DOES YOUR COMMUNITY SUPPORT AGRICULTURE THROUGH ZONING?
Agriculture as an Emergent Land Use: Case Studies of Municipal Responsiveness

By Brian Barth

Though the term “urban agriculture” sounds like an oxymoron, agriculture in an urban context is not a new concept, nor is it as radical as it seems.

Developed and developing countries around the world have many examples of urban agriculture, both historic and contemporary. What is relatively new, however, is the emerging view in North America that the benefits of urban agriculture are so substantial as to merit codification in local land-use ordinances.

The integration of agricultural activities—such as animal husbandry, large-scale composting, and the use of farming equipment—in cities has not been without bumps in the road. Concerns over crowing roosters, unkempt vegetation, swarming bees, and unpleasant odors are valid, and zoning and other land-use regulations are important tools for balancing the rights of a community to produce, and possibly to sell, food grown inside city limits with other public interests. The voices advocating for more permissive regulatory schemes for urban agricultural activities have proliferated in recent years, and planners and policy makers in many cities have responded with revised zoning regulations to enable specific agricultural activities and mitigate possible negative effects. This article describes and analyzes the approach of three very different cities that have placed urban agriculture high on their respective agendas.

SCOPE OF THE CHALLENGE

It is important to note that the catch-all phrase “urban agriculture” covers a spectrum of land-use activities, each of which differs dramatically in the way it is addressed by zoning. Without clarifying the differences, the lines between them are easily blurred, making it difficult to apply principles to practice. Like other forms of land use, the different forms of urban agriculture can be classified, in part, according to intensity, which aids in devising regulatory strategies to address their varying impacts.

Home Gardening

Historically, backyard gardeners have raised fruits and vegetables at home without being in conflict with zoning ordinances. But the tremendous expansion of this pastime in recent years has led more and more urban growers to find themselves in conflict with local codes, spawning many of the policy changes occurring today.

Defining the permitted scope of home-based gardening activities has been a component of urban agriculture zoning amendments.
in many cities in recent years. For example, in 2007 Sacramento, California, removed a provision from its zoning code that limited front-yard produce gardens to 30 percent of the required setback area and capped plant heights at four feet.

Most cities do not explicitly prohibit front-yard gardens, but since produce gardens have a tendency to appear more overgrown and weedy than conventional landscaping, zoning provisions that define maintenance standards in this context are useful. And language to this effect is found in a number of urban agriculture zoning amendments passed in recent years.

Keeping chickens, goats, bees, and other livestock is a second area where home owners often run afoul of land-use or animal control regulations. Local laws vary widely in how this issue is addressed, ranging from not addressing it explicitly in any way to specifying exactly how many animals of each species can be kept and under what conditions. The trend in recent years has been toward increased tolerance and a detail-oriented approach. Some cities go so far as to dictate the frequency of cleaning chicken coops, while others specify that no disagreeable odors can emanate from the property and leave it up to the homeowner to determine how this is accomplished.

Finally, there is the question of whether food products produced at a private residence may be sold and, if so, how this should be regulated. Most communities opt to draw the line here to divide home gardening from commercial urban agriculture. However, there are notable exceptions where sales are permitted as an accessory use.

Community Gardens
Community gardens are shared garden spaces. In the typical community garden model, the space is divided up by garden members who cultivate small individual plots on a piece of land dedicated for the purpose. Community gardens occur in public parks, on underutilized land in traditional residential neighborhoods, in master planned communities and mixed use developments, or at institutional sites, such as schools or health care facilities. Partnerships between municipalities and community groups are common in the management of community gardens. Though the practical arrangements of community gardens vary considerably, the common denominators are public access and an emphasis on community building.

While community gardens involve many of the same zoning considerations as home-based food gardening, public access makes health and safety conditions paramount, as there are inherent dangers in the tools, beehives, animal waste, and other elements that may be found at community garden sites. Typical design standards for residential or commercial properties—such as those for parking, fencing, signage, drainage, and accessory structures—are not always adequate in this context, leading many communities to adopt specific site control guidelines for developing community gardens. Finally, subsidies—a reduction of property taxes or fees for connection to the municipal water supply, for example—also merit consideration when developing community food system plans.

Market Farms
The defining characteristic of a market farm is that the agricultural products are not primarily for personal consumption by the gardeners or farmers but instead are offered for sale to restaurants, institutions, or the public. Market farms are most often under the umbrella of a nonprofit organization that receives subsidies for the operation as part of a broader social mission. This form of urban agriculture is seen as a tool for addressing urban blight, public health, and food security, and is increasingly a component of neighborhood revitalization efforts.

All of the aforementioned attributes of home and community gardens with relevance to zoning codes—maintenance, aesthetics, livestock, and nuisance control—are equally applicable to market farms. As with community gardens, it is presumed that they will be open to the public, at least at times, bringing into question how safety and accessibility will be addressed. The more extensive nature of a market farm generally means gas-powered equipment is used in cultivation and the accumulation of organic waste is significant, which brings up a suite of safety and nuisance control implications.

In developing zoning ordinances to address the growing interest in market farms, the first question is to determine where they will be allowed. Often they are permitted outright in certain commercial zones and with a conditional use permit in other zones. Further permits can be required to ensure that the planned farming operation meets a checklist of design standards, ranging from Americans with Disabilities Act access to visual screening and parking space requirements. Some cities require site plans as part of the approval process, which allows administrators to identify potential issues with a farming operation before it gets under way.

In addition, municipal policy makers may choose to weigh in on the use of pesticides. Many urban agricultural operations employ organic practices, but if a grower wanted to apply some of the chemicals that are permitted for farm use in an urban setting, it could represent a nuisance—if not a health hazard—that municipal codes have the potential to prevent.

Designating space for urban farms can be an effective form of open space preservation or
vacant land management in blighted and redeveloping areas. Alternately, urban farms may be part of the built environment in the form of greenhouses, aquaponics systems, and rooftop farms. Vertical “skyscraper farms” are still science fiction at this point, but they, too, may dot the urban skyline in the not-so-distant future.

**SEATTLE: A FOCUS ON THE FOOD SYSTEM**

Seattle is home to the P-Patch, the second largest municipally operated gardening program in the country after New York City’s. Established in 1973, P-Patch is administered by Seattle’s Department of Neighborhoods and serves the gardening needs of 2,800 households at 85 sites comprising 32 acres of urban land. The program has been so successful that residents who want to join often spend years on a waiting list. Not surprisingly, the regulatory climate around food production has been correspondingly supportive. In April 2008 Seattle’s city council passed Resolution 31019, titled the Local Food Action Initiative, which outlined goals and objectives to strengthen the local food system. Among the resolution’s many recommendations was a directive to consider zoning changes that would encourage greater food production inside city limits.

In 2009 the city’s Department of Planning and Development undertook a study analyzing the existing planning and policy framework for its implications on food production, resulting in a series of recommendations for zoning revisions. By August 2010, the city council had approved an urban agriculture zoning amendment. 

While the existing code was already more permissive than in most cities (e.g., sanctioning front-yard gardening, the keeping of a limited number of chickens for home egg production, and the sale of unprocessed produce grown on-site), the 2010 revisions opened the door to a wider range of agricultural activities. Now, Seattle’s code draws distinctions based on the scale, type, and intent of food production, and it includes site control rules for farming operations and design standards for greenhouses, rooftop farms, and accessory structures. Seattle is an example of just how far a city can go in its tolerance of agricultural activities. Some of the key points are highlighted below.

**Animal Husbandry**

In Seattle, animal husbandry is defined as the rearing of animals for the purpose of selling the products. Keeping animals for personal use is permitted outright in all zones as an accessory use, but the rearing of animals for the purposes of selling their products is conditioned by specific rules. For example, it is not permitted in any residential zone and is permitted only as an accessory use in most commercial zones. Farmers can keep animals for commercial purposes only in designated warehouse districts.

While the intent for keeping animals is dependent on the underlying zoning, the number of animals permitted depends on the class of livestock and lot size. For example, three small animals (defined as dogs, cats, rabbits, dwarf goats, and mini-pot belly pigs) are allowed as an accessory to each dwelling unit or business, and one additional small animal is allowed for every additional 5,000 square feet. In contrast, farm animals (defined as cows, sheep, horses, goats, and other full-size farm animals) are permitted only on lots of at least 20,000 square feet in size and are restricted to a total of one animal per 10,000 square feet.

In addition to these classifications, eight chickens or other domestic fowl are permitted as an accessory use on any lot; on lots greater than 10,000 square feet, one additional bird is allowed for every 1,000 square feet. Bees are permitted outright as long as they are registered with the state department of agriculture, though on lots less than 10,000 square feet in size, beekeepers are restricted to a maximum of four hives. Aquaculture is only permitted in commercial zones, and the permitted size of...
farm does not have to be on the same lot as the principal use, but it must be within 800 feet.

Site Control
For farms greater than 4,000 square feet in residential neighborhoods, a site plan and management plan is required to ensure that the operation will not adversely impact neighborhood character, degrade environmental quality, or create nuisances or safety hazards for residents. These must be approved by the planning director and include details such as (1) the type of equipment intended for use in each season and the frequency and duration of anticipated use; (2) disclosure of any intent to spray or otherwise apply agricultural chemicals or pesticides (including the frequency and duration of application, and the plants, diseases, pests, or other purposes they are intended for); (3) disclosure of whether the operation of the farm would involve 750 square feet or more of land-disturbing activity; and (4) a sediment and erosion control plan.

Among the details addressed in Seattle’s urban agriculture zoning amendment is a provision for controlling the disagreeable smells that can accompany agricultural activities. In all zoning districts in the city, odors and fumes emanating from an urban farm must be limited to “what a reasonable individual could tolerate” at a distance greater than 200 feet from the site.

Analysis
Like any city, Seattle’s policies must be viewed in the context of related county, regional, and state initiatives. In 2012, the city contracted with the Puget Sound Regional Commission to develop strategies for integrating progressive food policy in the city’s next comprehensive plan update, which is scheduled for 2015. The recommendations in the regional commission’s report take a holistic view on the subject, outlining strategies to address food-related issues systemically though the lenses of transportation, housing, economic development, disaster preparedness, public health, and environmental policy. The city is an active participant in regional food systems conversations, and this participation continues to foster a productive feedback loop between a grassroots base and local officials as they work collaboratively to set, implement, and evaluate policies related to urban agriculture.

CHICAGO: A FOCUS ON REVITALIZATION
Go to 2040, the Chicago Metropolitan Agency for Planning’s comprehensive plan, adopted in 2010, includes a significant focus on sustainable food systems and specifically recommends that local governments “simplify and incentivize the conversion of vacant and underutilized lots, spaces, and rooftops into agricultural uses.” In a parallel effort, the city of Chicago updated its zoning code in 2011 to open the door to greater food production inside city limits. Key components of the zoning revisions are outlined below.

Animal Husbandry
Chicago is a rare example of a large city that has never banned livestock or limited the number of animals permitted, specifying only that they not be kept for purposes of slaughter and giving guidelines for the design and maintenance of chicken coops. Thus, the context for zoning revisions in the arena of livestock has been minimal. The 2011 revisions specifically permit aquaponic fish culture for commercial farming operations only and allow up to five beehives by right in all districts—otherwise, animal husbandry is not addressed.

Sale of Food Products
The zoning changes clarify rules for commercial farming operations, limiting their location to certain commercial zones and manufacturing districts and specifying that the sale area be no more than 3,000 square feet. Sales are permitted in community gardens as an accessory use, but not at the site of home gardens.

Site Control
The 2011 revisions increased the size limit for community gardens to 25,000 square feet (with no size limit in open space districts). Community gardens are no longer required to comply with general fencing and parkway landscaping requirements; this removes barriers for community groups that lack the resources to incorporate these design features at potential community garden sites. Fencing and landscaping plans are now determined on a case-by-case basis in collaboration with city staff.

For commercial farm sites, parking space requirements were set at one for every four employees and a cap of 25 cubic yards was specified for on-site compost operations.

Analysis
The relatively limited breadth of Chicago’s urban agriculture zoning amendment is not a symptom of apathy toward food production. Alongside the zoning revisions, the city launched a slew of related initiatives. First, a study was carried out to map grocery store access, food insecurity, and diabetes hospitalization rates across Chicago’s 50 wards, which confirmed that obesity-related health problems were highest in areas that lacked grocery stores offering fresh food, and that these neighborhoods were also the places where poverty and urban blight were most severe. The link between obesity-related health issues and economic depression has provided Chicago with a strong rationale to support urban agriculture as a community development tool that can address these issues simultaneously.

In 2013, the Recipe for Healthy Places, Chicago’s official food plan, was adopted. It lays out a long-term vision and policy framework for institutionalizing fresh food access for all Chicagoans. Intentions to scale up urban agriculture are seeded throughout the plan, which lists “create[ing] a system of public open spaces for large scale food growing, job training and food-related education activities,” as one of its primary goals. The plan tasks the Department of Housing and Economic Development with the job of analyzing food production systems to “evaluate market potential for converting vacant land to food production.”

In spring of 2014, the Department of Planning and Development released a document outlining the broad strokes of a plan to revitalize three of Chicago’s most depressed neighborhoods—Englewood, Woodlawn, and Washington Park—where there are 11,000 vacant lots comprising 800 acres. Known as the Green Healthy Neighborhoods plan, its intent is to reclaim a corridor along 63rd street and the new Englewood Remaking America rail trail with a combination of small-scale market gardens and large-scale farms, and to reinvigorate the economy by subsidizing small businesses (some of which would be tied to local food production) and “green” manufacturing centers. The hope is to create a thriving main street corridor with an environmental focus. Urban agriculture is highlighted in the plan as a primary catalyst, providing both social and economic traction.

Zoning has thus far played a relatively minor role in Chicago’s approach to supporting urban agriculture, and further revisions may be necessary to accommodate the food-based revitalization initiatives that are currently under way. For example, local urban agriculture advocates have expressed dissatisfaction over the limitations imposed on composting activities.
Here, urban agriculture is not a strategy for densely populated cities in New England. Somerville, Massachusetts, is one of the most interesting. With 78,000 residents in four square miles, the city is also interested in tapping into the potential public health benefits of urban agriculture. In 2002, the city launched Shape Up Somerville, a Centers for Disease Control-funded initiative to address childhood obesity. The pilot project evolved into a general campaign to address public health and eventually spawned Mayor Joe Curtatone’s urban agriculture initiative.

In 2013, representatives from the city’s legal, planning and zoning, parks and open space, inspection services, and animal control divisions, as well as the board of health, came together to devise strategies to better integrate urban agriculture into Somerville’s urban fabric. The results are a comprehensive, rather than iterative, approach to zoning for urban agriculture. The regulations are based on the research of the in-house interdisciplinary team and the input of community experts who are actively engaged in Somerville’s burgeoning urban agriculture scene.

Animal Husbandry

The new regulations allow no livestock other than chickens and bees. Up to six hens are permitted per lot, as long as coops are cleaned once per week and the chicken feed is kept indoors in a rodent-proof container. Two beehives are allowed per lot and fresh water must be provided at all times; stagnant water that could provide a breeding area for mosquitoes is expressly prohibited. Before setting up beehives, residents are required to obtain an apiary permit, which involves watching the Somerville Board of Health video regarding beekeeping.

Sale of Food Products

As long as certain conditions are met, it is now legal to sell fresh, unprocessed produce (including honey and eggs) grown on the premises of any farm or garden in Somerville. A soil test is required and the results of the soil test must be posted at the point of sale. Somerville recommends that produce be grown only in soil with under 300 ppm of lead, though the right to sell produce is not conditional on the test results. Sales are limited to the months of May through October between the hours of 9 a.m. and 6 p.m. and a maximum of three days per week and 25 days per year. The sale area is limited to only 50 square feet, and signs can be no more than six square feet. Both signs and sale displays must be stored out of sight when not in use.

Site Control

A number of rules to mitigate off-site consequences of agricultural activities were enacted, as well. For example, a flyway barrier six feet tall by 25 feet in length is required between beehives and property lines, which may consist of a wall, fence, dense vegetation, or a combination of these items. Chicken owners are
required to maintain henhouses in a way that prevents any noticeable odors from emanating beyond property boundaries. Like containers for chicken feed, composting devices must be of a rodent-proof design. In general, all tools and supplies must be kept in an enclosed area or otherwise screened from the street.

Analysis
Beyond drafting such clear and comprehensive rules, Somerville took another, perhaps even more important, step that often lacks in other cities where similar zoning revisions have been made: It created a document to explain the rules in plain language and a public campaign to disseminate the information. Somerville’s “ABC’s of Urban Agriculture” (A for agriculture, B for bees, and C for chickens) is a user-friendly guide that compiles all city regulations concerning food production in one place. Each section lists the relevant rules, describes best practices, and includes resources for further information. Each scenario that requires a permit is explained, and the necessary forms to apply are provided at the back of the booklet. The document makes sure that growers are aware not only of what food production activities are addressed by the zoning code, but which ones would also trigger health, building, fire, or noise regulations and either explains what these are on the same page or directs readers to the appropriate resource for obtaining more information.

There is also an attempt to defuse some of the concerns that can arise around urban agriculture. For example, the section on bees includes text and photographs explaining the differences between honeybees and the other related insects that are much more likely to sting, such as wasps, yellow jackets, and hornets. Though the guide serves as an educational resource, the city also publishes a blog devoted to urban agriculture, hosts classes and workshops on related subjects, and has sponsored a small urban farm as a demonstration of their ideals.

MOVING FORWARD
It is still too early to understand the long-term impacts of changing land-use laws to favor urban food production. There are many studies indicating benefits associated with local food production, especially from a health perspective, which has helped to spur the urban agriculture movement forward. A few studies have examined the impacts of local agriculture from various land-use perspectives, but they typically use a regional scale (often a 100- or 300-mile definition of local food) to define their scope. This is not particularly relevant to the land-use implications of urban agriculture, which takes place in a very different context from farms in rural and peri-urban areas. I am not aware of any studies geared specifically to urban food production.

This is the time to collect the data that will inform the next generation of urban agriculture zoning, investigating both positive and negative impacts. Key areas to track are effects on property values, jobs created, return on municipal investments, food produced, health outcomes, and environmental impacts.

One conclusion that can be drawn thus far is the importance of taking a proactive approach to contentious subjects like backyard chicken keeping, front-yard vegetable gardens, and the sale of produce. As the interest in and land devoted to urban agriculture grows, policies that mitigate potential negative effects—while maximizing socially beneficial returns—are essential. At the very least, urban food production represents a unique form of civic engagement that merits protection as a valid form of land use.

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