youth participation in your program.
	Q. #,% of youth engaged in the political/governance process	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Type of activity	Type of activity = examples include but are not limited to registering to vote, attending meetings of governmental or civic organizations, presenting to civic boards, writing to elected or civil service officials, meeting with legislators, seeking office in a club or school, publishing letter(s) to the editor, participating in the election process.	Survey	% = # of youth indicating they are involved in the political/governance process divided by # of youth who took the survey.	You would implement this survey/survey question before and after youth participation in your program.
Food access						
	#(\$),% of sales from food access programs	<input checked="" type="checkbox"/> Type of program	Food access programs = Health Bucks, Farmer's Market Nutrition/WIC/Seniors, EBT.	Tracking Form	Total annual sales = sum of sales for defined time period (year). % = sales from all food access programs over a given time period divided by total sales during the same time period.	
	# of CSAs linked to the farm/garden	<input checked="" type="checkbox"/> Assembly/Council District	CSA (Community Supported Agriculture) = Members of a CSA purchase a 'share' of vegetables from a regional farmer. Linked = Your farm/garden hosts a CSA or contributes produce to a CSA.	Tracking Form		
	# of participants in the CSA linked to the farm/garden	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District	Participants = people who regularly participate in and/or attend the entire program/activity. CSA (Community Supported Agriculture) = Members of a CSA purchase a 'share' of vegetables from a regional farmer. Linked = Your farm/garden hosts a CSA or contributes produce to a CSA.	Tracking Form		
	%,% low income shares in CSA linked to the farm/garden		Low income = A definition used commonly by CSAs is "people who can't afford the price of the share at the initial price offered." Shares = vegetables allotted to members of the CSA, delivered weekly or bi-weekly.	Tracking Form		

	# (pounds) of food produced by the farm/garden	X Type of food	Food produced = weighed in pounds. Type of food = examples include but are not limited to produce, herbs, eggs, meat.	Tracking Form	Total pounds = sum of all produce weighed. Reporting weight by type of vegetable can be useful. Note: There are other ways to report food produced (crop count), but at a minimum we recommend you track pounds produced.	Farming Concrete has tools and recommended protocol for measuring food production: http://farmingconcrete.org/how-to/record-your-harvest/
	Q. # of people in programs/activities that are growing food because they face food security issues	X Age group X Gender X Assembly/Council District X Type of program	Food security = Food security for a household means access by all members at all times to enough food for an active, healthy life. Food security includes at a minimum: The ready availability of nutritionally adequate and safe foods. Assured ability to acquire acceptable foods in socially acceptable ways (that is, without resorting to emergency food supplies, scavenging, stealing, or other coping strategies). (USDA definition)	Survey		See the USDA Guide to Measuring Household Food Security found at: http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CFQQFjAA&url=http%3A%2F%2Fwww.fns.usda.gov%2Ffiles%2Ffiles%2Ffsguide.pdf&ei=A4IEUJmHE8nJOAH4to30Bw&usg=AFQjCNEW5L59fFh0hWfUdWZmSBsiggQu2Q&sig2=k2AMNQif8gefWpZzUTEJ-g
Age integrated spaces						
	# of participants over 65		Participants = people who regularly participate in and/or attend the entire program/activity.	Tracking Form	Tally of participants over age 65	

ECONOMIC

BENEFITS	METRICS	CROSS-TAB CATEGORIES	DEFINITION OF TERMS	TOOLS / DATA SOURCE	CALCULATION	NOTES
Local and regional economic stimulation						
	\$ total value of food produced		Value = the monetary estimate based on market value. (i.e. For how much is your local supermarket selling spinach per lb?) You may be selling it for less, but you can calculate the monetary value by using estimates based on local prices. Food produced = weighed in pounds.	Tracking Form	Total value = value (local price divided by lb) multiplied by food produced.	
	\$ total value per square foot of produce		Value = the monetary estimate based on market value. (i.e. For how much is your local supermarket selling spinach per lb?) You may be selling it for less, but you can calculate the monetary value by using estimates based on local prices. Square footage of actual farmed land = All land on your farm/garden where you currently grow food.	Tracking Form	Total value per square foot = total value of food produced divided by # of square feet of produce.	

	#,(\$ total revenue generated from sales of food					
	% of total revenue from sales of regional produce		Regional produce = The total distance that a product can be transported and still be considered a "locally or regionally produced agricultural food product" is less than 400 miles from its origin, or within the State in which it is produced. (According to the definition adopted by the U.S. Congress in the 2008 Food, Conservation, and Energy Act, 2008 Farm Act)	Tracking Form	Total revenue = total receipts from the sale of any given quantity of a product. Calculated as the selling price multiplied by the quantity sold. % = sales of regional produce over a given time period divided by total revenue (above) during that same time period.	
	% of CSA sales that is from regional produce		Regional produce = The total distance that a product can be transported and still be considered a "locally or regionally produced agricultural food product" is less than 400 miles from its origin, or within the State in which it is produced. (According to the definition adopted by the U.S. Congress in the 2008 Food, Conservation, and Energy Act, 2008 Farm Act)	Tracking Form	Total CSA sales = sum of all CSA sales for defined time period (year). % = sales of regional produce over a given time period divided by total CSA sales during the same time period.	
	# (hours) of volunteer-time contributed to the farm/garden	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Type of program <input checked="" type="checkbox"/> Type of participation	Volunteer-time = A volunteer is a person who performs work for your farm/garden without pay. Type of participation = Examples include but are not limited to youth summer internship, 3-day workshop, 1-time visit to health fair, weekly farmstand management, 4 hour cooking class.	Tracking Form	Volunteer-time contributed = # of volunteers multiplied by # of hours worked.	
	#,(\$ from urban agriculture-based farmers market sales	<input checked="" type="checkbox"/> Assembly/Council District	Urban agriculture-based farmers markets = Your farm/garden hosts a farmers market or contributes produce to a farmers market.	Tracking Form	Total annual sales = sum of sales for defined time period (year).	
	% increase in urban agriculture-based farmers market sales from prior year	<input checked="" type="checkbox"/> Assembly/Council District	Urban agriculture-based farmers markets = Your farm/garden hosts a farmers market or contributes produce to a farmers market.	Tracking Form	Follow steps 1-3: 1) Calculate the change in sales (subtract prior year's earnings from the current year's). 2) Divide that change by the prior year's sales (you will get a decimal number). 3) Convert that to a percentage (by multiplying by 100 and adding a "%" sign).	
Job growth						
	# of people employed by the farm/garden	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Employment type	Employment = paid work, including part-time or full-time.	Tracking Form		
	#, % of new jobs created by the farm/garden	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Employment type	Employment = paid work, including part-time or full-time.	Tracking Form		

Job Readiness						
	# of people the farm/garden has trained in job skills	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Type of learning objective	<p>Trained = having completed an organized activity or set of activities aimed at imparting information and/or having receiving instructions to improve knowledge and skills for employment.</p> <p>Learning objective = examples include but are not limited to financial literacy, farm management, health education, cooking skills.</p>	Tracking Form		
	# of youth the farm/garden trained in job skills	<input checked="" type="checkbox"/> Age group <input checked="" type="checkbox"/> Gender <input checked="" type="checkbox"/> Assembly/Council District <input checked="" type="checkbox"/> Type of learning objective	<p>Trained = having completed an organized activity or set of activities aimed at imparting information and/or having receiving instructions to improve knowledge and skills for employment.</p> <p>Learning objective = examples include but are not limited to financial literacy, farm management, health education, cooking skills.</p>	Tracking Form		
	#, % of farm/garden programs that employ youth		<p>Employment = paid work, including part-time or full-time.</p> <p>Youth = anyone under the age of 24. A general developmental stage that refers to a range of ages and developmental needs. It is important to identify age groups (under age 10, ages 10-14, 15-19, 20-24) to most appropriately meet their needs.</p>	Tracking Form		
Affordable healthy food						
	#(\$), % of sales from food access programs	<input checked="" type="checkbox"/> Type of program	Food access programs = Health Bucks, Farmer's Market Nutrition/WIC/Seniors, EBT.	Tracking Form	<p>Total annual sales = sum of sales for defined time period (year).</p> <p>% = sales from all food access programs over a given time period divided by total sales during the same time period.</p>	
ECOLOGICAL						
BENEFITS	METRICS	CROSS-TAB CATEGORIES	DEFINITION OF TERMS	TOOLS / DATA SOURCE	CALCULATION	NOTES
Awareness of food systems ecology						
	# of school students participating in food system ecology programs	<input checked="" type="checkbox"/> School <input checked="" type="checkbox"/> Grade level	<p>Food system ecology program = applies ecological concepts and principles to the design, development, and management of sustainable agricultural systems.</p> <p>School students = youth currently attending a K-12 school.</p>	Tracking Form		

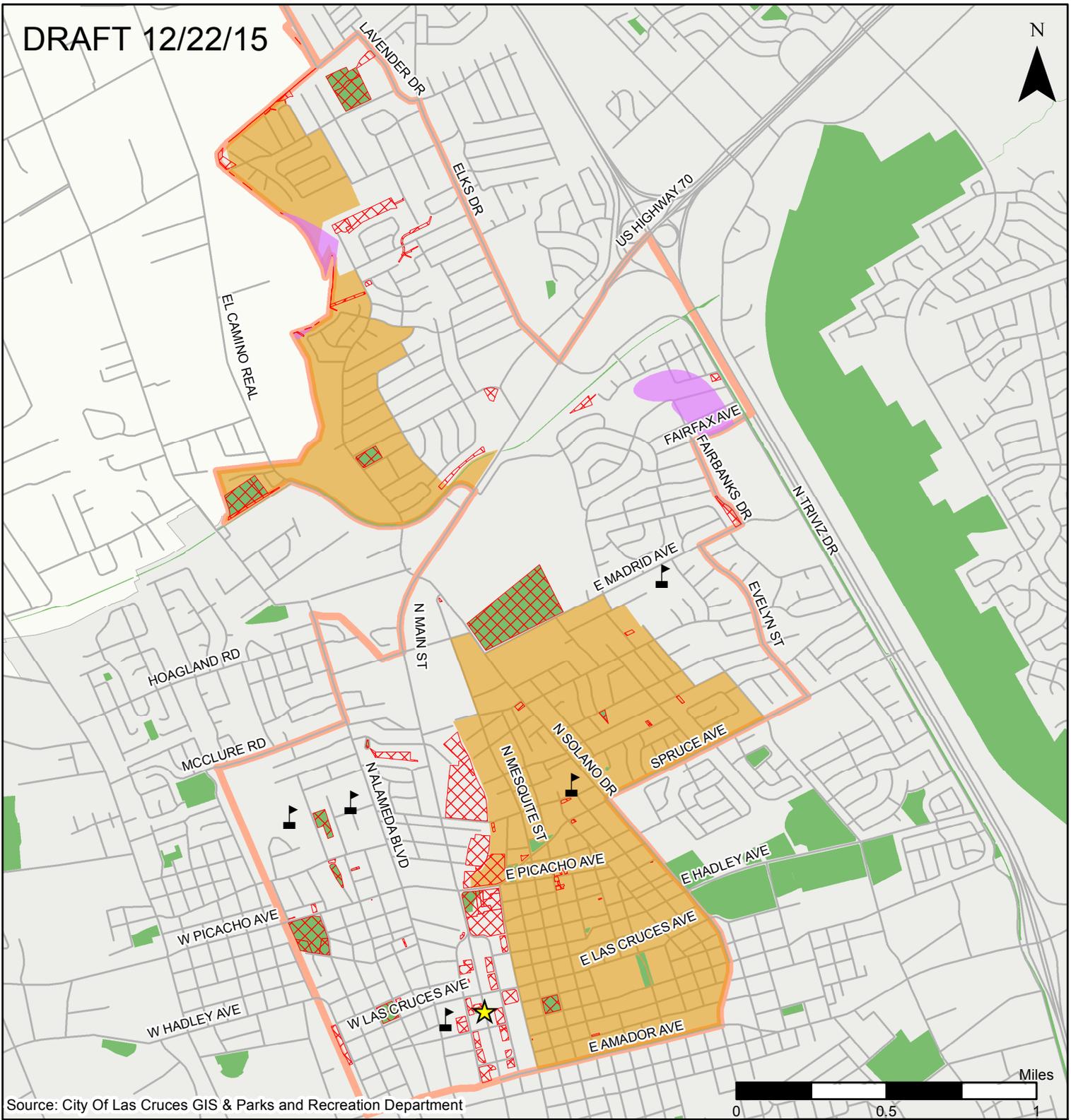
Stewardship						
	# of total participants in food system ecology programs	✗ Type of program	Participants = people who regularly participate in and/or attend the entire program/activity. Ecological program = examples include but are not limited to composting and tree-planting.	Tracking Form		
	# (pounds) of food produced by the farm/garden	✗ Type of food	Food produced = weighed in pounds. Type of food = examples include but are not limited to produce, herbs, eggs, meat.	Tracking Form	Total pounds = sum of all produce weighed. Reporting weight by type of vegetable can be useful. Note: There are other ways to report food produced (crop count), but at a minimum we recommend you track pounds produced.	Farming Concrete has tools and recommended protocol for measuring food production: http://farmingconcrete.org/how-to/record-your-harvest/
	# (pounds) of food produced per square foot			Tracking Form	Total pounds (above) divided by total square footage of land on which you can grow food.	
	Q. community perceptions of the importance of urban agriculture as part of green/open space	✗ Age group ✗ Gender ✗ Assembly/Council District	Urban agriculture = Urban agriculture is the growing, processing, and distributing of food and other products through intensive plant cultivation and animal husbandry in and around cities.	Interviews/Focus group		This process requires qualitative data collection and analysis.
Conservation						
	# (square footage) of rooftop area collected for rainwater harvesting			Tracking Form	Amount (square footage) of water diverted.	
	#(\$) annual consumption of water use			Tracking Form		
	#(\$) annual consumption of energy			Tracking Form		
	#, % (square footage) of land/lot that could potentially grow food		Potential farmable land = All arable land on your farm/garden (whether currently farmed/gardened or not).	Tracking Form	Add the square footage of all potentially farmable plots. Note: total land that could potentially grow food may be considerably less than your lot size. %=total square footage of land that could potentially grow food divided by total square footage of your lot.	
	#, % (square footage) of land/lot actually used to grow food		Actual farmed land = All land on your farm/garden where you currently grow food.	Tracking Form	Add the square footage of all plots where you actually grow food currently. % = total square footage of land actually used to grow food divided by total square footage of your lot.	
	# (pounds) of food waste processed (for compost)			Tracking Form		
Stormwater management						

	# (square footage) of permeable surface in the farm/garden			Tracking Form		
Soil improvement						
	# lead level in the farm's/garden's soil, per year			Tracking Form		
	# (pounds) of compost produced/processed			Tracking Form		
Reducing food waste						
	# (pounds) of food waste collected	<input checked="" type="checkbox"/> Collection type <input checked="" type="checkbox"/> Food waste type	Collection type = collected by public versus in-house.	Tracking Form		
Habitat improvement/biodiversity/ecological connectivity						
	# of activities related to increase biodiversity	<input checked="" type="checkbox"/> Type of activities	Type of activities = examples include but are not limited to beekeeping, native planting, land restoration.	Tracking Form		
	# of beehives that are part of the farm/garden			Tracking Form		
	# of chickens that are part of the farm/garden			Tracking Form		
	% of vegetation planted with native/heirloom varieties through the farm/garden	<input checked="" type="checkbox"/> Type of plants <input checked="" type="checkbox"/> Ecological benefits <input checked="" type="checkbox"/> Agricultural benefits	Type of plants = native/heirloom varieties versus non-native varieties. Ecological benefits = examples include but are not limited to the presence of pollinators, birds, improved habitat. Agricultural benefits = examples include but are not limited to a stronger gene pool and disease resistance.	Tracking Form		
	# of crops grown	<input checked="" type="checkbox"/> Type of crop		Tracking Form		
	% of produce grown (as measured by % of total weight) without use of synthetic pesticides	<input checked="" type="checkbox"/> Type of food	Food grown = weighed in pounds. Type of food = examples include but are not limited to produce, herbs, eggs, meat.	Tracking Form		
	% of produce grown (as measured by % of total weight) without use of synthetic fertilizers	<input checked="" type="checkbox"/> Type of food	Food grown = weighed in pounds. Type of food = examples include but are not limited to produce, herbs, eggs, meat.	Tracking Form		

**Appendix 4:
District Maps**

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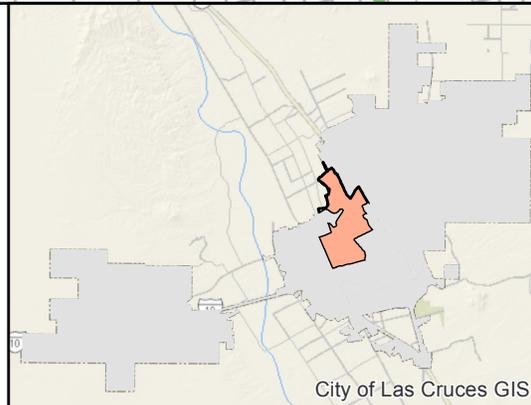
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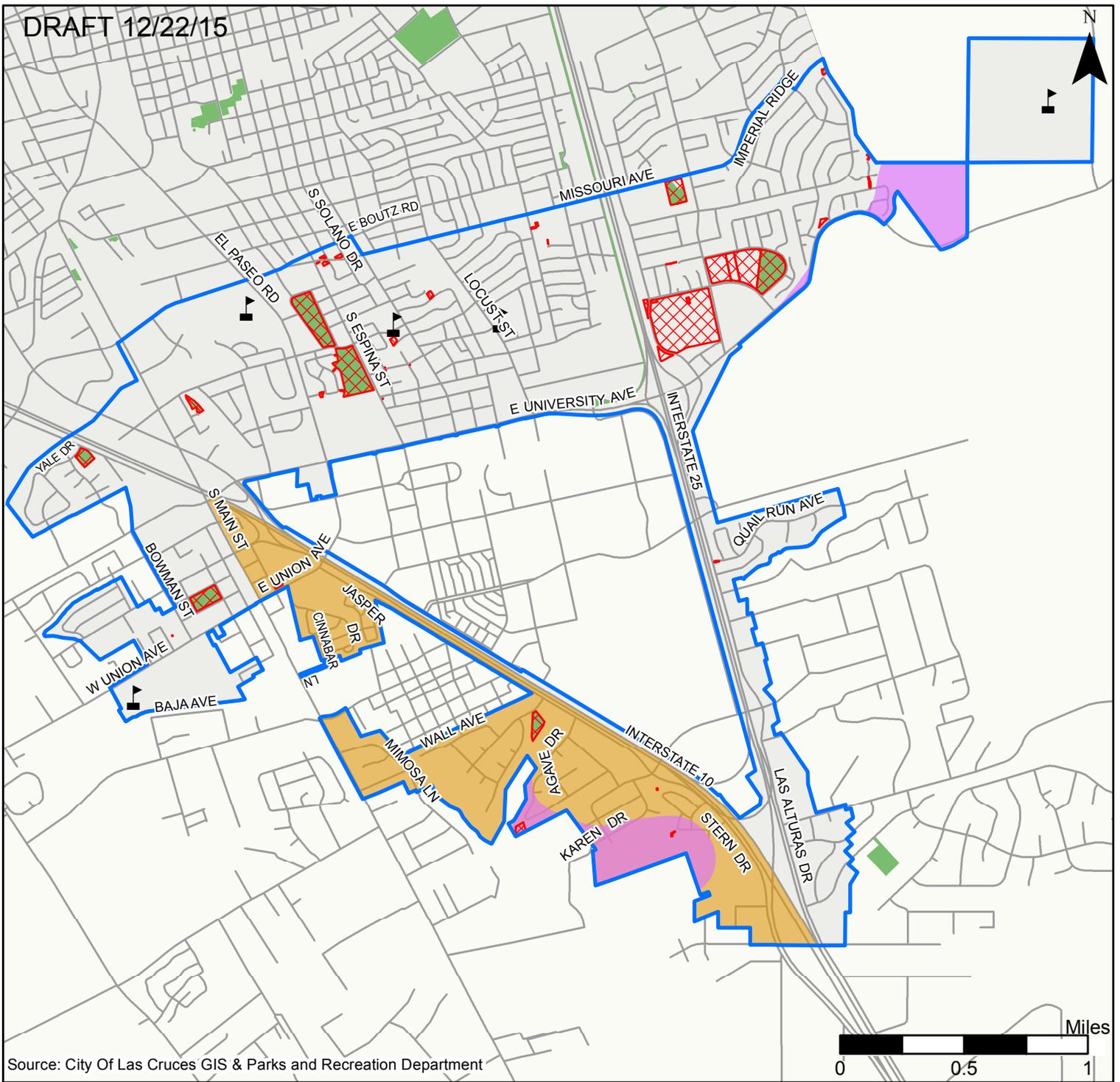
Source: City Of Las Cruces GIS & Parks and Recreation Department

Opportunity Areas Map: District 1

Disclaimer: The map highlights areas of opportunity, it does not guarantee any action.

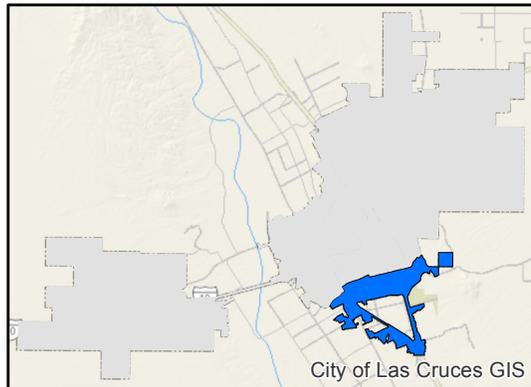


-  Farmer's Market
-  Schools with Gardens
-  City-Owned Parcels
-  Park Service Gap
-  Parks
-  USDA Certified Food Deserts
-  Council District 1
-  Roads
-  City of Las Cruces

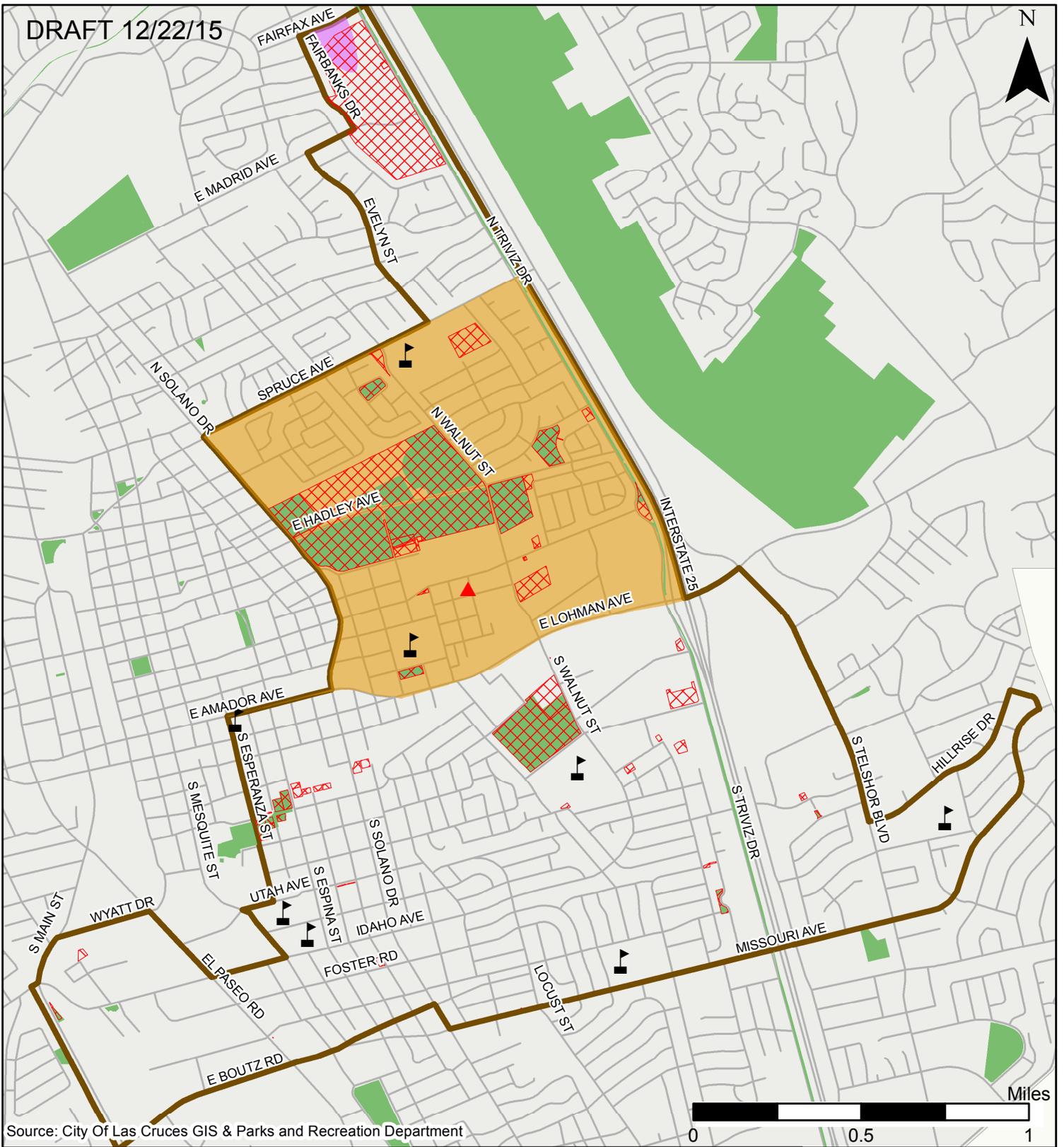


Source: City Of Las Cruces GIS & Parks and Recreation Department

Opportunity Areas Map: District 2



-  Schools with gardens
-  City owned parcels
-  Parks
-  Parks Service Gap
-  USDA Certified Food Deserts
-  Roads
-  Council District 2
-  City of Las Cruces

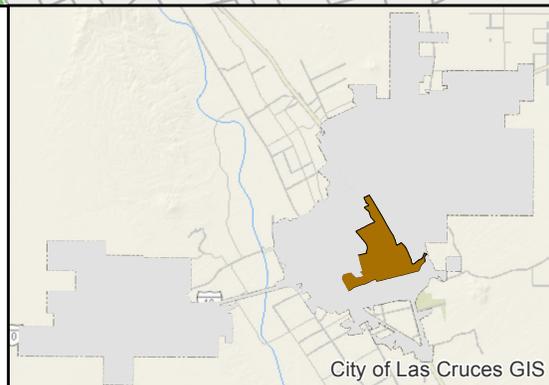


Source: City Of Las Cruces GIS & Parks and Recreation Department



Opportunity Areas Map: District 3

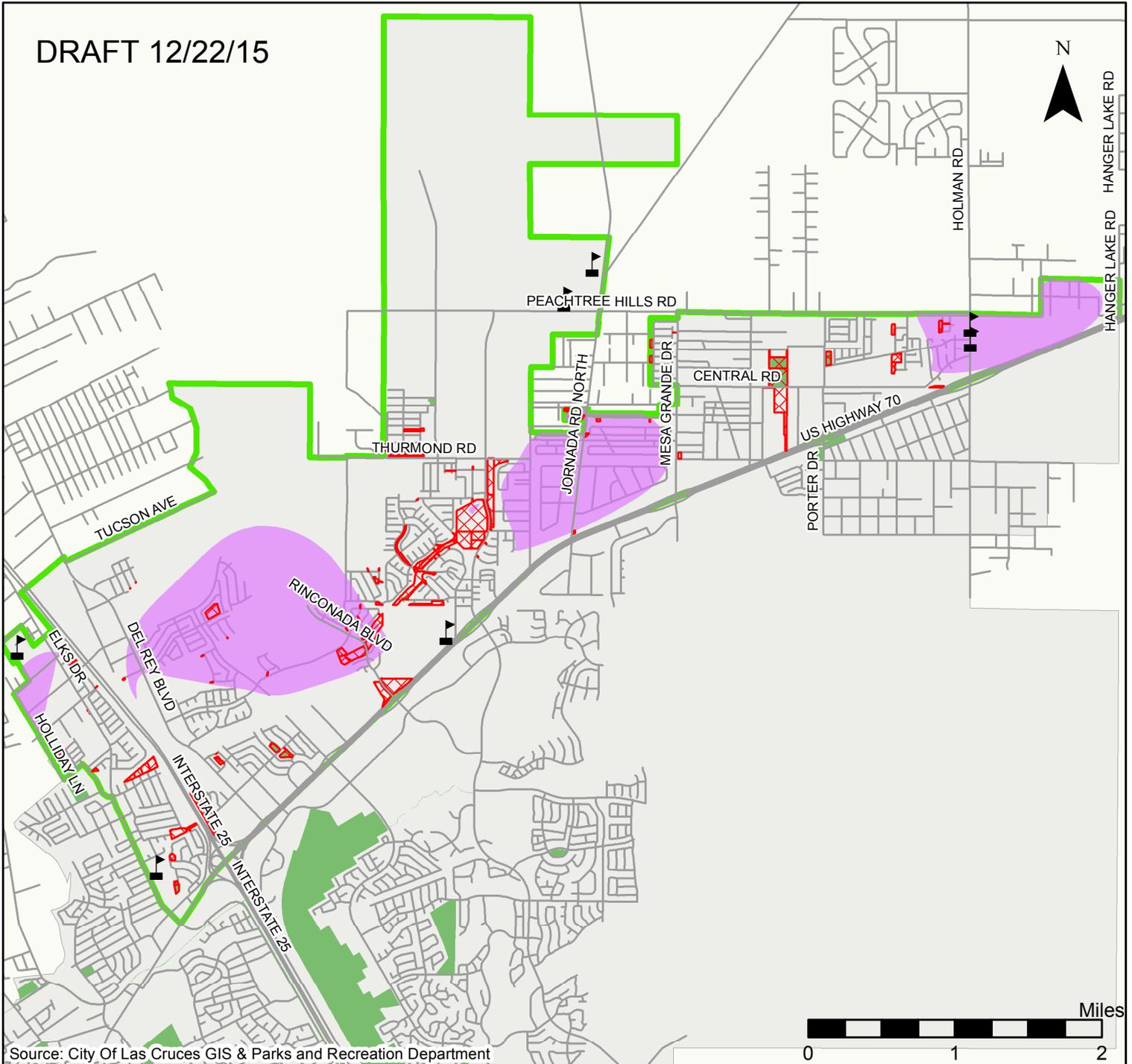
Disclaimer: The map highlights areas of opportunity, it does not guarantee any action.



- Schools with Gardens
- Superfund Site
- City-Owned Parcels
- Park Service Gap
- Parks
- USDA Certified Food Desert
- Council District 3
- Roads

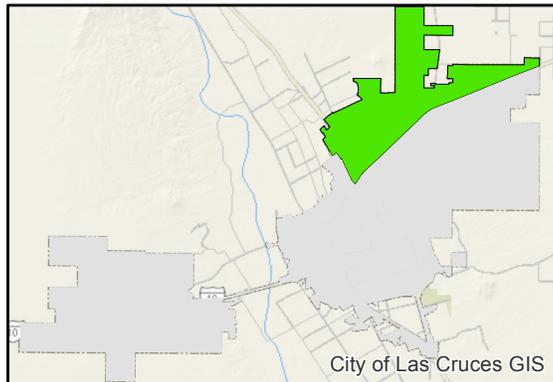
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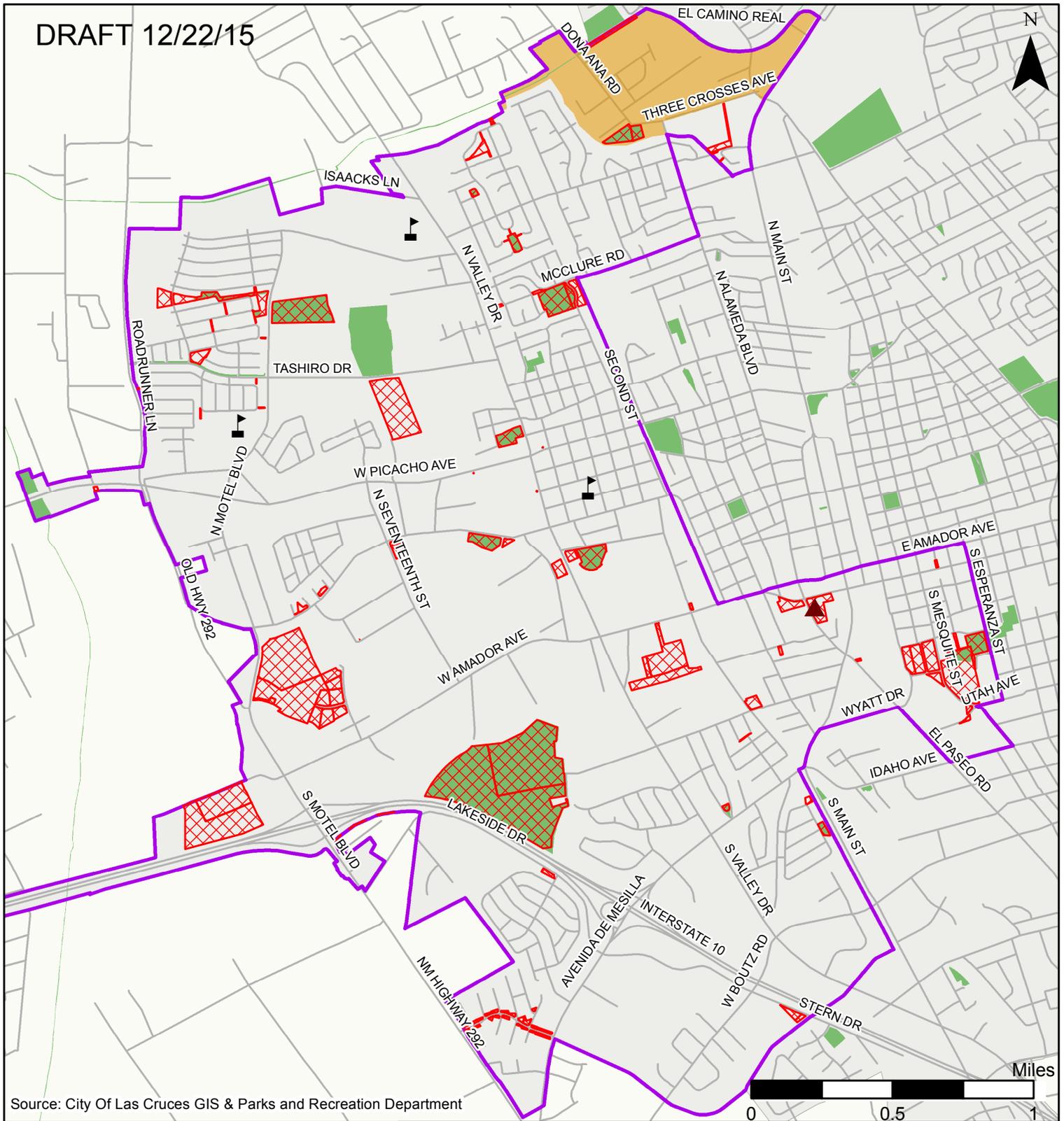
Source: City Of Las Cruces GIS & Parks and Recreation Department

Opportunity Areas Map: District 5



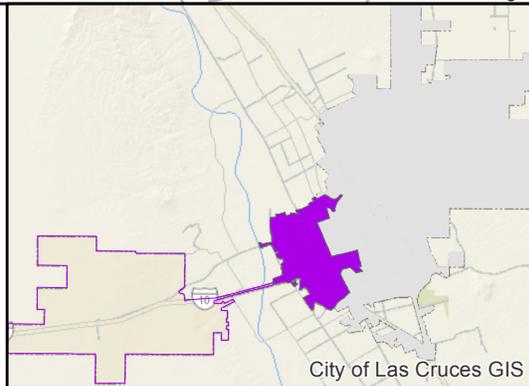
City of Las Cruces GIS

-  Schools with gardens
-  City-Owned Parcels
-  Park Service Gaps
-  Parks
-  Roads
-  Council District 5
-  City of Las Cruces



Source: City Of Las Cruces GIS & Parks and Recreation Department

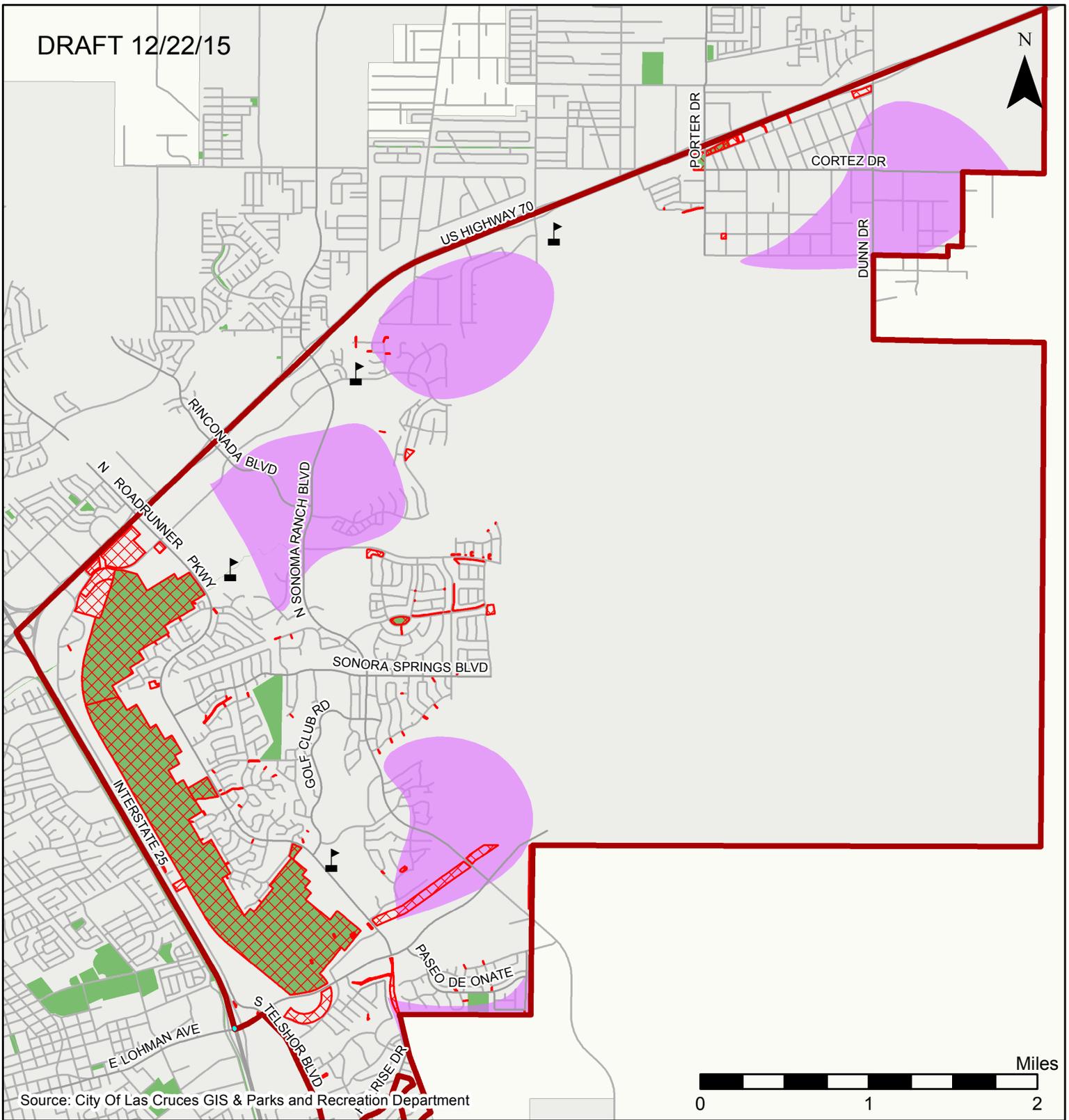
Opportunity Areas Map: District 4



-  School with gardens
-  Brownfield
-  City-Owned Parcels
-  Park Service Gap
-  Parks
-  USDA Certified Food Desert
-  Roads
-  Council District 4
-  City of Las Cruces

Disclaimer: The map highlights areas of opportunity, it does not guarantee any action.

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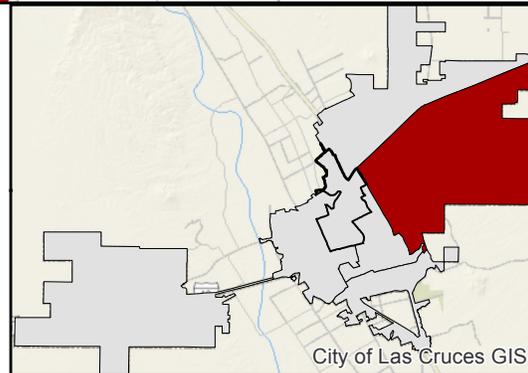


Source: City Of Las Cruces GIS & Parks and Recreation Department



Opportunity Areas Map: District 6

Disclaimer: The map highlights areas of opportunity, it does not guarantee any action.



- Schools with Gardens
- City-Owned Parcels
- Park Service Gaps
- Parks
- Roads
- Council District 6
- City of Las Cruces

City of Las Cruces GIS

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