
URBAN
AGRICULTURE IN
COLUMBUS, OH

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Urban Agriculture in Columbus is a report generated by undergraduate students in Ohio State University's City and Regional Planning studio class CRPLAN 41910s under the instruction of Assistant Professor Bernadette Hanlon. The following students contributed extensively to this report:

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GOAL OF THE PROJECT

Our goal is to create a viable, informative and impactful urban agriculture code for the City of Columbus. This code will serve as a tool for residents and city officials alike. The purpose is to make urban agriculture easy to implement citywide and to promote the growth and sales of homegrown produce in the Columbus metropolitan area.

INTRODUCTION

Urban Agriculture in Columbus is a report that examines the applicability and benefits of urban agriculture for the City of Columbus. Working with the city's Land Redevelopment Office, we set out to understand more about the impact and potential benefits of urban agriculture for local communities in the city of Columbus, and determine the regulations and policies needed to help develop effective urban farming and gardening projects in the future.

We began this process by visiting urban farms sites in Columbus and talking with urban farmers. Our first farm visit was to the Clarfield Farm, formed in 2012 by Urban Farms of Central Ohio (UFCO) with the help of the Mid-Ohio Food Bank. This farm is providing food to local communities in and around south Columbus and is selling its produce to local restaurants. We then visited a proposed urban agricultural garden close to Italian Village that is to be leased to A&R Development Group, owners of the Crest Gastropub. This group is interested in utilizing this urban farming project to support their local restaurants as well as enhance Columbus's food economy in a sustainable way. We also investigated other farms around the city.

From our visits and conversations with urban farmers and community gardeners as well as our extensive examination of the literature on the value of urban agriculture, we determined the potential ways in which Columbus could benefit from encouraging farming activities in the city. There are numerous locally sourced restaurants in the city that could use fresh produce from city farms; lower-income neighborhoods where there are few large-scale grocery stores could benefit from farms and gardens providing healthy fresh fruits and vegetables; neighborhoods in the city with many abandoned and desolate empty lots could be transformed by urban agricultural projects that increase surrounding property values and help reduce crime. As we identify in this report, there are many economic, health, ecological and social benefits from urban agriculture.

Many cities have developed specific zoning regulations and policies to enhance urban farming and urban gardening within their jurisdictions. For this report, we analyzed urban agricultural zoning codes and ordinances from six cities, including Austin, Baltimore, Chicago, Cleveland, Detroit, and Pittsburgh. We also talked with planners from some of these places. Each city has established regulations surrounding such activities as the sale of farm products, the management of farm animals, the site design, and soil quality. Utilizing and adapting information from this analysis, we developed an urban agriculture zoning ordinance specifically for Columbus. The details of this zoning ordinance are available in the Appendix of this document.

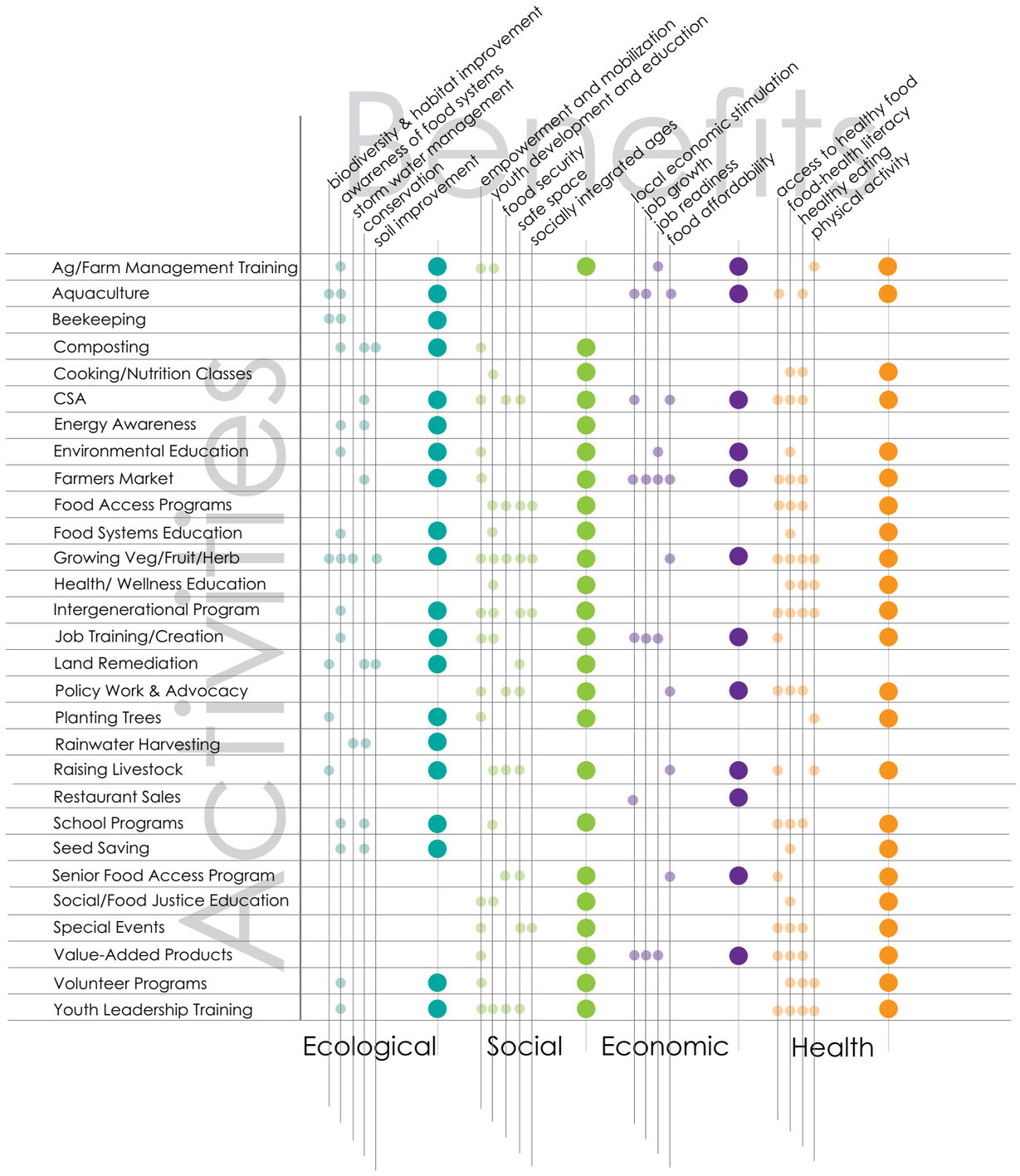
We also offer a number of different policy areas that the city can investigate so as to further enhance urban agriculture. The city needs to establish protocols and regulation for stormwater management, permitting, soil quality and land tenure so as to support urban farming and community gardening in the city.

In addition, we identify a number of different criteria the city can use to determine potential sites for future urban agricultural projects in the city of Columbus.

BENEFITS
OF URBAN AGRICULTURE:
INTRODUCTION

Urban agriculture is a powerful tool that strengthens the local food economy, supports neighborhood stabilization by improving vacant lots, and improves access to healthy food in city neighborhoods. By zoning specifically for urban agriculture, this practice will be encouraged in ways where cities and their residents stand to reap a plethora of different benefits. These benefits can be grouped into four main categories: ecological benefits, social benefits, economic benefits and health benefits. In the following sections, each of these benefit is explored in depth and we include some examples of how they are provided in different cities.

Clairfield Farm, Columbus, Ohio. September, 2014.



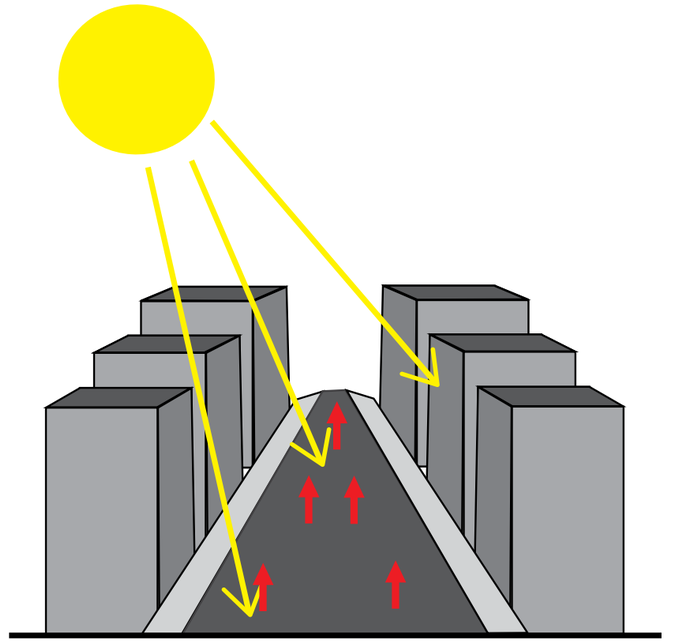
BENEFITS
OF URBAN AGRICULTURE:
ECOLOGICAL

Over the Fence Urban Farm is farmed by people who want to grow their own food and give back to the community. Today they are producing a wide variety of vegetables, herbs, flowers, and fruits. Over the Fence Urban Farm keeps a blog about their farm activities that is up-to-date. They document their success and make changes each season based on feedback and interest. They experiment with new things and most importantly they respect the natural environment in which they grow (www.overthefenceurbanfarm.com).

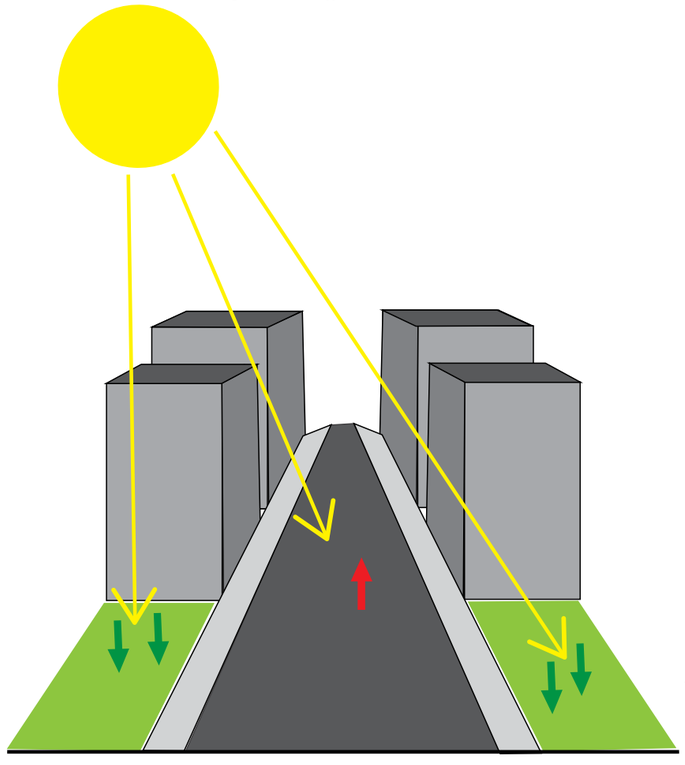
In **Columbus,** there are many urban farms that grow organic vegetables. **Over The Fence** Urban Farm is a good example. **Over the Fence** Farmer, Jodi Kushins, states that food grown on the farm is, "mostly organic, [grown with] no pesticides, low till, crop rotation, [and] trying season extension this year." By growing produce without using pesticides, **Over the Fence Urban Farm** encourages the ecological benefits that can have ripple effects throughout the city. Urban farms provide an opportunity for household waste to be composted, the product of which is great for growing. **Over the Fence Urban Farm**, composts kitchen scraps, fallen leaves, and other assorted yard waste, and, when it has broken down, add this to their raised beds in the springtime.

As with most entrepreneurs, urban farmers wish to expand and grow their operation. **Over the Fence Urban Farm** showed this when they sought out more land "over the fence" from their own backyard. Another urban farm is **Clarfield Farm**, the **Mid-Ohio Food Bank's** urban pilot farm in Groveport. Farm manager Dana Hilfinger is continuously seeking ways to use all five acres of allotted land. For the **Clarfield Farm**, growth is in line with the demand for organic and locally produced fresh products.

Clarfield Farm in Columbus



The Urban Heat Island Effect, partially mitigated with the introduction of green space in the form of an urban farm or community garden. One of many ecological benefits.



Improves Soil Quality

Urban areas, for the most part, have heavily compacted soil that prevents storm water from infiltrating. Urban Agriculture allows soil to become more porous by tilling it or introducing earthworms. Storm water can penetrate the top layer of soil and pollution is removed as it replenishes aquifers. Urban Agriculture improves soil quality by returning nutrients, minerals, and biomaterials (1).

Reduces Urban Heat Island (UHI)

Urban areas tend to be hotter than suburban or rural environments. Urban areas have lots of solid surfaces such as buildings, roads and pavements that absorb sunrays and heat during the day. This is called the urban heat island effect. Vegetation doesn't conduct heat like hard surfaces do so introducing more vegetation in urban areas decreases the amount of heat generated. Trees and other plants on urban farms have a cooling effect. Urban farms help reduce the urban heat island effect in cities (2).

Reduces Emissions and Improves Air Quality

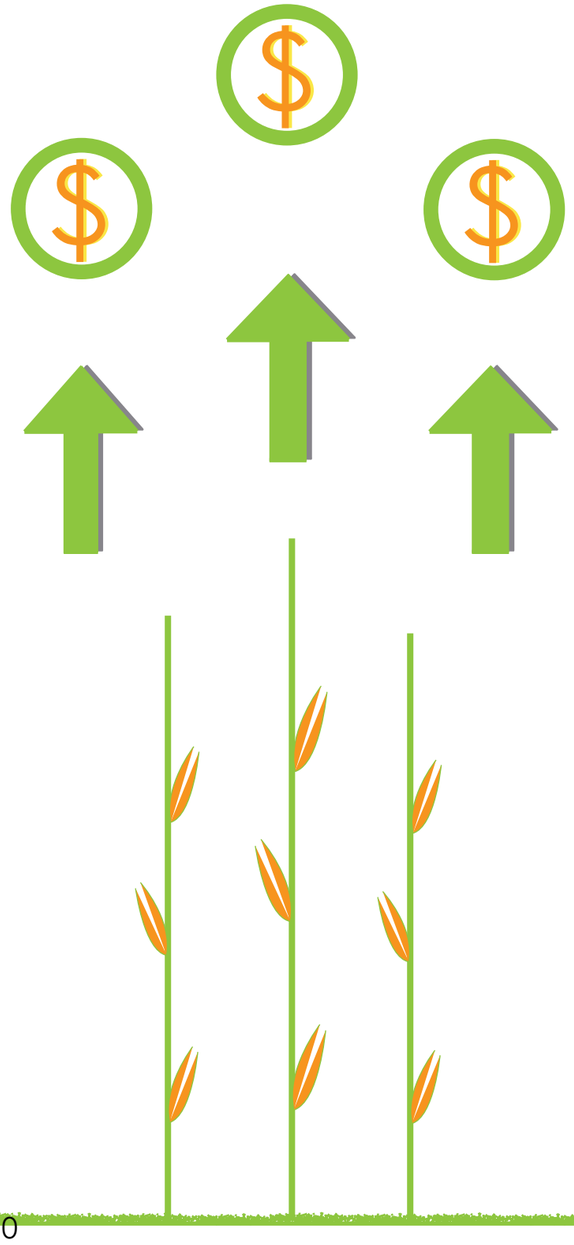
Food in the United States travels an average of 1,300 miles from farm to fork This results in greenhouse gas emissions and negatively impacts air quality. Such long-distance movements of food can be avoided when food is grown locally. Producing food locally reduces "food miles"(3)

Reduces Food Waste

Urban Agriculture provides an opportunity for household waste to be composted, reducing the overall amount of waste in the urban waster stream. Urban Agriculture is a closed-loop system. As compost is created, reducing food waste, this same waste is used to nourish and replensish the soil, providing better opportunities for plant growth.

(1) Bremer, A., Jenkins, K. & Kanter, D. (2003). Community Gardens in Milwaukee: Procedures for their long-term stability & their import to the city. Milwaukee: University of Wisconsin, Department of Urban Planning.
(2) Beatley, Timothy. 2000. Green Urbanism: Learning from European Cities. Washington D.C.: Island Press.
(3) Kloppenburg, Jack Jr., John Hendrickson and G. W. Stevenson.(1996) Coming Into the Foodshed. Agriculture and Human Values 13:3 (Summer): 33-42. http://www.wisc.edu/cias/pubs/comingin.PDF

BENEFITS OF URBAN AGRICULTURE: ECONOMIC



The Multiplier Effect

Shifting food production away from rural areas and into urban ones creates new economic opportunities for cities. The increase in locally produced food translates to an increase in demand for products and services related to food production and processing. This multiplier effect can serve as a revitalization tool for local economies (1).

Reduced Costs for Cities

The recent trend of turning vacant land bank properties into urban farms provides an opportunity for cities to save on maintenance costs. According to a report by a local advocacy group in San Francisco, community turning vacant lots into urban agriculture sites saved the Department of Public Works an estimated $4,100 per year (2).

Property Values & Employment

Additionally, turning vacant lots into urban farmland has been proven to do more than just save cities money and improve the aesthetics of an area; the presence of urban agriculture can increase the property values of homes nearby. Increased property values translate to an increase in tax revenue for the city. The presence of community gardens has been shown to raise property values in the surrounding area by as much as 9.4% within five years of their establishment; tax revenues were estimated at $500,000 per garden over twenty years (3). A similar study done in Cleveland concluded that the presence of urban farms in a neighborhood translates to a 3% increase in property values of homes within a 400-meter radius of the farm (4).

The presence of urban agriculture also provides employment and business incubation opportunities within the community. For example, community food projects funded by the USDA provided an estimated 2,300 jobs and incubated over 3,600 micro businesses between the years of 2005 and 2009 (5). Moreover, those same USDA community food projects trained a total of 35,000 workers in urban farming and related fields such as marketing and business management (5).

The Potential Local Multiplier Effect in Columbus: Food Processing

By zoning specifically for urban agriculture, the City will be creating a local economic multiplier effect, ushering in a host of new economic benefits and opportunities, not only for urban farmers, but also for those engaged in related fields. Abed AlShahal, co-owner of A&R Creative Group, a company opening and renovating a multitude of food-based businesses in Columbus, spoke to our cohort about the lack of local food processing facilities, particularly flash freezing (the best method of preserving the taste and vibrancy of produce) facilities, in the Columbus area. Al Shahal explained that there is currently no local option in the frozen food section of Columbus grocery stores due to the lack of food processing facilities. He noted that the fact that local flash freezing facilities are not in existence is a major limiting factor in how much local farmers produce. As the city makes itself more hospitable to urban agriculture and the popularity of urban agriculture increases, it can be expected that so will the demand for local food processing facilities and services, an industry that has much room for growth in the Columbus area. Al Shahal went on to say that from the viewpoint of a member of the food service industry, an added benefit of moving food production closer to the urban core would be that food establishments will have better access to fresh produce and would benefit greatly from being located in a city known for its locally grown food.

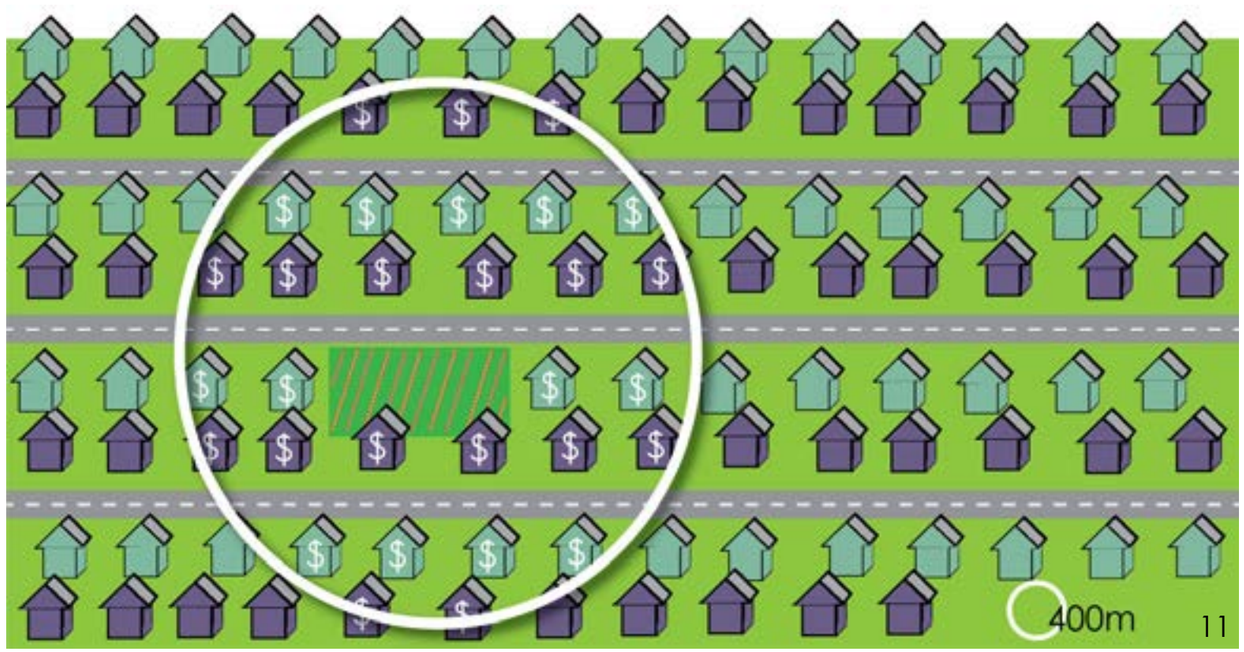
(1) Cheema, G. Shabbir., Jac Smit, Annu Ratta, and Joe Nasr. "Chapter 7: Benefits of Urban Agriculture." Urban Agriculture: Food, Jobs and Sustainable Cities. New York, NY: United Nations Development Programme, 1996. N. pag. Print.

(2)SPUR. (2012). Public Harvest. SPUR Report, 1–36.

(3) Voicu, I., & Been, V. (2008). The Effect of Community Gardens on Neighboring Property Values. Real Estate Economics, 36(2), 2414–2263.

(4) Shammin, M, Auch, W & Brylowski, L. Triple Bottom Line Analysis of Urban Agriculture as a Solution to Vacant Land Repurposing: A Case Study of Cleveland (White Paper prepared for the Cleveland Botanical Garden and the Great Lakes Protection Fund, 2012)

(5) Kobayashi, M., Tyson, L., & Abi-Nader, J. (2010). The Activities and Impacts of Community Food Projects 2005-2009, 1–28.



BENEFITS OF URBAN AGRICULTURE: HEALTH

Health benefits of Urban Agriculture are numerous. In this section, we focus on improvements of mental and physical health through increased activity, improved access to healthy foods and better diets.

Improves mental and physical health

Gardening offers emotional, mental and physical health benefits (1). By providing people an opportunity to socialize and relax, gardening reduces stress. Cultivation and gardening are often used by health professionals to improve self-esteem and help alleviate problems associated with mental illnesses. Community gardens and urban farms engage people in active work and provides people the opportunity to exercise outdoors. Exposure to sunlight for those working in urban farms helps lower their risks for certain diseases such as cardiovascular disease, common cancers, diabetes, and arthritis.

Improve Healthy Food Access

Urban agriculture improves access to locally grown fresh foods and reduces reliance on fast food options. Urban farms are often operated with the intent of sharing produce with local community members. Many farms are run by non-profit organizations and food is often shared among the community members and where it is needed most. The produce from urban farms serves as a healthy alternative to cheap fast food options that flood lower income areas and food deserts (i.e poorer neighborhoods without good quality grocery stores). Many people enjoy working on local gardens because they know the food being produced is helping out families in need.

Encourages Healthy Habits

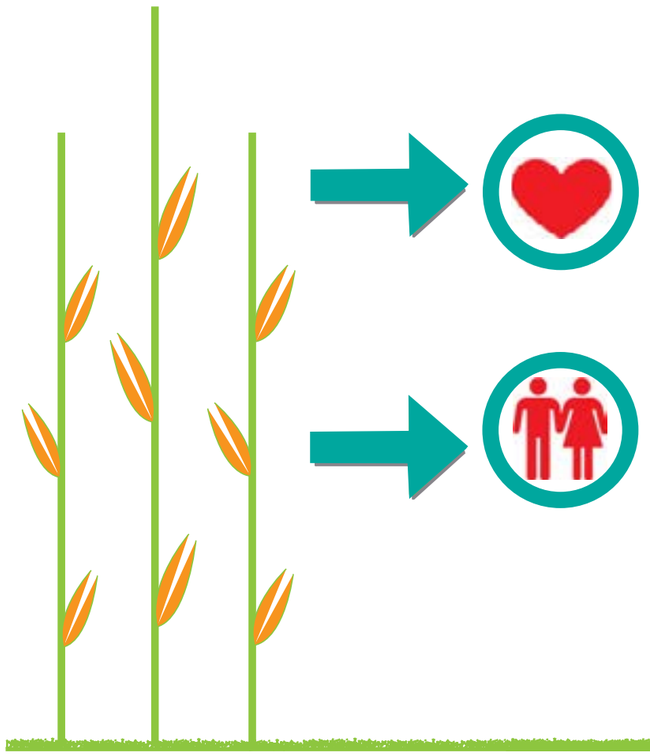
Spending time cultivating produce and gardening encourages healthy dietary habits. Vegetable and fruit consumption is higher among those who grow their own food. The more experience people have with healthy foods the more likely they will be to eat them. For some, fresh locally produced food is more attractive than store bought preserved vegetables and fruits. Well-tended community gardens and urban farms yield quality produce that is high in protein.

(1) Maller, C Townsend, M., Pryor, A., Brown, P., St. Leger, L. (2005). Healthy nature healthy people: 'contact with nature'as an upstream health promotion intervention for populations. Health Pro-motion International. 21(1).
(2) Pothukuchi, K. (2004). Community food assessment a first step in planning for community food security. Journal of Planning Education and Research, 23(4), 356-377.
(3) Alaimo, Katherine., Packnett, Elizabeth., Miles, Richard A., Kruger, Daniel J. (2008). Fruit and vegetable in-take among urban community gardeners. Journal of Education and Behavior 40:2, 94-101.

Success Story: Chadwick Horticultural Therapy Garden

Located on The Ohio State University's campus, the Chadwick Horticultural Therapy Garden exemplifies how urban agriculture can benefit people's health. Jenny Pope, prompted by her background in horticulture and social work, started the Chadwick Horticultural Therapy garden over eight years ago. The garden consists of eight raised beds and several plant containers. There are also two picnic tables designed for wheelchair bound people. The overall design of the garden accommodates those people with physical limitations. The different garden heights means that gardens can be worked by people both standing and sitting. The Therapy Garden is funded through the Chadwick Arboretum's annual May Plant Sale. It also has received funds from the Franklin Garden Club and donations from Scotts' and Lowe's.

The garden is run by volunteers. The therapists who come weekly to help the garden participants notice how their enthusiasm for gardening increases throughout six or 12-week programs. There are plenty of social interactions between participants and volunteers and among participants themselves during the program. The volunteers notice that when participants start the program, they do not interact easily with other participants, and keep to themselves. But as time goes on, these participants begin to feel more comfortable in the environment and around other people. Studies done by the National Institute of Health have shown that social relationships and interactions help decrease social insecurities and help the participants feel more confident in themselves and what they can do.



"Horticultural therapy, as defined by the American Horticultural Therapy Association, is "a process utilizing plants and horticulture activities to improve social, educational, psychological and physical adjustment of persons thus improving their body, mind, and spirit."

BENEFITS OF URBAN AGRICULTURE: SOCIAL

Social Benefits of Urban Agricutlure identify ways in which communities are positively impacted as people come together, build relationships and interact in positive ways with the built environment. The social benefits we focus on here include crime prevention, and improvment of social ties within city neighborhoods.

CRIME PREVENTION:

Scientific studies show that crime decreases in neighborhoods as the amount of green space increases, and that vegetation has a positive impact on mental help, helping reduce violent behavior (1).

Community gardens increase the number of safe spaces that were less likely to be vandalized or crime-ridden, especially for youth (2) Community gardening can be an effective community crime prevention strategy. In Philadelphia, burglaries and thefts in one precinct dropped by 90 percent after police helped residents clean up vacant lots and plant gardens. (3).

(1) Kuo, F. & Sullivan, W. (2001). Aggression and violence in the inner city: Impacts of environment via mental fatigue. Environment & Behavior, 33(4), 543-571.
(2)Sherer, P.M. (2006). The benefits of parks: Why America needs more city parks and open space. Retrieved October 15, 2014, from http://www.tpl.org
(3) Englander, D. (2001). New York's community gardens – A resource at risk. Retrieved October 15, 2014, from http://tpl.org

IMPROVING SOCIAL TIES:

Research has found that gardens and farms beautifies neighborhoods which, in return, creates local pride and attachment to the space within a neighborhood. These community spaces help build social ties among community members. Compared to residents living near desolate areas, those living closer to common green spaces are more likely to interact with neighbors as a result of using these spaces (4).

(4) Kuo, F., Sullivan, W., Coley, L, & Brunson, L. (1998). Fertile ground for community: Inner-city neighborhood common spaces. American Journal of Community Psychology, 26(6), 823-851.

"...buildings with a high level of vegetation that doesn't obscure view (such as most garden plants) had 52% fewer crimes than those with no landscaping. Buildings with medium levels of this type of vegetation had 42% fewer crimes."

See Kuo, F. & Sullivan, W. (2001b). Environment and crime in the inner city: Does vegetation reduce crime? Environment and Behavior, 33(3), 343-367.

CASE STUDIES:
INTRODUCTION

"Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, & they are tied to their country & wedded to its liberty & interests by the most lasting band's."

- Thomas Jefferson to John Jay, 23 Aug. 1785

Urban agriculture has broad impacts on communities including the provision of food to the city's urban poor, environmental benefits, and the stabilization of neighborhoods, particularly in America's rust belt cities. As we discussed earlier, urban agriculture contributes significantly to the local and regional economic sector and city society. It aids in the alleviation of food insecurity, promotes greening of the city, provides a productive re-use of abandoned properties, and most importantly can be an incubator for sustainable economic development. Today, in various cities across the United States, there is a growing awareness about the role that urban agriculture plays in helping to improve the urban environment. Cleveland and Detroit, for instance, have gained national reputations as centers for urban agriculture – a creative response to the sharp increase in vacant land caused by population loss and residential abandonment in these cities.

The rise of urban agriculture in the City of Austin, Texas has been spurred by passion for locally produced food. The city has been proactive in adapting existing urban agriculture regulations to accommodate farmers and gardeners.

Baltimore, which has a rich history of urban agriculture dating back to the 1890's, continues to play an innovative role. The city realized the tremendous potential for urban agriculture on vacant lots, and created a series of maps that analyze public vs. private owned vacant land suitable for farming.

Pittsburgh recently introduced urban farming regulations to help both large- and small-scale farming. There are a number of non-profit groups such as the Grow Pittsburgh and Burgh Bees to help those interesting in becoming urban farmers.

In December 2013, the City of Boston passed Article 89, a citywide zoning article that allows for commercial urban agriculture including rooftop farms and greenhouses. The city requires a Comprehensive Farm Review for all ground level farms over 10,000 square feet, along with most roof top farms and greenhouses.

In Chicago the reuse of abandoned buildings for urban farms has led to the establishment of the nation's largest indoor vertical farm that occupies 90,000 square feet of a formerly abandoned suburban warehouse.

The following section represents the findings on our study of the zoning regulations related to Urban Agriculture in the cities of Austin, Baltimore, Boston, Chicago, Cleveland, Detroit and Pittsburgh. Together these cities have taken bold steps to promote urban agriculture within their city limits. Through data collected by analyzing documents as well as through consulting and interviewing city officials and planners in these cities, we present a synthesis of their zoning codes and requirement regarding urban agriculture.

CASE STUDY: DETROIT

In 2010, 80,000 homes in Detroit were recorded as vacant. In 2012, a third of this land was city-owned through foreclosures. The land vacancy issue placed a huge economic burden on the City budget, as it was not producing any sort of taxes, and the city was responsible for its maintenance. Mike Score, president of Hantz farms, estimates that it costs the city $9 million per sqaure mile of vacant land per year In Detroit. If properties were maintained properly, it would cost the city $360 million, an amount their budget simply cannot withstand. In attempt to combat this issue, the urban agriculture ordinance was adopted in 2012. These issues are common among many rust-belt cities in the Midwest, and is often a goal of the adoption of urban agriculture policies.

Agricultural Land Uses in Detroit

● Conditional
■ Limited
▣ Restricted

	Urban Farm	Urban Garden	Hoophouse/Greenhouse	Aquaculture/Aquaponics
Residential				
R1 Single Family Residential	●	▣	●	
R2 Two- Family Residential	●	▣	●	
R3 Low Density Residential	●	▣	●	
R4 Thoroughfare Residential	▣	▣	▣	
R5 Medium Density Residential	▣	▣	▣	
R6 High Density Residential	▣	▣	▣	
Business				
B1 Restricted Business District	▣	▣	▣	
B2 Local Business and Residential District	▣	▣	▣	
B3 Shopping District	▣	▣	▣	
B4 General Business District	▣	▣	▣	●
B5 Major Business District	●	●	●	●
B6 General Services District	▣	▣	▣	▣
Industrial				
M1 Limited Industrial District	●	●	▣	▣
M2 Restricted Industrial District	●	●	▣	▣
M3 General Indust/Business District	●	●	▣	▣
M4 Intensive Industrial District	●	●	▣	▣
M5 Special Industrial District	●	●	▣	▣
Special Districts and Overlay				
PD Planned Development District	■	■	■	■
TM Transitional-Industrial District	●	●	▣	▣
SD1 Special Development District: Residential - Commerical	●	●	●	
SD2 Special Development District: Residential - Commerical	●	●		
SD3 Special Development District: Technology & Research	●		●	●
SD4 Special Development District: Riverfront Mixed-Use				●
SD5 Special Development District: Casinos				

**No agricultural uses permitted in P1, PC, PCA, PR, WI

Urban Farm:

"A zoning lot..., **over one acre**, used to grow and harvest food crops and/or non-food crops for personal or group use. An orchard or tree farm that is a principal use is considered an urban farm. An urban farm may be divided into plots for cultivation by one or more individuals and/ or groups or may be cultivated by individuals and/or groups collectively. The products of an urban farm may or may not be for commercial purposes."

Community Gardens:

"A zoning lot,..., **up to one acre of land**, used to grow and harvest food or non-food crops for personal or group use. The products of an urban garden may or may not be for commercial purposes."

Prohibited: Farm Animals, prohibited plant species, wheat, rye and oats (to prevent rodents).

Sale of Products: Farm stands permitted as accesory use on the same property where food is grown. Product may also be sold at farmers markets or directly to public or private entities, both as retail or wholesale.

Accessory Uses/ Structures: Greenhouses, Farm stands, Hoophouses or high tunnels, signs, aquaculture, aquaponics, hydroponics, barns, tool sheds and shade pavillions, structures for cold storage and processing, signs, benches, bike racks, raised beds, compost bins, picnic tables, garden art, rainwater catchment systems.

What's Unique about Detroit?: There are very specific submittal requirements for all those wishing to engage in urban agriculture in the city of Detroit. These submittal requirements are outlined in the zoning ordinance that was approved by the city in 2013 and include, among other things, a description of the existing conditions of the site, a site plan that details where crops will be cultivated, compost located, fencing, setbacks, the type of machinery that will be used. All applicants must include the use of stormwater and soil erosion plans and techiques as well as indicate the types and application of the any pesticides or other chemicals that may be used on site. As Columbus begins to think about zoning for urban agriculture, it is important to recognize that many activities may be regulated as pursuant in the zoning ordinance.

Access Full Code HERE

Hantz Farms of Detroit

A large portion of residential land in Detroit has become city-owned within the last twenty years , placing an added burden on the city and its limited budget. Hantz Farms and Hantz Woodlands is an urban agriculture project specifically targeting the removal of blight from residential neighborhoods in Detroit. Hantz Farm purchases land from the City and plants rows of maple, oak and other high value trees in areas where there was once an abandoned house or vacant property. In doing so, they are taking over all property maintenance, contributing to the tax base by paying property taxes, and removing blighted properties from neighborhoods and communities. The project is funded by their parent company, Hantz Group. Eventually, they expect the venture to be self-sustaining, as the sale of trees become a primary source of revenue and profit. In May of 2014, Hantz Farms planted 15,000 trees, with the help of 1,400 volunteers on Detroits East Side. Twenty acres of vacant land now are covered with various species of deciduous trees. Ultimately, Hantz Farms hopes to convert 150 acres of vacant properties around the city into productive land. When possible, the land will remain open to the public to use recreationally, providing an additional social benefit.
See:http://www.hantzfarmsdetroit.com/

CASE STUDY: CHICAGO

In 2001, the City of Chicago began looking for ways to encourage urban agriculture. City officials recognized the potential for urban agriculture to act as a community development tool as well as a teaching tool. In 2011, city officials adopted a revision to the zoning code that made urban agriculture a permitted use within city limits. According to city officials, the revision was an attempt to make the city a safer, healthier place and to provide a sense of legitimacy and permanency for farmers and gardeners alike. In addition to revising the zoning code, the City partnered with many local groups to convert formerly vacant, city-owned property to urban farms and adopted 'A Recipe for Healthy Places' (2013), a citywide plan that seeks to foster business entrepreneurship, job growth, gardening, and other spin-off benefits that help to strengthen the local food system and make Chicago a healthier place to live and work.

Agricultural Land Uses in Chicago

● Permitted Us
■ Special Use
□ Not Allowed

		Indoor Farms	Outdoor Farms	Rooftop Farms	Aquaculture	Community Gardens
Residential						
RS	Residential Single-Unit Districts	□	●	□	□	●
RT	Residential Two-Unit Districts	□	●	□	□	●
RM	Residential Multi-Unit Districts	□	●	□	□	●
Business/Commercial						
B1	Neighborhood Shopping Districts	□	□	□	□	●
B2	Neighborhood Mixed-Use Districts	□	□	□	□	●
B3	Community Shopping Districts	●	□	■	●	●
C1	Neighborhood Commercial Districts	●	●	●	●	●
C2	Motor Vehicle-Related Districts	●	●	●	●	●
C3	Commercial, Manufacturing, Employment Districts	●	●	●	●	●
Manufacturing						
M1	Limited Manufacting/Business Park Districts	●	□	●	●	□
M2	Light Industry Districts	●	●	●	●	□
M3	Heavy Industry Districts	●	●	●	●	□
Special Districts						
DC	Downtown Core Districts	□	□	●	□	●
DX	Downtown Mixed-Use Districts	□	□	●	□	●
DR	Downtown Residential Districts	□	□	●	□	●
DS	Downtown Service Districts	●	●	●	●	●
POS1	Regional or Community Park	□	□	□	□	●
POS2	Neighborhood, Mini Park or Playlot	□	□	□	□	●
POS3	Open Space or Natural Area	□	□	□	□	□
POS4	Cemeteries	□	□	□	□	□
PMD	Planned Manufacturing Districts	●	■	●	●	□
PD	Planned Devevlopments	□	□	□	□	□
T	Transportation District	□	□	□	□	□

Urban Farm: **Urban Farm:** Growing, washing, packaging and storage of fruits, vegetables and other plant products for wholesale or retail sales.

1. Indoor Operation
All allowed activities must be conducted within completely enclosed buildings. Typical operations include greenhouses, vertical farming, hydroponic systems and aquaponic systems.

2. Outdoor Operation
Allowed activities are conducted in unenclosed areas or partially enclosed structures. May include indoor operations in conjunction with outdoor operations. Typical operations include growing beds, growing fields, hoophouses and orchards.

3. Rooftop Operation
All allowed activities occur on the roof of a principal building as a principal use or accessory use. Typical operations include growing beds and growing trays.

Community Gardens:
"A neighborhood-based development with the primary purpose of providing space for members of the community to grow plants for beautification, education, recreation, community distribution or personal use. Sites managed by public or civic entities, nonprofit organizations or other community-based organizations that are responsible for maintenance and operations."

Prohibited: Composting materials generated off-site

Sale of Products: Sales are allowed on-site as long as what is being sold was produced on-site (restrictions often placed on size of sale ex. no more than 3,000sqft)

Accessory Uses/ Structures: Aquaculture, bees, farm stands, composting, hoophouses, greenhouses, sheds.

What's Unique about Chicago?: Under Chicago's Urban Agriculture Ordinance, Hoophouses and other fabric based structures that do not require building permits, are not considered accessory buildings. Most other cities require consider hoophouses to be accessory structures and factor their existence into the total amount of impervious surface on a lot.
Another unique facet of urban agriculture in the city of Chicago, is that using under utilized or vacant buildings to house urban farms is not uncommon. The City is home to FarmHere, the nation's largest indoor vertical farm, which occupies 90,000 square feet of a formerly abandoned suburban Chicago warehouse.

Access full code HERE

"One way the City can assist [urban farms], is by making land available for use. For example, the *Green Healthy Neighborhoods* plan identifies three urban agriculture districts in the Greater Englewood area (South Side of Chicago). The city has identified and tested several vacant lots and the plan is to make them available for urban farmers. Tax increment financing funds have been used for environmental cleanup and construction costs to build urban farms."

"The City of Chicago has partnered with local nonprofits and other organizations to develop urban farms on formerly vacant city-owned property. Without the zoning rules in place we would not have been able to devote resources into these projects. Likewise, the zoning rules provide a sense of legitimacy and permanency to farmers and gardeners."

Bradley Roback
Economic Development Coordinator
City of Chicago

CASE STUDY: BALTIMORE

The City of Baltimore, a city with a population of 622,104, has created the initiative Homegrown Baltimore with the goal of increasing the production, sales, distribution, and consumption of locally grown food from within the city. This initiative is focused on creating a strong local food system that offers equal access to healthy foods for all citizens; supporting Baltimore's farmers, gardeners, and businesses; endorsing environmental sustainability; and utilizing vacant land with a productive use. The three objectives of this urban agriculture program can be summarized as *'Grow Local, Buy Local, and Eat Local'*.

Agricultural Land Uses in Baltimore

● Conditional
■ Limited
□ Prohibited

	Urban Agriculture	Community Managed Open Space
Residential		
Single-Family Residential	●	■
Multi-Family Residential	●	■
Commercial/Office	●	■
Industrial		
Office-Industrial Campus	■	■
Bio-Science Campus	■	■
Industrial Mixed-Use	■	■
Light Industrial	■	□
Heavy Industrial	■	□
Maritime Industrial	□	□
Open Space	●	■

Urban Farm:
"The cultivation, processing, and marketing of food, with a primary emphasis on operating as a business enterprise for income generation. It includes animal husbandry; aquaculture; agro-forestry; vineyards and wineries; and horticulture. It might involve the use of intensive production methods; structures for extended growing seasons; on-site sale of produce; and composting."

Access Full Code HERE

Community Gardens:
Community Managed Open Space:
An open-space area that is maintained by more than one household and is used either for the cultivation of fruits, flowers, vegetables or ornamental plants, or as a community gathering space for passive or active recreation

Prohibited: Roosters

Accessory Uses/ Structures: Greenhouses, farmstands, shade pavilions, sheds, barns, toilet facilities, post-harvest processing facilities, hoophouses or high tunnels, cold frames, fencing, lighting, animal husbandry, apiaries, orchards, hops farms, herb farms, vineyards, aquaponics, hydroponics, beehives, and composting.

What's Unique about Baltimore?: Homegrown Baltimore has mapped and analyzed all of the vacant land in the city and found that as a result of its population decline in the last half century, they have an estimated 30,000 vacant properties (of which 14,000 are vacant lots). Baltimore realized the tremendous potential for urban agriculture on these vacant lots and determined which of these lots would be best suitable for agriculture. They created a series of maps that analyze public vs. private owned vacant land (excluding land use zones where urban agriculture would be prohibited) and over-layed that with the food deserts.The plan also determined five barriers (land, water, soil, capital, and agency support) preventing urban agriculture from taking a stronger foothold in the city. The plan provides recommendations and strategies in great detail to lessen the impact of these barriers.

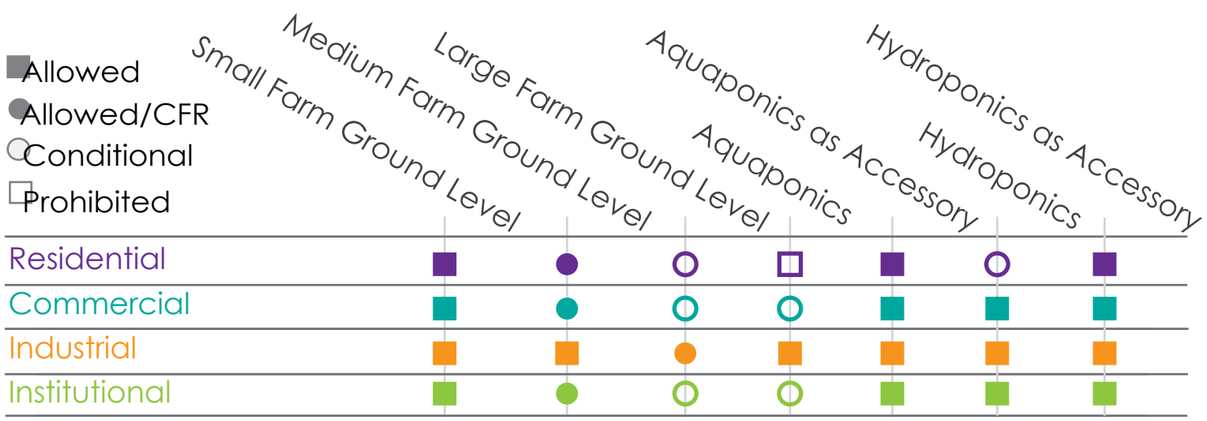
Hoophouse in Baltimore

Baltimore City's plan for urban agriculture has a number of policy recommendations to help with land, water, soil, capital and agency support. Some of these recommendations include developing soils standards, support the development of rain water capture, developing automatic notification of licensing renewal, improving land leasing options and offering suport incentives to for gardens and farms on privately-owned vacant land.

CASE STUDY: BOSTON

In 1890 with an economic depression inevitable, the City of Boston set aside vacant lands for individuals for local food production. During WWI and WWII, community gardening resurfaced in Boston and the gardens produced became known as "victory gardens." They provided food for local consumption since most commercial food production was sent overseas to the war effort. The Richard D. Parker Memorial Victory Gardens in Boston is a well-renowned victory garden left from the WWII era. Today, Boston, through its recent urban agriculture intitiatives, aims to improve access to fresh, healthy, affordable food to city residents while decreasing carbon emissions and transportation costs. City officials hope that through this effort, communities will be brought together and help enliven forgotten spaces in Boston. Recently, the city named July 11, 2014 as Urban Agriculture Day.

Agricultural Land Uses in Boston



Higher Ground Farm (left) is an impressive example of utilizing unused space within Boston. Located on top of the Boston Design Center, the space encompasses 55,000 square feet and grows an assortment of greens, herbs, tomatoes, and other crops.

Credit:http://www.highergroun-drooftopfarm.com/

Urban Agriculture:

"...the use of a lot for the cultivation of food and/or horticultural crops, Composting, Aquaponics, Aquaculture and/or Hydroponics. Such use may include the Accessory Keeping of Animals or Bees where Allowed by Underlying Zoning."

Ground			Roof			Vertical
Small	Medium	Large	Small	Medium	Large	"...an exterior building wall or other vertical structure designed to support the growing of agricultural or horticultural crops."
Farm Area less than 10,000 ft²	Farm Area between 10,000 ft² and one (1) acre	Farm Area greater than one (1) acre	Farm Area less than 5,000 ft²	Farm Area between 5,000 ft² and one (1) acre	Farm Area greater than one (1) acre	

Prohibited: Roosters

Sale of Products: Farm stands are allowed for produce sales as long as the floor area does not exceed 200 square feet. Produce may also be sold to stores, restaurants, and at any of the 28 farmers' markets in the city.

Accessory Uses/ Structures: Composting, loading and disposal areas, fencing, walls, natural landscaping, lighting, greenhouses, hoop houses, coldframes, farm stands, aquaponics, hydroponics, sheds, shade pavilions, signs, bee hives, chicken coops, and freight containers.

What's Unique about Boston?: In December 2013, Boston adopted its zoning ordinance referred to as Article 89. to engage in urban agricutlure it is necessary to complete a **Comprehensive Farm Review (CFR)** for all ground level farms over 10,000 square feet, along with most roof top farms and greenhouses. The review takes 45 days and during this time, neighboring properties to a proposed urban farm site have a chance to comment on the proposed project. The CFR is conducted by Boston Redevelopment Authority and the Authority works with the farmers to make sure the farm will be a good neighbor and will operate with the neighborhood in mind. Farms in industrial districts require a less intensive review than a rooftop farm or greenhouses located in residential areas. Aspects of the farms review includes a the site plan that includes plans for lighting, signage and materials. Boston has a nice handy booklet called Article 89 made east that explains all aspects of the zoning code. See: http://www.cityofboston.gov/images_documents/usersguide_july-1_tcm3-45895.pdf

Access Full Code HERE

CASE STUDY: PITTSBURGH

In February of 2011, Pittsburgh City Council passed its first zoning code for Urban Agriculture. It was a collaboration between Pittsburgh's City Council and Planning Department. They constructed a code that gave Urban Farmers legal protection, and was designed to promote fairness between Urban Agriculture enthusiasts and city residents at large. Vacant lots were one of the main concerns that influenced the City Council to pass new Urban Agriculture code.

Agricultural Land Uses in Pittsburgh

- ■ Administrators Exception
- □ Special Exception
- ▨ Either Administrators or Special Exception, depending on case

		Agriculture (Limited)	Agriculture Use(General Use)	Agriculture (Limited) with Beekeeping
Residential				
R1D	Single-Unit Detached Residential	■	▨	□
R1A	Single-Unit Attached Residential	■	▨	□
R2	Two-Unit Residential	■	▨	□
R3	Three-Unit Residential	■	▨	□
RM	Multi-Unit Residential	■	▨	□
Mixed Use				
NDO	Neighborhood Office District			
LNC	Local Neighborhood Commercial District			
NDI	Neighborhood Industrial District			
UNC	Urban Neighborhood Commercial District			
HC	Highway Commercial District			
GI	General Industrial District	■	□	□
UI	Urban Industrial District	■	□	□
Special				
P	Park District	■	□	□
H	Hillside District	■	□	□
EMI	Educational/ Medical Institution District			
Downtown				
GT	Golden Triangle			
DR	Downtown Riverfront			

1. Agriculture Limited	2. Agriculture (Limited) with Beekeeping	3. Agriculture (General)
"the growing of crops for commercial use."	"the growing of crops and raising of honey bees for domestic and commercial uses."	"the growing of crops and raising of livestock and domestic small farm animals for domestic and commercial uses. The minimum lot size required is 3 acres."

Sale of Products: The growing and selling of food on a property is allowable once a permit for the Urban Agriculture (Limited) use is obtained.

Accessory Uses/ Structures: Composting, loading and disposal areas, fencing, walls, natural landscaping, lighting, greenhouses, hoop houses, coldframes, farm stands, aquaponics, hydroponics, sheds, shade pavilions, signs, bee hives, chicken coops, and freight containers.

What's Unique about Pittsburgh?: The keeping of poultry birds, livestock, and domestic small farm animals is an allowed accessory use. The lot-size and barrier requirements for beehives and chickens are a minimum of two-thousand (2,000) square feet in size. With that the property owner is permitted to keep two (2) beehives and/ or three (3) poultry chickens. For every additional two-thousand (2,000) square feet of property, the owner is permitted two (2) additional beehive. For every additional one-thousand (1,000) square feet of property, the owner is permitted one (1) additional poultry bird. Most importantly, the keeping of poultry birds or honeybees is permitted only where there is an occupied residence. This ensures that there is someone responsible for the care of all animals and bees.

Grow Pittsburgh is a nonprofit organization that has taken the initiative to teach the general public how to grow their own food. They were established in 2005 by three urban farmers who believed that the City of Pittsburgh was in need of an urban agriculture organization. Several prominent urban farms have been established in Pittsburgh from the creation of this organization. While the Zoning code allows Urban Farming, this organization is widely promoting the benefits and functions of starting or operating an urban farm.

"Resource Locator." Grow Pittsburgh. Grow Pittsburgh, 2012. Web. 04 Dec. 2014. <http://www.growpittsburgh.org/start-a-garden/resource-locator/>.

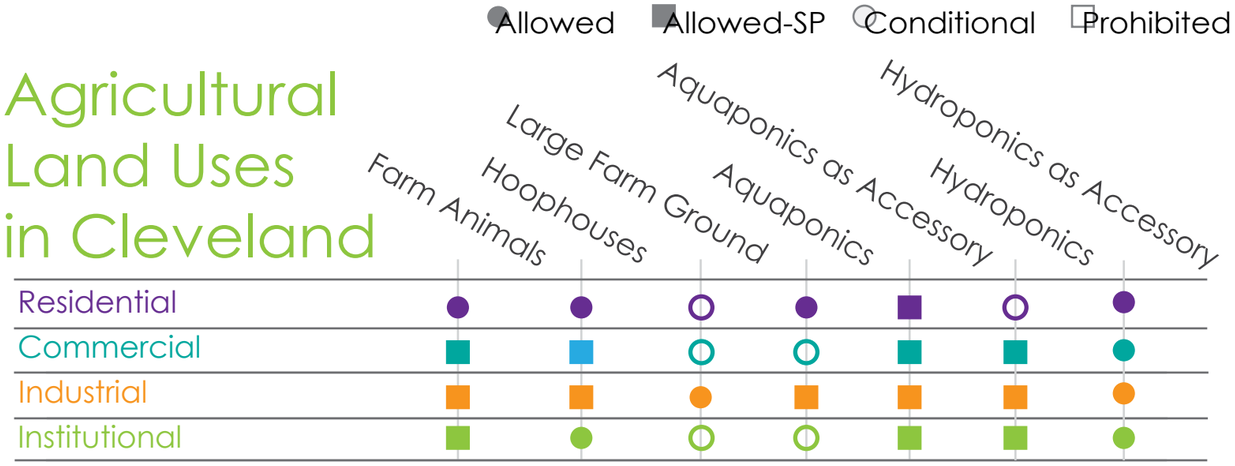
GROW PITTSBURGH

Access Full Code HERE

CASE STUDY: CLEVELAND

The history of urban agriculture in Cleveland originates in the 1930s during the Great Depression when the first of the urban gardens known as "Relief Gardens" were created to help feed local families. These gardens continued through WWII as Victory Gardens. During the 1990s community gardening reemerged with farming as a new trend to promote local economic growth and healthy living. Today, in Cleveland, urban agriculture is a growing business that is mostly being used as a tool to combat the problem of land abandonment. Cleveland is on the cutting edge of urban agriculture, and has established well-conceived urban agriculture land use policies and practices. They first introduced urban agriculture zoning regulations in 2007.

Agricultural Land Uses in Cleveland



Ohio City Farm in Cleveland

Urban Farm:

"A parcel of land or multiple contiguous parcels of land managed and maintained by an individual or group of individuals to grow and harvest food crops and/or non-food, ornamental crops, such as flowers, to be sold for profit."

Community Gardens:

"An area of land managed and maintained by a group of individuals to grow and harvest food crops and/or non-food, ornamental crops, such as flowers, for personal or group use, consumption or donation. Community gardens may be divided into separate plots for cultivation by one (1) or more individuals or may be farmed collectively by members of the group and may include common areas maintained and used by group members."

Prohibited: Africanized Bees

Sale of Products: The growing and selling of food on a piece of property is allowable once a permit for the Urban Agriculture (Limited) use is obtained.

Accessory Uses/ Structures: Greenhouses, hoop-houses, cold-frames, and similar structures used to extend the growing signs, benches, bike racks, raised/accessible planting beds, compost bins, picnic tables, seasonal farm stands, fences, garden art, rain barrel systems, chicken coops, beehives, and children's play areas; tool sheds, shade pavilions, barns, rest-room facilities with composting toilets, and planting preparation houses

What's Unique about Cleveland?: In 2007 The "Urban Garden District" was established as part of the Cleveland zoning code to ensure that urban garden areas are appropriately located and protected to meet the needs of local residents. Today the draft of an Urban Agriculture Overlay District Code (Chapter 336A) lies pending before the Cleveland City Council. The 2007 "Urban Garden District" code allows land to be zoned exclusively for urban gardens, while the proposed "Urban Agriculture Overlay District" would allow for more intensive large scale farms throughout the city. Together both of these codes strive to create a city of vibrant urban neighborhoods with mixed use districts and live work spaces that attract creative and entrepreneurial individuals from across the region, and the nation to a city connected by greenways, complemented by urban gardens, productive urban farms, and open space amenities. To spur this development the city has developed programs such as summer sprout, a CDBG program that assist community gardeners on Land Bank Lots, and the city land bank rules were changed to allow for a 5 year lease for community gardens.

Access Overlay Zoning Code HERE

Ohio State University researchers Sharanbir and Parwinder Grewal conducted a study to determine if Cleveland could achieve self-reliance in the provision of several key foods. In this city of ~400,000, there are more than 18,000 vacant lots, or about 3,500 acres of vacant land. The study focused on foods suited to urban production: vegetables, fruits, chickens, and honey. The study concludes that if 78 percent of available vacant land, 7.2 percent of every occupied residential parcel, and industrial or commercial rooftops were utilized, Cleveland could provide 46-100 percent of produce, 94 percent of poultry and eggs, and 100 percent of honey. This assumes preservation of produce for winter months and six chickens per city parcel as stipulated by the city's zoning legislation. The authors also estimate that "enhanced food self-reliance would result in $29 million to $115 million being retained in Cleveland."

CASE STUDY: AUSTIN

The rise of urban agriculture in the City of Austin, Texas has been spurred by passion for locally produced food. Unlike other northern, Midwest cities that have a surplus of vacant property, Austin is a growing city in a warm climate. As the city's population continues to rise and the economy continues to grow, urban agriculture is slowly being woven throughout the city. Known for its progressive nature, Austin is an ideal place of urban agriculture. The warm climate allows urban agriculture to be a great outdoor recreational activity for gardeners and farmers year round.

Agricultural Land Uses in Austin, TX

● Permitted
□ Not Permitted

		Urban Farm & Community Garden	Indoor Crop Production	Horticulture and Support Housing	Animal/Crop Production,
Residential					
RR	Rural Residence	●	□	□	
SF	All Single Family Residential	●	□	□	
MF	All Multi-Family Residential	●	□	□	
MH	Mobile Home Residence	●	□	□	
LA	Austin Lake Residence	●	□	□	
PUD	Planned Unit Development	●	●	□	
Business					
LO/GO	Limited Office/General Office	●	□	□	
CBD	Central Business District	●	□	□	
DMU	Downtown Mixed Use	●	□	□	
CS	General Commercial Services	●	●	□	
GR	Community Commercial	●	□	□	
CR	Commercial Recreation	●	□	□	
Industrial					
W/LO	Warehouse Limited Office	●	□	□	
IP	Industrial Park	●	●	□	
MI	Major Industry	●	●	□	
LI	Limited Industrial Services	●	●	□	
R&D	Research and Development	●	□	□	
Special Districts and Overlay					
AG	Agriculture	●	●	●	
P	Public	●	□	□	
TOD	Transit Oriented Development	●	□	□	
TND	Traditional Neighborhood District	●	□	□	
AV	Aviation District	●	□	□	

Urban Farm:

"...the use of a site that can consist of multiple contiguous parcels that is at least one acre in size cultivated primarily for the sustainable production of agricultural products to be sold for profit and may provide agricultural education activities. Agricultural education activities include volunteer programs, farm tours, youth programs and farming classes."

Community Gardens:

"...the use of a site for growing or harvesting food crops or ornamental crops on an agricultural basis, by a group of individuals for personal or group use, consumption or donation."

Prohibited: Farms under 1-acre and over 5-acres in size (must be in-between), raising livestock, selling produce onsite at community gardens.

Sale of Products: Agriculture produced products may be sold locally and commercially directly from the site of urban farms. However, sales are not permitted onsite at community gardens. Rather, the produce is used for personal use or on a donation basis.

Accessory Uses/ Structures: Raising, slaughtering, processing and composting of fowl and rabbits (with certain restrictions), aquaponic systems, composting (with certain restrictions), market stands for urban farms.

What's Unique about Austin?: "In 2009, Austin City Council created the Sustainable Urban Agriculture and Community Garden Program (SUACG) in order to establish a single point of contact and streamline the process for establishing community gardens and sustainable urban agriculture on city land. SUACG seeks to connect the dots between all the efforts that make up Austin's local food system, building partnerships around local food production and food security. Their broader goals include providing leadership, education, policy analysis, and project development support for the City of Austin's community-based food system."

"Benefits of Community Gardens." Austin Grows. N.p., n.d. Web. 10 Nov. 2014.


http://www.boggycreekfarm.com


http://www.boggycreekfarm.com


http://www.boggycreekfarm.com

Access More Information HERE

COLUMBUS: WHY WILL IT WORK?

In the upcoming sections, we outline proposed zoning regulations for urban agriculture in Columbus. These regulations aim to promote urban agriculture with added intentions of building the food economy, strengthening the local food system, encouraging community and environmental health, and stabilizing neighborhoods through the reuse of abandoned sites.

By zoning specifically for urban agriculture, we believe the City of Columbus will usher in a host of economic benefits and opportunities not only for urban farmers but also for those engaged in such related businesses as restaurants, and food processing and distribution plants. In Ohio, our main crops (about 70%) are corn, soy, and other grains, none of which are for immediate human consumption. USDA spending estimates that the 2 million people in the 12 counties of central Ohio spend $7.5 billion per year on food, this leaves a huge gap between capabilities of the land to produce and who/what it is producing. Capturing that gap is foreseeable by producing food for local markets. And preserving diversity in fruits and vegetables could yield up to $100,000 per acre in sales (1).

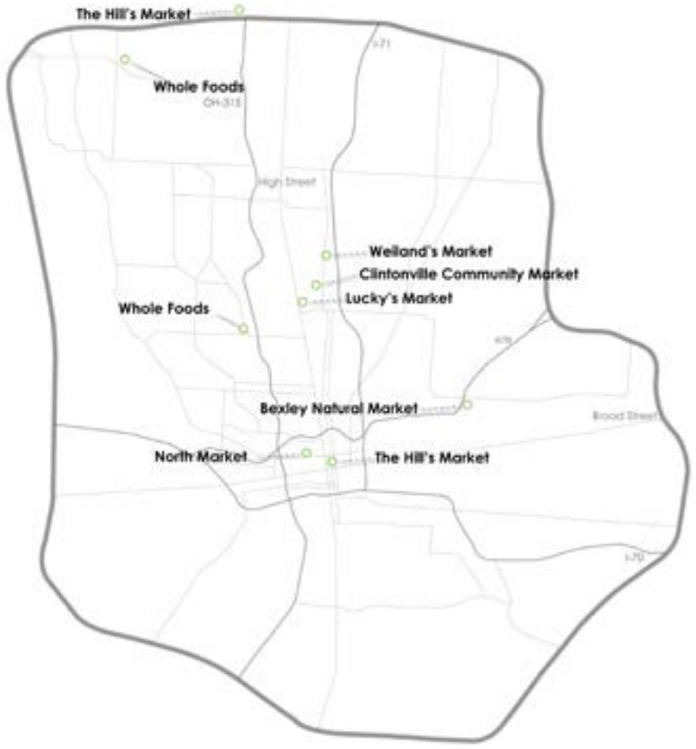
Urban agriculture is a partial solution to the problems of vacant land and lack of access to healthy food in poorer neighborhoods. In this report, we outline the food deserts – neighborhoods that are low-income and lack large grocery stores with healthy food options - in the city of Columbus. Many of these neighborhoods have vacant sites that can be reused for growing vegetables and fruit for local residents. There are a number of community gardens in the city that offer nutritious food for individual consumption and to nearby neighbors. This zoning resolutions provides guidance to these already existing community gardens as well as helps future gardeners understand the regulations around food production and beautification in their neighborhoods.

Farming and gardening within in the city boundaries opens up new possibilities for local commerce and civic pride. It is an important step toward increasing the sustainability and resiliency of cities. This zoning code for urban agriculture offers the city a tool to use to promote and acknowledgement the growing trend toward local food production, distribution and processing.

1. MORPC, and the Columbus Foundation. "Central Ohio Local Food Assessment and Plan." MORPC, Apr. 2010. Web. Dec. 2014.

Locally Sourced Restaurants:

Locally Sourced Grocery Stores/Markets:



COLUMBUS: WHY WILL IT WORK?

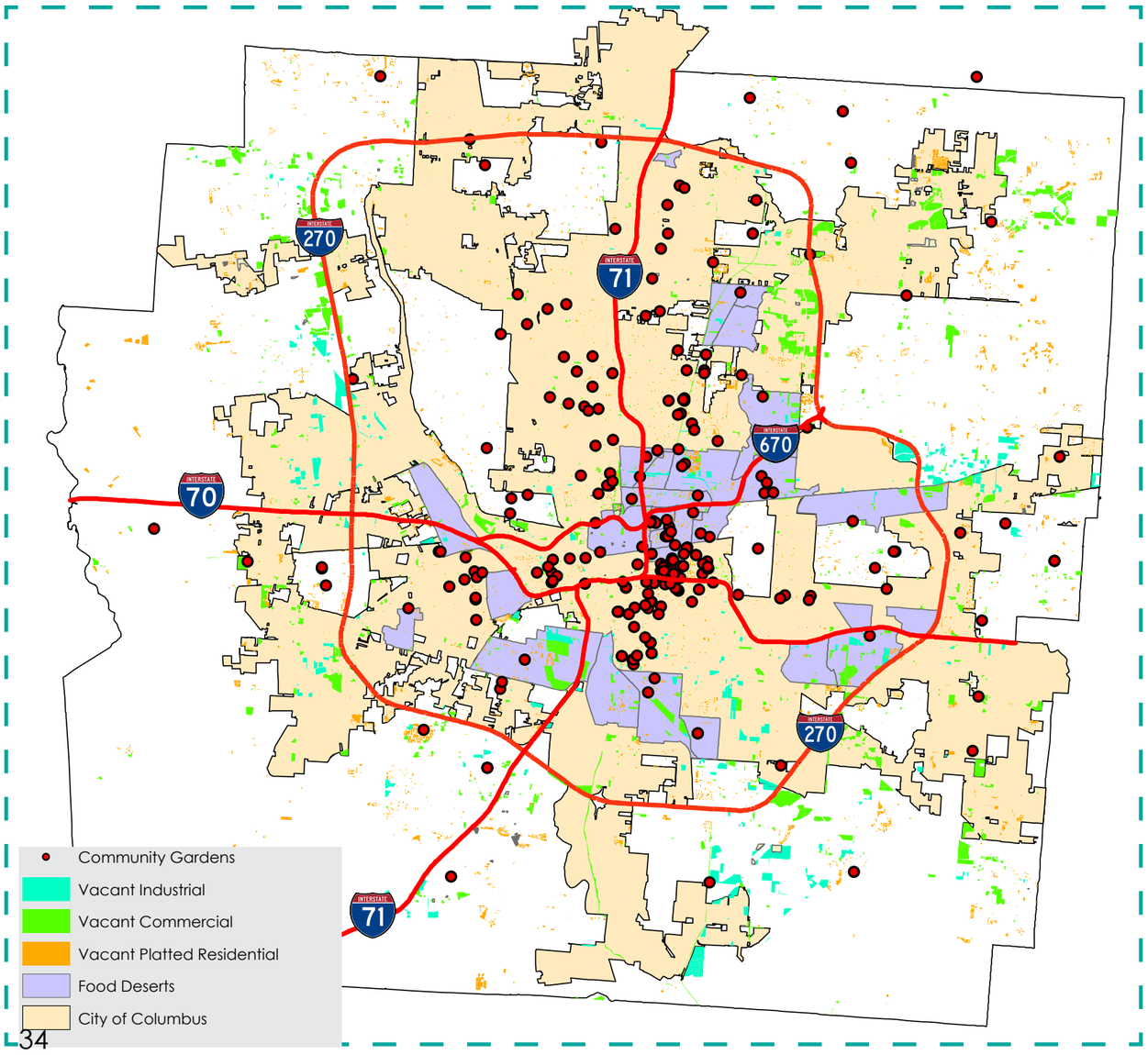
Columbus already has a very well established local food culture. Countless restaurants take pride in sourcing and serving locally produced fruits, vegetables and meat products. This map includes merely a fraction of the restaurants within the city boundaries that cite using locally sourced products in their mission statements or on their menus. Many are found within downtown and neighboring areas, but Columbus suburbs are similarly inclined. This list would become even lengthier if the ever-growing food truck industry was included.

Fueled by the passion of Columbus residents to eat local and support the food economy, there already exists a great number of grocery stores and markets throughout the city who actively work to stock local products, when possible. The map is certainly not exhaustive, and does not include the large efforts of big box grocery stores like Kroger and Giant Eagle to stock their shelves with Ohio-grown fruits and vegetables. Urban Agriculture becomes much more feasible when it is supported by a strong food infrastructure system, as it is in Columbus.

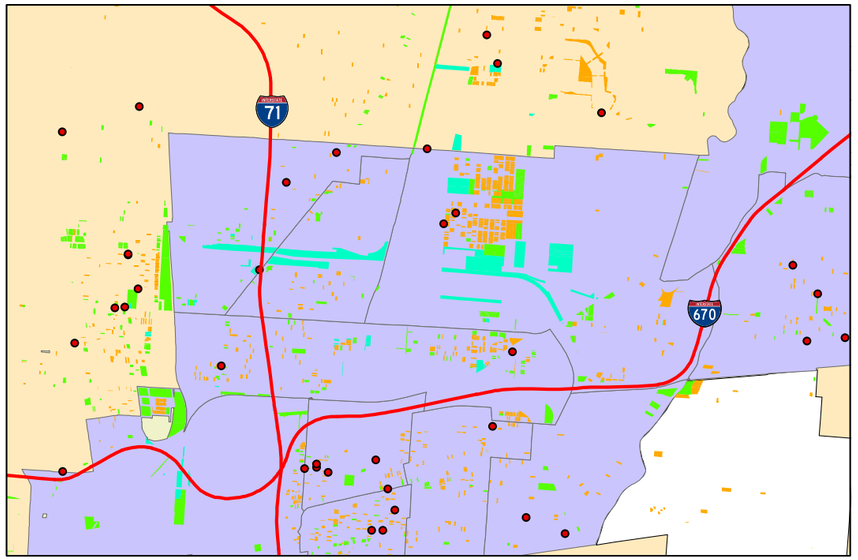
COLUMBUS: WHERE WILL IT WORK?

Columbus would benefit greatly from implementing urban farms within its city limits. Plots of vacant land throughout the city and county are ripe for agricultural production and can assist in alleviating the problem of poor access to healthy foods in some neighborhoods in the city. Below, a map displays where food deserts are located and where the vacant land is available. Turning these vacant lots into farms will help provide healthy food in these communities

Food Deserts and Vacant Land

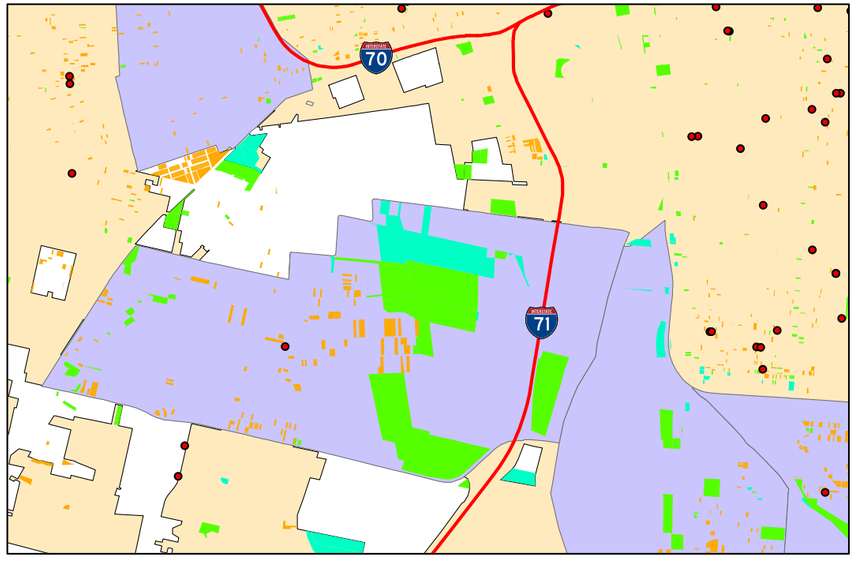


Milo-Grogan:



Data gained from the Franklin County Auditor's Office, the USDA, ODOT, and the Columbus Land Bank.

Southwest Columbus:



The maps to the left show two specific neighborhoods in Columbus where healthy food availability currently is an issue. These maps also include the vacant land within each neighborhood. Also shown are the locations of community gardens to help in displaying where local food production at a smaller scale is already occuring. Several large plots of industrial and residential land is available in the Milo-Grogan neighborhood and could serve as viable urban farms once reviewed, for soil suitability and other concerns. In the Southeast Columbus region, very large parcels of commerical land are available and can serve as locations for several farms due to their large size. Community gardens are sparse in the area which grants more reason for implementing a farm in the neighborhood. We believe these two communities are the ones who would benefit the greatest from urban farm ing and would be the most profitable areas for an urban farmer to begin production.

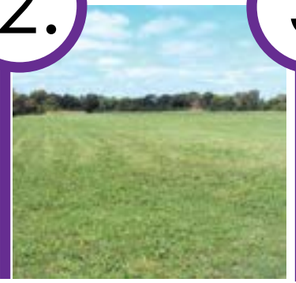
SUITABLE SITES: CRITERIA

Urban farms must be economically feasible if they are to remain succesful, long-lasting stakeholders in a community. In order to do so, production levels must be high enough to generate revenue and eventually profits. Not all urban land is suited for this type of operation. This issue of site suitability must be carefully considered by urban farmers. A given property must meet several criteria if an urban farm is to be a viable business venture. Healthy soils, relatively flat land, an appropriate amount of sunlight and access to water are a few of these criteria, and are explored below.

1. HEALTHY SOIL

Oftentimes vacant lots in urban environments were previously built upon, and may have remnants of contaminants leftover in the soil. Testing for dangerous chemicals, like lead from paints, nutrient deficiency, or poor soil types could make the difference between a succesful farming operation and a failed one.

2. FLAT LAND



For succesful plant growth, the slope of the property must be below a certain level. Slope levels above 10% may be prohibitive for many plants varieties. Slope between 0% and 5% is ideal. Some variation in topography is helpful for on site water collection.

3. SUNLIGHT

In urban settings, access to sunlight must be carefully considered. Large, tall buildings located adjacent to potential food production sites oftentimes block the sunlight neccessary for successful plant growth. Taking the angle of the sun into account at varying times of the year is crucial.

4. WATER ACCESS

Irrigation can be very costly, especially for large scale projects. Ensuring that the selected property has easy access to the city water supply or an underground well system is an imporant piece to the puzzle. If not, providing sufficient water for irrigation and other farm-related uses may be cost prohibitive.

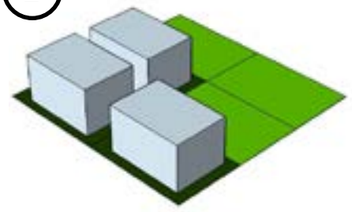
BRINGING VACANT LAND INTO PRODUCTION: STRATEGIES

Vacant lots are a plentiful and underutilized resource in the city of Columbus. While some properties are ideal for agriculture, some are not. Determining appropriate strategies for this land depends not only on the conditions of each particular lot, but on the greater urban context.

SINGLE LOT: 1

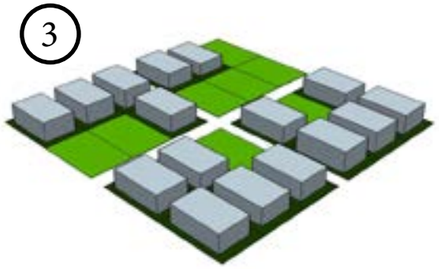
- Single vacant lots that are anomalies - usually found in a residential community block.
- Most appropriate for community gardens or small scale operations.
- Concerns: Heathy Soil, Sunlight

LINKED: 2



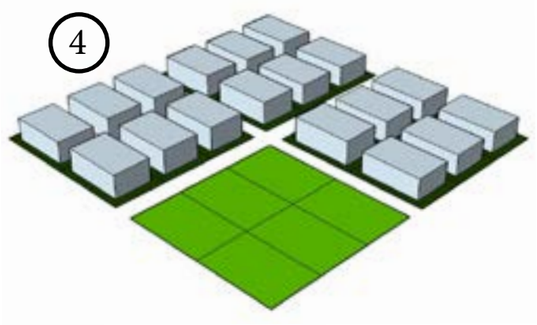
- Two or more linked vacant lots are optimal for a variety of strategies.
- Potential uses include larger scale community gardens or full urban farm projects.
- Concerns: Heathy Soil, Sunlight

CORRIDOR: 3



- Vacant Lots that run along both sides of a street, creating a cross section can share common uses but under different owners if desired
- Concerns: Heathy Soil, Sunlight

BLOCK: 4



- A whole section or block in a neighborhood provides large scale opportunities for green infrastructure that the whole community has access to.
- Greatest opportunity for large-scale urban farming.
- Concerns: Heathy Soil, Sunlight, Water Access, Flat Land

Land Tenureship

Some community gardens and urban farms in the city of Columbus are located on land owned by the city or by a private developer or company. Farmers and community gardeners lease the land from these entities for a set period of time. For instance, in the case of community gardens located on Columbus City Land Bank lots, a non-profit community garden leases the land on an annual basis, renewing their contract with the land bank each year. The Columbus City Land Bank states that it cannot guarantee that every community garden lease will continue indefinitely, although as part of general practice the lots on which these community gardens sit are not listed for sale.

Securing land tenure for urban farming and community gardening is an important concern if the City of Columbus wishes to promote and maintain urban agriculture. Some cities have put forth some innovative ways to help secure land for farming and community gardening. In the case of Baltimore city for instance, a community land trust helps preserve and support community gardens and community-managed open spaces in the city. The Baltimore Green Space land trust is a non-profit organization that maintains title of land where there exists a community garden or other form of valued community space, thus securing the land for use by the relevant community gardeners and community groups. In the case of Cleveland, the city's zoning ordinance for urban agriculture creates an Urban Garden District zone, making it possible for a parcel to be designated for urban farming, and giving gardeners and farmers the right to protect this parcel for this use. Cleveland also has initiated a longer lease program than Columbus where the city has agreed to five-year leases for the use of city- owned land bank lots for community gardening and farming purposes.

We recommend that the City of Columbus consider investigating a range of land tenure arrangements to help secure land for urban agriculture in the city.

Stormwater Management

Stormwater runoff regulation for the City of Columbus states that the construction, expansion or redevelopment of "commercial, industrial, institutional, residential or multi-family residential facilities that disturbs more than 10,000 square feet, and/or creates more than 2,000 square feet of impervious surface" must include some form of stormwater control measures and management. Urban farms and community gardens can include sheds, hoophouses, greenhouses and other structures that create impervious surface, generating stormwater runoff. Hence, the current regulations apply. However, since hoophouses are temporary structures and can include a means of rainwater capture, the question is whether or not this form of imperviousness ought to be regulated in the same way as permanent buildings or other structures. We recommend that the City of Columbus establish a Stormwater Control committee to investigate the potential for new or revised stormwater controls for urban farm and community gardening projects, specifically for those utilizing temporary hoophouse structures larger than 2,000 square feet.

URBAN
AGRICULTURE
RECOMMENDATIONS

Soil Safety

Good quality soil is essential for successful urban agriculture in the city. In some cases, soil in urban lots can be in poor condition and, in its current state, unsuitable for agriculture. The soils in urban lots are often severely compacted, lack sufficient organic matter and can have high concentrations of contaminants from past land uses. Some municipalities require soil testing before any agriculture can take place on an urban lot. Some municipalities require gardeners and farmers to use raised beds with new soil when past use of the proposed garden or farm site indicates a risk of soil contamination or if the soil is in very poor condition. It should be noted that this solution poses its own problems since the new soil being used in raised beds may also need to be tested. This can also be an expensive undertaking for community gardeners and farmers.

We recommend that the City of Columbus, in conjunction with experts in the field, establish a soil testing protocol for new farming and gardening sites in the city and determine what actions community gardeners and farmers can take if they find soil contamination or poor soil conditions once testing is complete.

Farm Application and Permitting

With the introduction of zoning for urban agriculture, many cities require farmers and urban gardeners to acquire the appropriate permits from the city before undertaking urban agricultural endeavors. For instance, in Chicago, urban farms require building permits and zoning approvals prior to construction. In the case of Chicago and other cities, there can be permits required for stormwater management in urban farm sites and in some cases a business license is required for urban farms. City review for urban agriculture will therefore have associated permitting and application fees.

We recommend that the City of Columbus keep these permitting costs to a minimum where possible so as to encourage engagement in urban agriculture throughout the city.

MAKING A PLAN: COLUMBUS

In the recent past, there has been a movement in Columbus focusing on local food production. People want to know who is producing their food and where exactly their food is coming from. Because of this movement, forms of urban agriculture have been making appearances all over the Columbus Metro Region. Each urban agriculture site develops by their own rules, and today, an urban agriculture zone is in the works to create a set of guidelines for all farms and gardens which are developing within the City of Columbus.

Agricultural Land Uses in Columbus

● Permitted
■ Conditional
□ Prohibited

		Small Urban Farm	Medium Urban Farm	Large Urban Farm	Community Garden
Residential					
R	Rural District	●	●	■	□
LRR	Limited Rural Residential District	●	●	■	□
RRR	Restricted Rural Residential District	●	●	■	□
RR	Rural Residential District	●	●	■	□
SR	Suburban Residential District	●	●	■	□
R-1	R-1 Residential District	●	●	■	□
R-2	R-2 Residential District	●	●	■	□
R-3	R-3 Residential District	●	●	■	□
R-2F	R-2F Residential District	●	●	■	□
R-4	R-4 Residential District	●	●	■	□
MHD	Manufactured Home Development District	●	●	■	□
Apartment Residential					
AR-12	Apartment Residential-12 District	●	●	■	□
ARLD	Apartment Residential Low Density District	●	●	■	□
AR-1	AR-1 Apartment Residential District	●	●	■	□
AR-2	AR-2 Apartment Residential District	●	●	■	□
AR-3	AR-3 Apartment Residential District	●	●	■	□
AR-4	AR-4 Apartment Residential District	●	●	■	□
AR-O	AR-O Apartment Residential Dsitrict	●	●	■	□
Commercial					
C-1	C-1 Commercial District	●	●	●	●
C-2	C-2 Commercial District	●	●	●	●
C-3	C-3 Commercial District	●	●	●	●
C-4	C-4 Commercial District	●	●	●	●
C-S	C-S Commercial District	●	●	●	●
CB	Commercial Business District	●	●	●	●
CC	Civic Center District	●	●	●	●
CPD	Commercial Planned Development District	●	●	●	●
Manufacturing					
M-2	Manufacturing District	●	●	●	●
M-1	Manufacturing District	●	●	●	●
M	Manufacturing District	●	●	●	●

Urban Farm:
"...farming operations that emphasize the cultivation, processing and marketing of food for income generation. It may involve the use of hydroponics, aquaponics, intensive farming methods, on-site sale of produce or wholesale to private entities, composting, and structures for extending growing season such as: hoop-houses, greenhouses, and cold-frames."

Community Gardens:

"Emphasize the growing of fruits, vegetables and other plants for neighborhood beautification, education, and recreation. It can involve the distribution or donation of harvested goods to the community or for personal consumption."

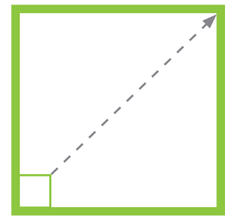
Prohibited: Roosters

Sale of Products:
The selling of goods at a farm stand is permitted as an accessory use on any urban agriculture site as long as the selling hours are between dawn and dusk.

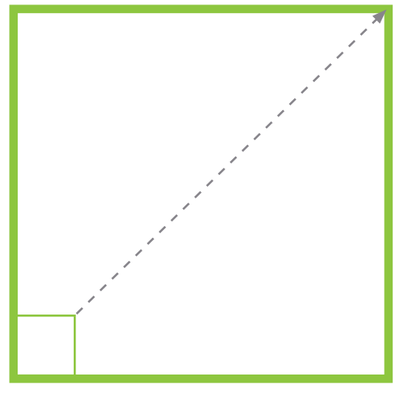
Accessory Uses/Structures: Farm stands, composting, selling of goods, keeping of farm animals, beekeeping, farm equipment usage cold frames, storage sheds, greenhouses, hoop-houses.

SMALL FARM
<1 ACRE

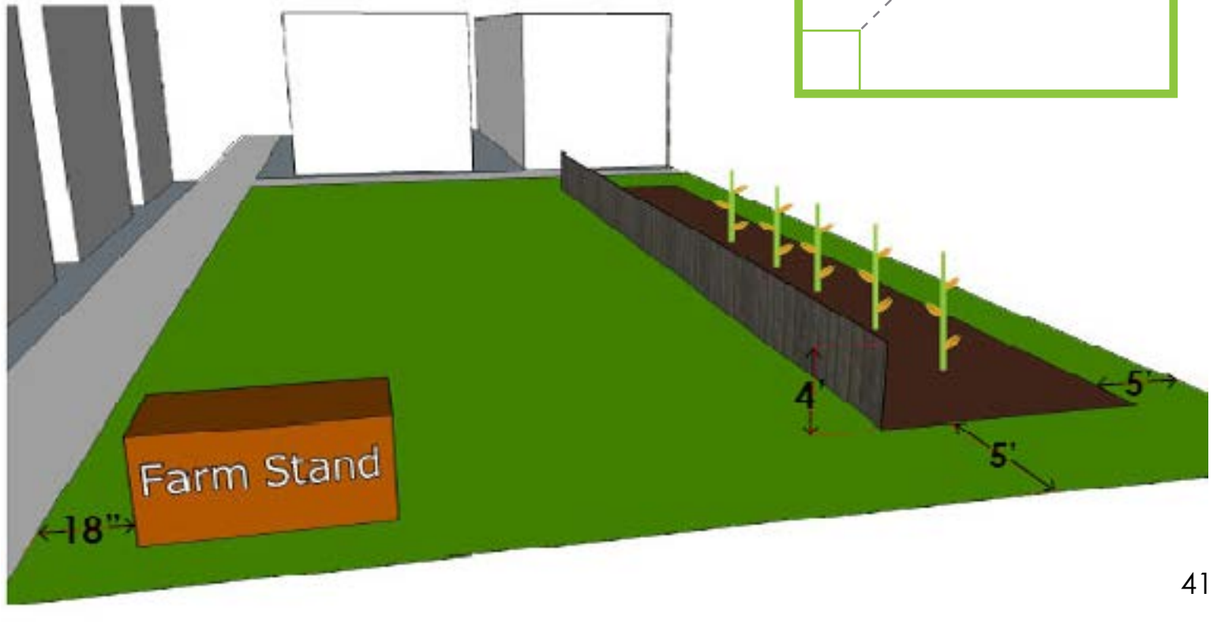
MEDIUM FARM
1-5 ACRES



LARGE FARM
>5 ACRES



Cultivation Regulations:



APPENDIX A

I. Purpose

The purpose of this ordinance is to establish zoning regulations for urban agriculture in the City of Columbus that will help build the food economy, strengthen the local food system, encourage community and environmental health, and increase neighborhood stabilization.

II. Definitions

1."Urban Agriculture" is the use of any land within the city limits for production, processing and cultivation of fruits, herbs, vegetables and other plants, including aquaculture and horticulture. This encompasses urban farms and community gardens.

2."Urban Farms" are farming operations that emphasizes the cultivation, processing and marketing of food for income generation. It may involve the use of hydroponics, aquaponics, intensive farming methods, on-site sale of produce or wholesale to private entities, composting, and structures for extending growing season such as: hoop-houses, greenhouses, and cold-frames.

- **(a)** "Small Urban Farm" is any farm one (1) acre or smaller.
- **(b)** "Medium Urban Farm" is any farm between one (1) and five (5) acres.
- **(c)** "Large Urban Farm" is any farm greater than five (5) acres.

3."Community Gardens" emphasize the growing of fruits, vegetables and other plants for neighborhood beautification, education, and recreation. It can involve the distribution or donation of harvested goods to the community or for personal consumption.

4."Indoor Aquaculture" is the rearing of aquatic animals or the cultivation of aquatic plants for food located within the walls of a structure.

5."Aquaponics" is a system of aquaculture in which the waste produced by farm fish or other aquatic animals supply nutrients for plants growth hydroponically which in turn purify the water.

6."Hydroponics" is the process of growing plants without soil, using other solutions or water or mediums such as gravel or sand.

7."Cold Frame" means an unheated outdoor structure consisting of a wooden or concrete frame and a top of glass or clear plastic, used for protecting seedlings and plants from the cold.

8."Hoop-house or High-Tunnel" means an unheated structure made of PVC piping or other material covered with translucent plastic, constructed in a "half-round" or "hoop" shape for the purpose of the cultivation of plants.

9."Compost" is decomposed organic matter, for use in agriculture, usually consisting of grass, leaves, yard waste, worms, and also raw and uncooked food waste but specifically excludes bones and animal by-products.

10."Composting" is a process of accelerated biodegradation and stabilization of organic material under controlled conditions yielding a product that can be safely be used as fertilizer.

11."Farm Stand" means a Farm Structure such as a table, stall or tent, in use during that Urban Farm's growing season, and operated by a sole vendor for the sale of agricultural or horticultural products.

12. "Greenhouse" means a permanent structure made of glass, plastic, or fiberglass in which plants are cultivated year round under controlled temperature and humidity settings.

III. Applicability

1.Urban Farms

(a) Primary Use: The primary activity to be performed on an Urban Farm shall be cultivation of plants and horticulture crops; other activities may be subject to permitting.

- **(i)** Small Urban Farm: Allowed in all districts and sub-districts
- **(ii)** Medium Urban Farm: Permitted in all districts.
- **(iii)** Large Urban Farm: Conditional in all residential and apartment residential districts. Permitted in all commercial and manufacturing districts.
- **(iv)** Indoor Aquaculture: Permitted in all commercial and manufacturing districts.

(b) Accessory Uses: The following are permitted accessory uses on urban farms.

- **(i)** The selling of goods produced on-site is a permitted accessory use on urban farms of all sizes. See Farm Stands (§1, D2) for regulations.
- **(ii)** The composting of materials generated on-site is a permitted accessory use as long as the aggregate area of compost is no larger than 300 square feet, as regulated by Ohio Administrative Code, Rule 3745-560-001 (E)(1). The composting setback is five (5) feet from all property lines and at least 20 feet from the nearest principle residential structure.
- **(iii)** The keeping of select farm animals is a permitted accessory use on urban farms. See Farm Animals (§1, D3) for more information on regulation.
- **(iv)** Beekeeping is a permitted accessory use on urban farms. See the Apiaries (§1, D5) for information on regulation.

(c) Accessory Structures: Buildings, limited to tool sheds, shade pavilions and planting preparation houses are considered accessory buildings, as are greenhouses, hoop-houses, cold-frames, and similar structures used to extend the growing season.

- **(i)** The height of accessory structures should be in compliance with the restrictions set forth by underlying zoning.
- **(ii)** Accessory structures that are considered impervious and exceed 2000 square feet need to comply with the storm water management regulation (Chapter 1149 of the Columbus Municipal Code).
- **(iii)** Setbacks of accessory structures must be greater than 18" from property lines and a minimum of 10 (ten) feet from any adjacent structures on the same or adjacent sites.

Zoning	Small <1 acre	Medium 1-5 acres	Large >5 acres	Indoor Aqauculture
Residential (R, LRR, RRR, RR, SR, R-1, R-2, R-3, R-2F, R-4, MHD)	Permitted	Permitted	Conditional	Permitted
Apartment Residential (AR-12, ARLD, AR-1, AR-2, AR-3, AR-4, AR-O)	Permitted	Permitted	Conditional	Permitted
Commercial (C-1, C-2, C-3, C-4, C-S, CB, CC, CPD)	Permitted	Permitted	Permitted	Permitted
Manufacturing (M-2, M-1, M)	Permitted	Permitted	Permitted	Permitted

(d) Signage: Signs in all residential and apartment residential districts may not exceed four (4) square feet in area and shall not exceed four (4) feet in height. Signage in all other districts may be up to eight (8) square feet in area and shall not exceed six (6) feet in height.
(e)Fencing: Fences shall not exceed six (6) feet in height; if taller than four (4) feet, the fence shall be at least fifty percent (50%) open, and shall be constructed of wood, chain link, or ornamental metal. In a location that is subject to design review, no fence shall be installed without review by the appropriate committee (e.g. neighborhood design review committee).
(f) Parking: Urban farms located in commercial or manufacturing districts should provide a minimum of 1 parking space per 5,000sq.ft. of growing or storage area and a maximum of 1 space per 2,500sq.ft. of growing or storage area.
(g) Farm Equipment: Motorized equipment within a residential zoning district or apartment residential development district shall be restricted to hours beginning at 8:00 A.M. and ending at 8:00 P.M. Equipment, such as fans, necessary for the operation of greenhouses are exempted from this provision.

2. Community Gardens

(a) Primary Use: The growing of fruits, vegetables and/or other plants for neighborhood beautification, education, and/or recreation are to be the primary activities permitted on a community garden site.
(b) Accessory Uses: The keeping of bees and selling of excess goods produced on site including but not limited to vegetables, fruits and flowers are permitted as accessory uses in community gardens as long as sales are not for profit, but rather to sustain the garden.

(i) Composting of materials generated on-site is a permitted accessory use as long as the aggregate area of compost is no larger than 300 square feet as regulated by Ohio Administrative Code, Rule 3745-560-001 (E)(1). The compost setback is five (5) feet from all property lines and at least 20 feet from the nearest principle residential structure.
(ii) Beekeeping is a permitted accessory use in community gardens that are greater than 1-acre in size. See Apiaries (§1, D5) for information on regulation.

(c) Accessory Structures: Buildings, limited to tool sheds, shade pavilions and planting preparation houses are considered accessory buildings, as are greenhouses, hoop-houses, cold-frames, and similar structures used to extend the growing season.

(i) The height of accessory structures should be in compliance with the restrictions set forth by underlying zoning.
(ii) When accessory structures that are considered impervious exceed 2,000 square feet they must comply with storm water management regulations found in Chapter 1149 of the Columbus Municipal Code.
(iii) The setbacks of accessory structures must be greater than 18" from property lines and a minimum of 10 (ten) feet from any adjacent structures on the same or adjacent sites.

(e) Signage: Signs in all residential and apartment residential districts may not exceed four (4) square feet in area and shall not exceed four (4) feet in height. Signage in all other districts may be up to eight (8) square feet in area and shall not exceed six (6) feet in height.
(f) Fencing: Fences shall not exceed six (6) feet in height; if taller than four (4) feet, the fence shall be at least fifty percent (50%) open, and shall be constructed of wood, chain link, or ornamental metal. In a location that is subject to design review, no fence shall be installed without review by the appropriate committee (e.g. neighborhood design review committee).

Zoning	Community Garden
Residential (R, LRR, RRR, RR, SR, R-1, R-2, R-3, R-2F, R-4, MHD)	Permitted
Apartment Residential (AR-12, ARLD, AR-1, AR-2, AR-3, AR-4, AR-O)	Permitted
Commercial (C-1, C-2, C-3, C-4, C-S, CB, CC, CPD)	Permitted
Manufacturing (M-2, M-1, M)	Permitted

Section 1. D Supplemental Regulations

1.Cultivation

Crop areas in community gardens and on urban farms must be set back at least five (5) feet from all property lines. The required setback must be covered with ground plants, which may include grasses.

2. Farm Stands

(a)Use: Farm stands are allowed on sites where the selling of goods is a permitted accessory use.
(b)Hours of Operation: The selling of goods is permitted between dawn and dusk, seven (7) days a week.
(c)Farm Stand Storage: Farm Stands shall be removed from the premises or stored inside a building on the premises when the farm is not open to the public.
(d)Signage: Temporary farm stand signs shall not encroach upon sidewalks, driveways and/or other rights of way, and shall be displayed so as not to create a nuisance or hazard. No more than two signs are permitted for a farm stand and may be displayed during sale hours but must be removed from the premises and stored inside a structure when the farm stand is not in operation.
(e)Size Regulations:

(i) In residential and apartment residential districts, farm stands may not exceed a total of 72 square feet.
(ii) In commercial districts farms stands may not exceed a total of 216 square feet.

3. Farm Animals

(a) Use: The keeping of farm animals is a permitted accessory use on urban farms.
(b)Permitted Animals: Chickens, rabbits, quail, sheep, and alpacas are permitted. All other animals (excluding roosters) will be determined on a case-by-case basis by the Department of Public Health. Roosters are expressly forbidden.

(i) Alpacas are prohibited on Small Urban Farms (less than one acre in size). On Medium and Large Urban Farms two (2) alpacas per acre are allowed.

(c) Licensing: Anyone proposing to keep permitted farm animals on an urban farm or community garden shall apply for a two (2) year license from the City of Columbus Public Health Department and pay a fee set by the Public Health Department. Permit sticker must be displayed on site and applicant's name and phone number must be easily visible.
(d) Standards Related to the Keeping of Animals: Any person keeping animals as an accessory use on an urban farm must adhere to standards set in the Columbus City Health Code § 221.05.
(e)Accessory Structures For the Keeping of Animals: Animal coops, pens or other structures used to house small animals should be allowed on sites where the keeping of animals is an accessory use. Such structures are subject to the following conditions:

4. Apiaries

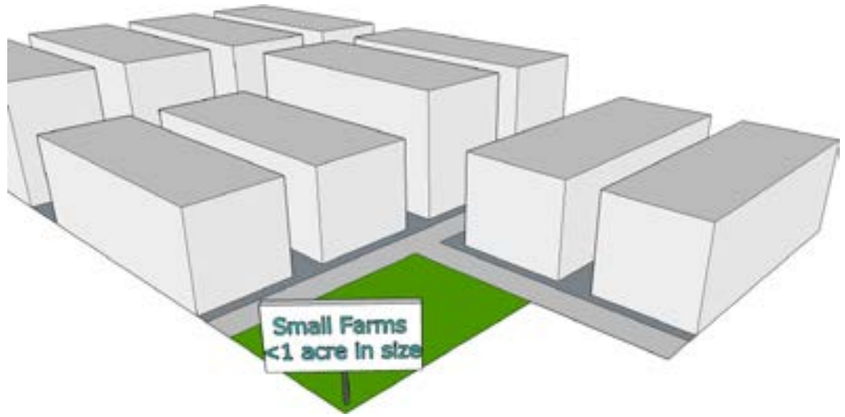
(a)Use: Beekeeping is a permitted accessory use on urban farms and in community gardens that are greater than 1-acre.
(b)Licensing: All apiaries are to register with the Department of Agriculture, as well as the Columbus Public Health Department, and owners of apiaries are subject to all rules and regulations set by the Director of Agriculture. For more information on apiary registration and licensing, see § 909.01 of the Ohio Revised Code.

5. Aquaculture

(a)Licensing: The operator shall maintain any licensure required through the Department of Natural Resources and the Department of Agriculture.
(b)Operation: No tank used for aquaculture shall be connected to the sewer system.

APPENDIX B

1.



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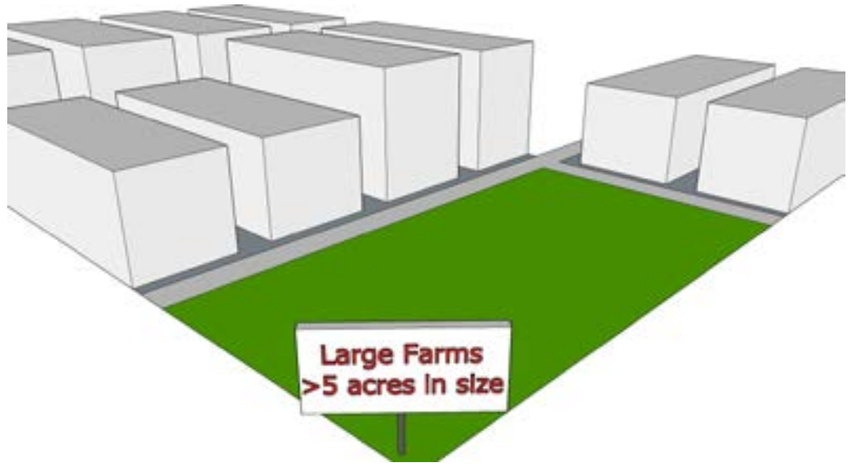

COLUMBUS URBAN AGRICULTURE CONTACTS

ANIMALS

FARM ANIMALS

City of Columbus Department of Public Health
Dr. Aaron K. Messer
Phone: (614) 645-6748

BEES

Central Ohio Beekeepers Association
Rodney A. Pritchard, President
955 Murnan Road
West Jefferson, OH 43162
Phone: (614) 213-3386

BUILDING PERMITS & ZONING

City of Columbus Building and
Zoning Services
757 Carolyn Avenue
Columbus, OH 43224
Office: (614) 645-7433
Fax: (614) 645-0082

BUSINESS LICENSES

City of Columbus Department of Public
Safety, License Section
750 Piedmont Road
Columbus, Ohio 43224
Fax: (614) 645-8912

COMPOSTING

Ohio EPA Division of Solid and Infectious
Waste Management
Phone: (614) 644-2621

COLUMBUS DEPARTMENT OF UTILITIES

Phone: (614) 645-3111

COM-TIL COMPOST

Phone: (614) 645-3153

PURCHASING OR LEASING OF CITY-OWNED PROPERTY

City of Columbus Land Redevelopment Office
50 West Gay Street
Columbus, OH 43215
Phone: (614) 645-LAND (5263)

SOIL TESTING

Alloway Testing
508 Bissman Court
Mansfield, OH 44903
Phone: (419) 525-1644 (Mansfield)

Brookside Laboratories, Inc.
308 South Main Street
New Knoxville, OH 45871
Phone: (419) 753-2448

CLC Labs
325 Venture Drive
Westerville, OH 43081
Phone: (614) 888-1663

Calmar Soil Testing Labs
130 South State Street
Westerville, OH 43081
Phone: (614) 523-1005
Phone: (800) 80-SOILS

Spectrum Analytic, Inc.
1087 Jamison Rd NW
Washington Court House, OH 43160
Phone: (740) 335-1562
Phone: (800) 321-1562

Holmes Lab
3559 U.S. Rt. 62
Millersburg, OH 44654
Phone: (330) 893-2933
Phone: (800) 344-1101

STORMWATER

City of Columbus Department of
Public Utilities
910 Dublin Road
Columbus, OH, 43215
Phone: (614) 645-8276