



Article 89 Made Easy:

Urban Agriculture Zoning For The City of Boston



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INTRODUCTION

Why “Made Easy”?

Article 89 applies citywide and was adopted into the Boston Zoning Code in December 2013. The Zoning Code is a legal document that establishes rules around land use, building dimensions, and permitting requirements for the city. Through the Zoning Code, Boston promotes community development in a way that is consistent with the needs, desires, and character of the city’s neighborhoods.

Because zoning language can be difficult to understand, Article 89 Made Easy attempts to make the zoning language in Article 89 more accessible to the reader. The Boston Redevelopment Authority (BRA) hopes that residents interested in urban agriculture find the guide a helpful way to navigate Article 89. Whether you are interested in starting a farm, adding a greenhouse to your building, or raising chickens in your backyard, this guide helps to demystify what may seem like confusing regulations.



What is Urban Agriculture?

Urban agriculture isn’t just farms. It takes many forms, from the classic ground-level vegetable farm to rooftop greenhouses growing hydroponically (water-based medium enriched with nutrients) to backyard honeybees or the raising of fish. Many farms will compost their organic waste. All urban farms using native or imported soil will need to have it tested. Through the addition of Article 89, the City of Boston has

updated its Zoning Code to facilitate the development of the many diverse urban agriculture activities mentioned above. Article 89 focuses on reducing barriers to commercial agriculture, thereby promoting economic opportunity and self-sufficiency for food producers. Boston already allows significant personal and community gardening activities, which is unchanged by Article 89.

Why Farm in the City?

Urban agriculture holds the promise of boosting food access in Boston's underserved communities, providing new opportunities for local business growth, and developing knowledge and education about healthy eating. Urban farms in Boston can be a source of fresh produce for neighborhoods, local restaurants and shops, as well as an opportunity for community-supported enterprises to fill valuable educational and social roles. The practices addressed in Article 89 allow Boston residents to grow and access healthy foods while ensuring farming activities remain compatible with their urban surroundings.

How was Article 89 Shaped?

Article 89 took shape over the course of two years of research and monthly discussions with the Urban Agriculture Working Group, which included 22 members of experts and practitioners of healthy food and growing. The BRA's Planning Department and the Mayor's Office of Food Initiatives worked in tandem to facilitate this effort. Eighteen Working Group meetings and many sidebar conversations were held, which included many engaged urban farming advocates and members of the public. The kick-off meeting in January 2012 had over 370 attendees! City staff took Article 89 out to the neighborhoods in the summer of 2013 where it was generally supported by neighbors and citizens of Boston. Article 89 was adopted into the Boston Zoning Code in December 2013.

Several common zoning terms appear throughout. Depending on location, the Zoning Code treats land uses as Allowed, Conditional, or Forbidden.

Allowed - uses are permitted outright (meaning no public hearing is required), but may require administrative permits, approvals and/or reviews (e.g., water permits, fire permits). For roadmap of all processes including zoning, go to <https://blogs.law.harvard.edu/foodpolicyinitiative/food-policy-initiative-projects/current-projects/boston-urban-agriculture-initiative/>

Conditional - uses may be permitted, but first require a public hearing before and approval by the Zoning Board of Appeals before a conditional use permit is granted.

Forbidden - uses require a variance granted by and a public hearing before the Zoning Board of Appeals. A variance grants permission to deviate from the Code's requirements. It is often more difficult to obtain a variance for a forbidden use than a conditional use permit.

For more information about the Boston Zoning Board of Appeal process, go to <http://www.cityofboston.gov/isd/building/process.asp>

TYPES OF URBAN FARMS

Article 89 allows farming in different parts of the city, given several determining factors: the zone in which the property is located, the size of the proposed farm, and the nature of agricultural operations. In many cases, Article 89 allows farming outright, meaning no variances from the existing zoning (and thus public hearings) are required, although special permits and/or administrative reviews may be required by other city affiliates (i.e., Boston Landmarks Commission, Boston Fire Department, Boston Parks and Recreation Department, Boston Water and Sewer Commission, Boston Public Health Commission, etc). For larger farms, Article 89 may require Comprehensive Farm Review (an administrative design review conducted by BRA staff) or a conditional use permit (requiring a public hearing with the Zoning Board of Appeal).



Tomatoes growing in The Food Project's Greenhouse in Roxbury, MA

A conditional use permit or a variance may take 4-6 months to obtain. Administrative staff level review, such as Comprehensive Farm Review, or special permits, will take up to 45 days in most cases. This all being said, if you want to sell vegetables in the summer, you should start the permitting process with the city in the winter!

For the purposes of Article 89, urban farms fall into one of three general categories: **Ground-level Farms, Roof-level Farms, and Freight Container Farming.** The following sections explain where Article 89 allows farms of each type based on their size and location.

Ground-Level Farms

As the name suggests, a ground-level farm refers to a farm located on the ground plane. Such farms may include row crops planted in the ground or raised beds, farm structures such as greenhouses, hydroponics, aquaponics and aquaculture, and/or other farm operations. Article 89 sets forth rules that govern the uses of land (i.e., whether a use is *allowed*, *conditional*, or *forbidden*) for ground-level farms based on their size and location. All ground-level urban farms up to one acre (43,560 square feet) are allowed outright in any zone in the city. To find out what zone a property is in, consult the Zoning Viewer at the BRA website: <http://gis.cityofboston.gov/zoning>. Ground-level farms greater than one acre are allowed in industrial areas and are conditional in all other areas.

For details of zoning for ground-level farms, see Section 89-4.



The Food Project's Ground-Level Urban Farm in Roxbury, MA

USE REGULATIONS FOR GROUND-LEVEL FARMS

Zoning*	Small (less than 10,000 SF)	Medium (10,000 SF - 1 acre)	Large (greater than 1 acre)
Residential (e.g., 1F, 2F, MFR)	Allowed	Allowed	Conditional Use
Commercial (e.g., L, LC, NS, B, CC, EDA)	Allowed	Allowed	Conditional Use
Industrial (e.g., I, M, LI)	Allowed	Allowed	Allowed
Institutional (e.g., IS, NI, CF)	Allowed	Allowed	Conditional Use

*Zoning categories in this table and following tables are generalized. For specific zoning sub-districts, see Article 89, Appendix C.

Roof-Level Farms

Roof-level farming offers the opportunity to use space more efficiently, moderate building temperatures, and create a greener city.

Because roof-level farming involves greater technical complexity than ground-level farming, compliance with the building/safety and fire codes is required. For example, the Boston Fire Department (BFD) requires a Fire Protection Engineering Report for all rooftop farming operations. Contact the BFD to find out the specifics of what a Fire Protection Engineering Report will need to contain. See appendices for contact information.

Roof-Level Open Air Farms

As shown in the accompanying table, open air roof-level farms up to 5,000 square feet are allowed in all zones. Open air roof-level farms greater than 5,000 square feet are conditional in all residential and small scale commercial zones, and allowed in all other zones.

Roof-Level Greenhouses

Roof-level greenhouses are conditional in all residential and small scale commercial zones, and allowed in all other zones.

For details about zoning for roof-level farms and greenhouses, see Section 89-5.

USE REGULATIONS FOR ROOF-LEVEL FARMS

USE REGULATIONS: ROOF-LEVEL FARMS AND ROOFTOP GREENHOUSES				
Open Air				Rooftop Greenhouse
GENERALIZED ZONING CATEGORY	Small (less than 10,000 sq ft)	Medium (10,000 sq ft - 1 acre)	Large (greater than 1 acre)	Any Size
Residential (e.g., 1F, 2F, MFR)	Allowed	Conditional Use	Conditional Use	Conditional Use
Small-scale Commercial (e.g., L, LC, MFR/LS)	Allowed	Conditional Use	Conditional Use	Conditional Use
Large-scale Commercial (e.g. NS, B, CC, EDA)	Allowed	Allowed	Allowed	Allowed
Industrial (e.g., I, M, LI)	Allowed	Allowed	Allowed	Allowed
Institutional (e.g., IS, NI, CF)	Allowed	Allowed	Allowed	Allowed

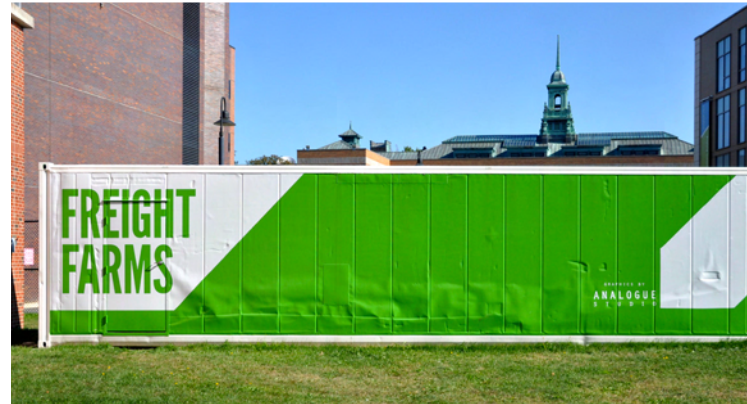


Ledge Restaurant
Dorchester, MA
4,000 SF

Freight Container Farming

Freight containers are an emerging medium for hydroponics and aquaponics. Originally designed for shipping by train, these containers usually become obsolete for shipping after about five years when their refrigeration units fail. Thousands of obsolete freight containers are available to be recycled for other purposes. Because they already come with insulation, they are ideal for growing year-round in a climate controlled, artificially illuminated environment. Due to the efficient nature of hydroponics and aquaculture, relatively large amounts of food can be grown in these small containers.

The “Farming Practices” section of this Guide (under “hydroponics” and “aquaponics”) describes how Article 89 deals with freight container farming. For use regulations for freight container farming, see **Article 89, section 11(1) and (2)**. For design review requirements, see Section **Article 89, Section 11(4)**.



*Typical freight container (40 ft x 8 ft)
Freight Farms™ at Boston Latin School*



*Example of produce growing in a freight container
PodPonics - Atlanta, GA*



The interior of a freight container used for hydroponic growing

FARM STRUCTURES

Urban farming includes more than just rows of planted crops. Urban farms will often use farm structures that provide specialized growing environments, extend the growing season, offer storage space for equipment, and serve other important functions. For farm structures on ground-level urban farms, Article 89 requires that farms comply with the height limits and setback requirements of the zone in which the property is located (<http://www.bostonredevelopmentauthority.org/zoning/zoning-code-maps>). Setbacks are the buffer between the property line and building footprint. There are front, side and rear setbacks. Rooftop greenhouses cannot be higher than twenty-five feet, and setbacks for any rooftop greenhouse are determined through the building/safety and fire codes.

SEASON-EXTENDING STRUCTURES



A **COLD FRAME** is a temporary, unheated outdoor structure used for protecting seedlings and plants from the cold. Under Article 89, cold frames may be no higher than thirty-six inches (36") and may be erected for up to 6 months during any given calendar year.



A **HOOP HOUSE** is an outdoor structure made of flexible PVC piping or other material covered with translucent plastic, constructed in a "half-round" or "hoop" shape, generally tall enough for a person to enter standing up.



A **GREENHOUSE** is a permanent structure made of glass, plastic, or fiberglass in which plants are grown year-round under controlled temperature and humidity settings. Both ground-level and rooftop farms use greenhouses.



FARM STANDS include tables, stalls, or tents operated by a farmer for the sale of agricultural or horticultural products. [Cross reference to the new Markets/Sales section]

Please see Section 89-12 for use regulations and placement guidelines of farm stands.



SHADE PAVILIONS and **GAZEBOS** provide space for farm workers and visitors to rest, escape the sun, and perhaps prepare the produce for sale.



SHEDS are utilized on many farms to store tools and equipment, or as a space to pack farm products.



Signage

All ground-level urban farms must post at least one identification sign stating only the name of the urban farm and contact information. The identification sign cannot exceed six square feet in total area, and must be affixed to a fence or a structure at a height of no more than four feet from the ground.

Up to one temporary farm stand sign is allowed to advertise a farm stand on any permitted urban farm, but can only be in use during sales hours. The temporary farm stand sign must be removed and stored when the farm stand is not in operation, and cannot encroach upon sidewalks, driveways or other rights-of-way.

Farms may apply for more signage than what is allowed in Article 89 (e.g., more than one sign, larger dimensions). BRA review of this additional signage will occur either under Comprehensive Farm Review



Urban farm sign that meets the requirements of Article 89

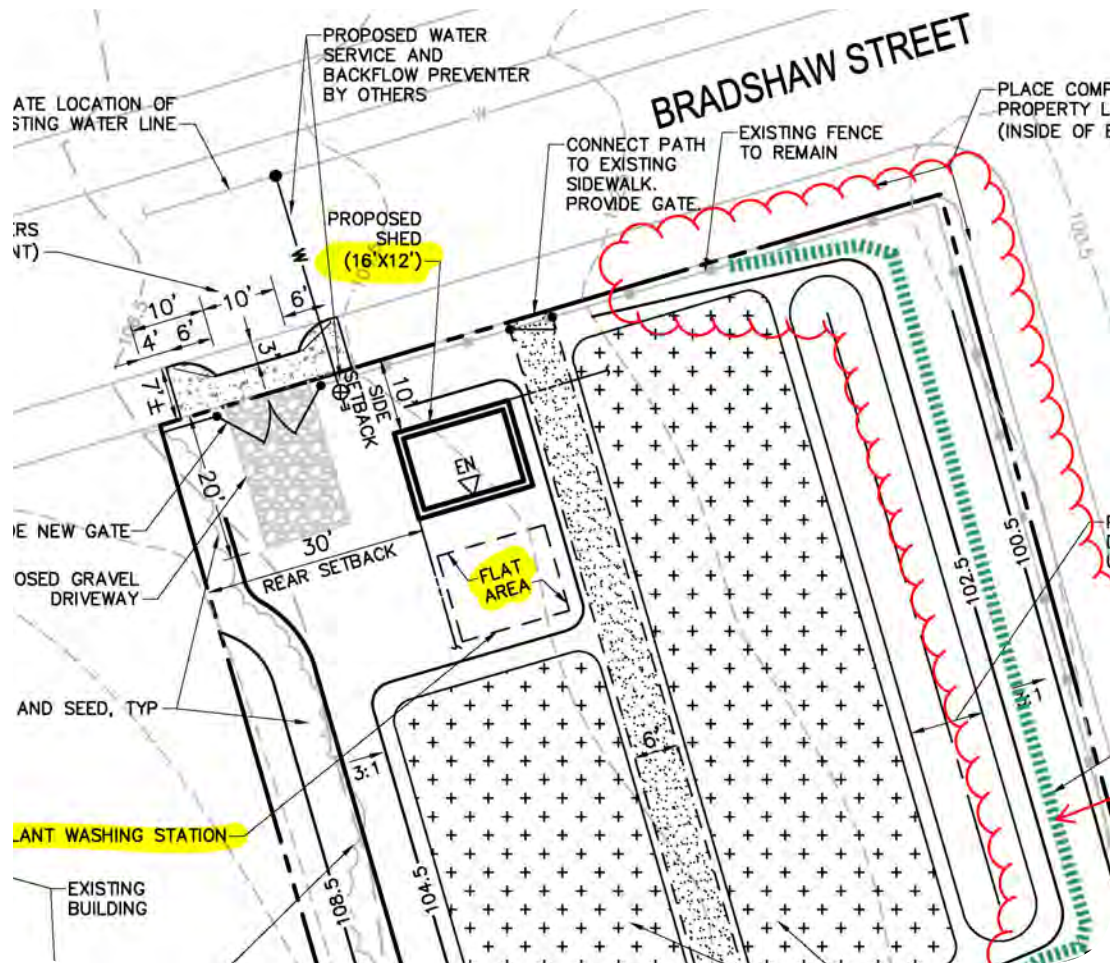
(see Chapter 3 of this document), or if the farm is not undergoing CFR, through an administrative BRA staff level review called Comprehensive Sign Design Review. Comprehensive Sign Design Review will not require a trip to the Zoning Board of Appeal, nor the

full abutter-notification review process which is required with Comprehensive Farm Review. With Comprehensive Sign Design Review, plans for signage will need to be stamped by the BRA before being receiving a sign permit from ISD.



Temporary farm stand signs that meet the requirements of Article 89

COMPREHENSIVE FARM REVIEW



Text

Article 89 introduces Boston to uses, structures, and activities that will be new to the city's landscape and neighborhoods. Because the BRA expects new urban farms to operate in residential areas, sensitive siting and design will play an important role in promoting good relations between residents and farmers. Through Comprehensive Farm Review (CFR), the BRA will work with farmers to make sure that the farm will be a good neighbor in that agricultural activities of a certain scale will be designed and operated to be sensitive to their surroundings. CFR is an administrative review by the BRA Urban Design staff and will take up to 45 days after the farm plan is submitted. No trip to the Zoning Board of Appeals is required. See Section 89-6 for more information.

When is CFR Required?

Article 89 requires CFR for urban farms depending on their size and their location (e.g., the zone they are located in). The threshold for CFR also depends on whether agricultural activities take place at ground level or on a rooftop. In general, Article 89 requires the least intensive review for urban farms in industrial zones that do not abut residential properties or other residential zones (e.g., the South Boston Seaport District). Alternatively, CFR will require more intensive review for rooftop farms and greenhouses locating in residential and small scale commercial zones due to potential visual and lighting impacts on neighbors.



This vacant site in Roxbury is just over 10,000 square feet. A site this size would require CFR

USE REGULATIONS AND CFR REQUIREMENTS GROUND-LEVEL FARM			
ZONING	Small (less than 10,000 sq ft)	Medium (10,000 sq ft - 1 acre)	Large (greater than 1 acre)
Residential (e.g., 1F, 2F, MFR)	Allowed / No CFR ²	Allowed / CFR	Conditional Use
Commercial (e.g., L, LC, NS, B, CC, EDA)	Allowed / No CFR ²	Allowed / CFR	Conditional Use
Industrial (e.g., I, M, LI)	Allowed / No CFR ^{1,2}	Allowed / No CFR ^{1,2}	Allowed / CFR
Institutional (e.g. IS, NI, CF)	Allowed / No CFR ²	Allowed / CFR	Conditional Use
¹ Exception: Any Ground-Level Urban Farm in any Industrial (without residential uses) Subdistrict where the property abuts a Residential Subdistrict would be subject to CFR			
² Exception: Any Ground-Level Urban Farm in a Neighborhood Design Overlay District (NDOD) or Greenbelt Protection Overlay District (GPOD) would be subject to CFR			

CFR for Ground Level Farms

Any ground level urban farm which occupies less than 10,000 square feet does not require CFR in any zones.

Any ground-level urban farm greater than 10,000 sf will require either CFR (up to 45 days for review) or a conditional use permit (trip to the Zoning Board of Appeals, approximately 4-6 months), depending on the zone in which it is located, and whether the location abuts a residential zone or is within a Neighborhood Design Overlay District (NDOD) or a Greenbelt Protection Overlay District (GPOD). If a property is within a NDOD or a GPOD,

this signifies that the property has an added layer of design protection in order to preserve architectural (NDOD) or natural (GPOD) resources that are characterize that area.

CFR for ground-level urban farms between 10,000 square feet and one acre will not involve the Zoning Board of Appeals. However, once a farm exceeds one acre in size, CFR no longer applies and a conditional use permit (Zoning Board of Appeals) is required before the farm can be permitted. This can take up to 6 months to obtain.

See the chart above for more detail.

USE REGULATIONS AND CFR REQUIREMENTS ROOF-LEVEL FARMS				
ZONING	Small (less than 10,000 sq ft)	Medium (10,000 sq ft - 1 acre)	Large (greater than 1 acre)	Any Size
Residential (e.g., 1F, 2F, MFR)	Allowed / No CFR ^{2,3}	Conditional Use	Conditional Use	Conditional Use
Small-scale Commercial (e.g., L, LC, MFR/LS)	Allowed / No CFR ^{2,3}	Conditional Use	Conditional Use	Conditional Use
Large-scale Commercial (e.g., NS, B, CC, EDA)	Allowed / No CFR ^{2,3}	Allowed / CFR	Allowed / CFR	Allowed / CFR
Industrial (e.g., I, M, LI)	Allowed / No CFR ^{2,3}	Allowed / No CFR ^{1,2,3}	Allowed / CFR	Allowed / CFR
Institutional (e.g., IS, NI, CF)	Allowed / No CFR ^{2,3}	Allowed / No CFR ^{2,3}	Allowed / CFR	Allowed / CFR
¹ Exception: Any Roof-Level Urban Farm in any Industrial (without residential uses) Subdistrict where the property abuts a Residential Subdistrict would be subject to CFR				
² Exception: Any Roof-Level Urban Farm in any Subdistrict that contains a Farm Structure visible from a public street or public open space would be subject to CFR				
³ Exception: Any Roof-Level Urban Farm in a Neighborhood Design Overlay District (NDOD) or Greenbelt Protection Overlay District (GPOD) would be subject to CFR				

CFR for Roof Level Farms

Open air roof-level farms that are >5,000 square feet will require either CFR or a conditional use permit, with a few exceptions. A conditional use permit is required in more sensitive zones (e.g., containing residential and/or historic properties) while CFR is required in less sensitive zones such as industrial, institutional or large-scale commercial. See the chart below for more detail.

Rooftop greenhouses require a conditional use permit in all residential and small-scale commercial/mixed use zones. Rooftop greenhouses allowed outright in all other zones will require CFR.

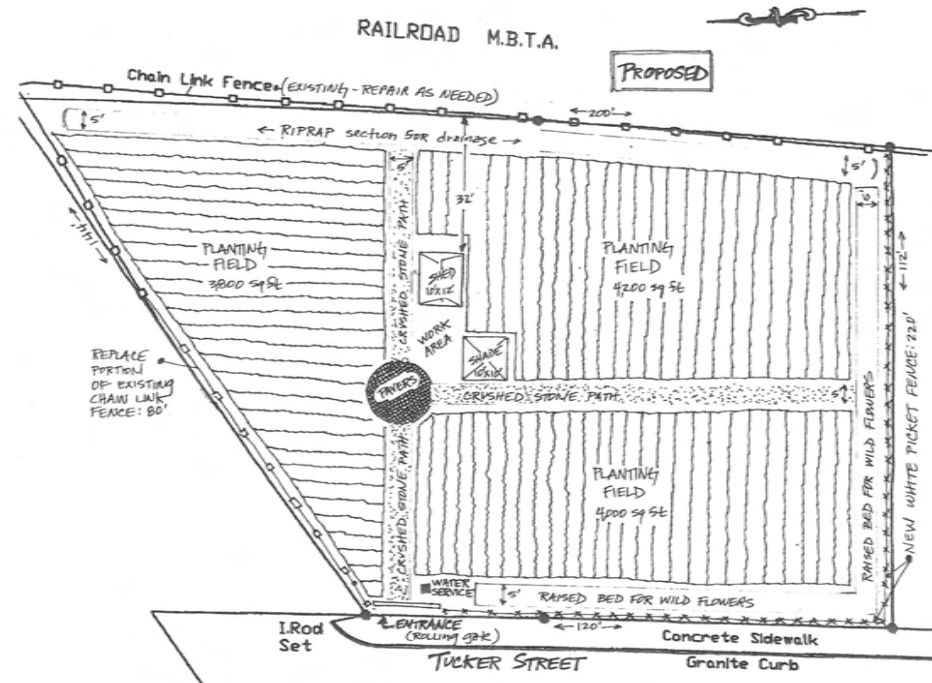


*Founding Farmer, Courtney Hennessey of Higher Ground Farms
Boston Design Center Rooftop, Seaport District
Future expansion plans to 55,000 SF*

CFR PROCESS

Once the farmer is certain that the urban farm will be allowed outright, the BRA Urban Design Department works with the farmer on CFR. The assigned BRA designer helps to ensure that the farm plan is complete and assists the farmer in creating a design that minimizes potential issues for neighbors.

CFR does not require professionally drawn plans; farmers may submit plans and designs that are hand-drawn sketches as long as required information is clearly shown. Along with a sketch plan, photos and any elevation drawings for farm structures should be submitted to the BRA as part of the design package. If the Boston Water and Sewer Commission (BWSC) does not require engineered drawings for irrigation plans and controls for storm water runoff, these items, if applicable, should be included in the sketch plan for the BRA. Within five days of receiving the full farm plan design package, the BRA will notify the Mayor's Office of Neighborhood Services,



Example of a sketch plan required for CFR

the relevant City Councilor and neighborhood association, and all property owners within 300 feet of the proposed urban farm. The BRA will accept comments from those groups for 14 days, and relevant comments addressing design only will be taken into consideration as part of the review.

Although CFR does impose certain guidelines and requirements for

a farm plan which are mentioned below, CFR cannot stop a farm from moving forward when it is an allowed use. Within no more than 45 days of receiving and reviewing the complete farm plan application, the designer will stamp the completed farm plan design package. The farmer can then submit it to the Inspectional Services Department (ISD) along with any other relevant and required approvals from other city affiliates for issuance of a use and occupancy permit.

DESIGN REQUIREMENTS

*There are certain requirements for urban farms that **must** be met; otherwise, they may be subject to inspection.*

Screening

Composting and loading and disposal areas abutting public streets, public parks, or residential zones or uses must be screened from view. Farms may use fencing, walls, or natural landscaping as screens, which must be at least 50% opaque and between 3' and 6' in height.

Maintenance

Farms should be well-maintained, especially in the off-season. Dead and spent organic materials should be composted or removed if possible. Farms should try to use indoor storage for materials, and supplies and parking should not be visible from the public way if possible.



ReVision Urban Farm - Victory Programs, Dorchester, MA
Half-acre in size

DESIGN GUIDELINES

*The majority of CFR involves recommended guidelines that, if followed, can help farms thrive in an urban setting and be good neighbors. The guidelines recommend materials, layout, and lighting. In general, the guidelines reflect the principle that urban farms should take into account the special characteristics of the site and the character of the surrounding neighborhood. For a detailed list of guidelines, please consult **Article 89, Section 6**.*

Site Plan

Urban farms should be planned to enhance the areas facing the street and surrounding spaces. Driveways should be sited to minimize traffic impacts. Activities such as composting, storage, parking, and disposal should be located in the rear of side yards rather than the front, and be adequately screened.

Fencing

Fencing should be made of masonry, pickets, decorative metal, post

and rail, wrought iron, shadow box, coated chain link, or board-type wood. Plywood sheeting or uncoated metal chain link fences are discouraged.

Landscaping

Landscaping, especially if street-facing, should be compatible with the surrounding environment. Newly planted trees and shrubbery should be of sufficient height and size to screen while keeping in mind the need for sun penetration to crops. Unless they will interfere with farming, mature trees

and shrubs should be maintained unless this is not possible.

Lighting

Lighting should be limited to what is required for safe operation while not creating a nuisance to neighboring properties. A lighting schedule and plans to mitigate fugitive light should be provided.

Materials

Greenhouses and hoophouses should be mostly transparent and secured to the ground.



Hoophouse in construction; all farm structures will be reviewed under CFR



Fencing will be reviewed under CFR



The layout of this roof-level open air urban farm would be reviewed under CFR

ADDITIONAL REVIEW

Other types of review already exist for development in certain neighborhoods, and may also apply to any proposed urban farm proposal. Besides the permits and regulations discussed elsewhere in the guide for activities such as composting and keeping animals, the following types of review may apply in certain parts of the city.

Neighborhood Design Review

Some neighborhoods have adopted zoning that requires design review for buildings, even if they conform to the zoning, just to ensure compatibility with neighborhood character and design. If the urban farm is an allowed use and will include farm structures larger than 750 sf in Roxbury, Roslindale, or Hyde Park, it will require Neighborhood Design Review from the BRA even if it is not required to go through CFR. In essence, Neighborhood Design Review and CFR will be similar in process and design review standards. In both cases, abutters will be notified and there will ensue a 10-day comment period in which abutters can provide feedback for the proposed urban farm. Similar design materials will need to be submitted to the BRA for a complete design package.

NDOD Design Review

Additionally, Boston has established Neighborhood Design Overlay Districts (NDOD) in certain residential communities in the city to preserve their historic architectural character

and protect pedestrian environments. In an NDOD, farm structures of greater than 300 sf that are visible from a public street or public open space will trigger BRA Design Review. All roof-level farms and rooftop greenhouses in an NDOD will have to undergo BRA Design Review. Check with the BRA to see whether the property is within an NDOD.

Historic District Review

The Boston Landmarks Commission conducts a separate review of development in Historic Districts, which are listed below.

- Aberdeen Architectural Conservation District
- Back Bay Architectural District
- Bay State Road/Back Bay West Architectural Conservation District
- Bay Village Historic District
- Historic Beacon Hill District
- Fort Point Channel Landmark District
- Mission Hill Triangle Architectural Conservation District
- South End Landmark District
- St. Botolph Architectural Conservation District

Department of Parks and Recreation

To manage traffic congestion, enhance air quality and vegetation, and preserve open space and scenic natural areas, properties along some Boston roadways fall within Greenbelt Protection Overlay Districts (GPOD). Urban farms being proposed in GPODs require review by the Department of Parks and Recreation. Please contact the BRA to determine whether the property is in a GPOD.

Boston Conservation Commission

Within one hundred feet of a wetland, floodplain, or waterbody, an urban farm will require review by the Boston Conservation Commission. Please contact them at (617) 635-3850 if the urban farm is located near a wetland or waterway.

Boston Water and Sewer Commission

All farm plan applications will need to be reviewed by the Boston Water and Sewer Commission, especially if the urban farm will require tapping into the City's water system.



➤ FARMING PRACTICES



*The Food Project - Langdon Street
Roxbury, MA
26,100 SF*

SOIL SAFETY

Soil contamination is a common concern for growing vegetables and other edible plants in urban soil.

Much of the land in U.S. cities has some level of soil contamination, and Boston is no exception. Common contaminants include lead, cadmium, arsenic, zinc, and polycyclic aromatic hydrocarbons (PAHs). Once contaminants find their way into soil, they can be difficult to extract and can pose health risks. Testing, removing and disposing contaminated soil can be expensive. Fortunately, there is a less expensive and safe way to prevent harmful exposure to soil contaminants (see following section on the raised bed method).

The greatest risk to humans from contaminated soil is from ingesting small amounts of soil through the mouth or from breathing in airborne dust. Skin contact with soils containing certain contaminants

can also pose health risks. Some edible plants take up and accumulate contaminants in their roots, shoots, and leaves. For example, root vegetables (such as carrots and beets) have a higher potential for accumulating contaminants. Green leafy vegetables such as cabbage, collards, and kale can accumulate lead on the exterior of their shoots and leaves. However, there is generally minimal risk from eating most plants grown in contaminated soil. The *main risk* is from eating plants without washing them first.

Since 1991, the City of Boston has been successful in reducing the incidence of lead poisoning for children under six years of age from 42.3% to less than 1% in 2010. Through the work of the Boston Public Health Commission (“BPHC”), the City of Boston has been a leader on this issue and continues to be a leader in developing Soil Safety Guidelines for Commercial Urban Farming. For more detail on soil safety, see **Article 89, Section 7**.

Raised Bed Method

The Environmental Protection Agency (EPA) has adopted a Best Practice Method, known as the “Raised Bed Method,” for dealing with soil safety issues in urban environments. A raised bed is a contained volume of clean, imported soil built atop a geotextile barrier (a type of synthetic landscape fabric with limited permeability) to cover the ground surface. This barrier allows for water drainage but prevents root uptake from the contaminated soil below. This method has a proven track record of safely and effectively minimizing exposure to contaminated soil.



Raised beds without frames on Lucerne Street in Dorchester, MA

The Boston Public Health Commission (BPHC) recognizes the value of urban farming from a public health perspective, but also acknowledges the health risks from potentially contaminated urban soils. For this reason, BPHC has developed the following Soil Safety Guidelines for Commercial Urban Farming.

Soil Safety Guidelines for Commercial Urban Farming

All commercial urban farms in the City of Boston must obtain “certification of compliance” with the Soil Safety Guidelines for Commercial Urban Farming.

The following steps must be taken to ensure soil safety:

When using the raised bed method:

- Place a commercial grade geo-textile fabric over the existing native soil.
- Form raised beds. If using lumber to form a raised bed, untreated wood should be used.
- Import clean soil for the raised beds. Before importing the soil to the farm, have the soil tested using a laboratory that can test according to specified US EPA testing methods. This includes soil or soil amendments, like compost, that is added in subsequent growing seasons after the initial inception of the farm.
- Submit the lab test results to Boston Public Health Commission.

If intending to grow in native soil:

- Submit documentation that the site has undergone an environmental site assessment by a Qualified Environmental Professional or Licensed Site Professional. Such an assessment can involve significant costs; therefore, the raised bed method is usually preferred.

In terms of the actual permitting process, the following steps must be taken:

- As part of the Use and Occupancy Permit for an Urban Farm, complete a Commercial Urban Farming Soil Safety Compliance Certificate Application with the BPHC.
- The BPHC will review the Commercial Urban Farming Soil Safety Compliance Certificate Application.
- Once all requirements of the Commercial Urban Farming Soil Safety Compliance Certificate Application are satisfied, BPHC will provide a letter to ISD to certify compliance.
- Once it receives the letter from BPHC, ISD will issue the Use and Occupancy Permit.

All commercial farmers should consult the BPHC’s Soil Safety Guidelines for Commercial Urban Farming, available at <http://www.bostonredevelopmentauthority.org/getattachment/d37db157-5bc8-479c-aa73-dc462441519a>



COMPOSTING

Rich, clean soil is a necessity for urban farms.

Farmers can increase the quality of their soil by composting, which uses decomposing leaves, grass, and other spent growing materials to provide a natural fertilizer. Composting reduces the solid waste destined for landfills and can provide an excellent, inexpensive, and organic soil nutrient.

Farmers must carefully manage their composting to avoid creating nuisances for themselves and their neighbors. By following the composting requirements of Article 89, state regulations and several best practices, farmers in Boston can create more fertile growing environments while avoiding odors and pests.

If compost or other organic material is being brought to a farm to amend the soil, that material must be tested in accordance with the BPHC's Soil Safety Guidelines for Commercial Urban Farming (immediately aforementioned).



A well-maintained ground-level composting bin

COMPOSTING ON A GROUND LEVEL FARM

Article 89 is intended to allow farmers to compost enough on their farms to support farming activity on site (as opposed to supporting farming on another farm). Article 89 refers to this practice as “accessory composting” because it is not the primary use of the lot, which is farming. Article 89 establishes the following requirements for accessory composting on ground level urban farms:

- Accessory composting is allowed on any urban farm.
- Accessory composting may only occupy up to 7.5% of a ground-level farm property.
- No composting operations or structures may be placed within 5 feet of property lines.
- If the farm is in a residential or commercial zone, no composting operations or structures may be located in the front yard or a side yard abutting a street.

A **PRIMARY** use is one that encompasses more than 25% of the lot

An **ACCESSORY** use encompasses up to 25% of the lot



ROOF-LEVEL COMPOSTING

Farms that practice onsite composting will use **COMPOST BINS**. The placement and use of compost bins is discussed in Article 89, Section 8.



Roof-level composting must be contained within enclosed bins

ROOFTOP FARM COMPOSTING

Article 89 allows accessory composting on any rooftop farm. Because of concerns about heat and safety, however, any composting on a roof level farm must be contained within an enclosed bin to prevent nuisances and fire hazards. Composting bins may not occupy more than 7.5% of the roof area.

COMPOSTING FOR COMMERCIAL PURPOSES

Under limited circumstances, Article 89 permits larger composting operations for commercial purposes—that is, composting to sell or distribute to other commercial farmers and/or gardeners. In such instances, composting would be considered a *primary use* on the lot.

Composting as a primary use necessarily involves significant amounts of compost and requires

special knowledge and expertise to manage. Also, any commercial composting operation must obtain special permits under the Site Assignment Regulations for Solid Waste Facilities (310 CMR 16.00) administered by the Commonwealth of Massachusetts Department of Environmental Protection. In recognition of its complexity and the special knowledge and expertise required, composting as a primary use is restricted to industrial zones as a conditional use only. Otherwise, composting as a primary use is forbidden.

PERMITTING

For an explanation of conditional uses and conditional use permits, please see page 7.

Accessory composting must also be registered with the Massachusetts Department of Agricultural Resources (MDAR) under the Agricultural Composting Program, 330 CMR 25.00.



Hydroponic growing at S&S Urban Acres
Fall River, MA

HYDROPONICS

Hydroponics is the cultivation of plants in a solution of circulating, nutrient-rich water rather than in soil.

Hydroponics allows more efficient, flexible, and denser cultivation than does conventional plant agriculture. The direct application of water to plants reduces water loss from evaporation or runoff and enables greater precision in nutrient application. The lack of soil allows for greater plant density and mobility. Climate control allows plants to be grown in non-native regions year round. Article 89 simplifies access to these opportunities by establishing more permissive use regulations for hydroponics in many parts of the city.

Properly disposing of water that may contain waste matter, pesticides, or antibiotics presents a challenge to hydroponics. Hydroponic practices must comply with relevant state and federal laws regarding water discharge.



*Basil growing in vertical towers using LED lighting
Freight Farms™ - Boston, MA*

REQUIREMENTS

Given that hydroponics activities do not involve the cultivation of fish, Article 89 supports them in many zones as shown in the table in this page. Hydroponics as a *primary use* is *allowed* in all zones except residential zones, where they are a conditional use. The exception is when hydroponics activities are a primary use in *freight containers* - the use regulations are somewhat more restrictive in this case especially in the more sensitive residential and mixed-use zones. Hydroponics as an *accessory use* is *allowed* in all zones. Again, where hydroponics as an accessory use occurs in *freight containers*, the use regulations are somewhat more restrictive for the same reason mentioned above.

Hydroponics practitioners must follow federal and state guidelines about water use and discharge noted on **page 28 of Article 89**.

DESIGN REVIEW

Any hydroponics facility that involves the construction or addition of more than 750 square feet is subject to BRA Design Review.

PERMITTING

For an explanation of conditional uses and conditional use permits, please see page 7.

For more information on hydroponics, see **Article 89, Section 11**.

A **PRIMARY** use is one that encompasses more than 25% of the lot

An **ACCESSORY** use encompasses up to 25% of the lot

HYDROPONICS	PRIMARY USE		ACCESSORY USE	
	Use Regulation	Exception: Freight Containers	Use Regulation	Exception: Freight Containers
Industrial	Allowed	Allowed	Allowed	Allowed
Institutional	Allowed	Conditional	Allowed	Allowed
Large Scale Commercial	Allowed	Conditional	Allowed	Allowed
Small Scale Commercial	Allowed	Conditional	Allowed	Conditional
Residential	Conditional	Forbidden	Allowed	Forbidden

AQUACULTURE & AQUAPONICS

Aquaculture is the cultivation of fish and shellfish in a controlled environment.

Aquaculture systems come in many configurations, densities and scales depending on the type of facility and the fish being raised.

Well-managed aquaculture can produce large quantities of fish from relatively small systems.

Aquaponics is the cultivation of fish and plants together in a closed environment.

Aquaponics uses natural processes to convert fish waste to nutrients for plant growth. In addition to all the benefits of aquaculture and hydroponics, aquaponics has the advantage of a self-filtering cycle that requires less water, produces less wastewater, and reduces maintenance and cleaning.



*Aquaculture facility cultivating barramundi (Asian seabass)
Australis - Turner Falls, MA*

Article 89 simplifies access to aquaculture and aquaponics by permitting these uses in many different zones throughout the City, including permitting small-scale facilities in residential

zones. Because they both involve the cultivation of fish, aquaponics and aquaculture are treated essentially the same way by Article 89.

REQUIREMENTS

Primary Use

As shown in the table on this page under Article 89, aquaculture and aquaponics facilities as a *primary use* are allowed in industrial and waterfront commercial zones, are conditional in institutional and commercial zones (except Waterfront Commercial), and are forbidden in residential zones*.



Outdoor aquaculture tanks at William McKinley High School - Honolulu, HI

Accessory Use

Aquaculture and aquaponics facilities as an *accessory use up to 750 square feet* are allowed in all zones*, with the exception of those cultivated in freight containers, to which more restrictive use regulations apply especially in the more sensitive residential and mixed-use zones (see table). Aquaculture and aquaponics facilities as an *accessory use larger than 750 square feet* are allowed in industrial, institutional and large scale commercial zones, and are conditional in small scale commercial and residential zones, with the exception of those cultivated in freight containers, to which more restrictive use regulations apply for the same reason mentioned above (see table on next page).



An accessory aquaponics system up to 750 SF would be allowed in all residential zoning districts

***Note:** There are two exceptions to the above: in East Boston (Articles 53) and South Boston (Article 68) aquaculture facilities as a primary or accessory use are expressly forbidden. Modifying the applicable zoning in these neighborhoods to be consistent with Article 89's provisions for aquaculture and aquaponics in the rest of the City would require neighborhood specific zoning amendments for each of these neighborhoods.



Indoor aquaponics facility at Growing Power in Milwaukee, WI



Indoor aquaponics facility

AQUACULTURE/ AQUAPONICS	PRIMARY USE	ACCESSORY USE (up to 750 SF)		ACCESSORY USE (>750 SF)	
	Use Regulation	Use Regulation	Exception: Freight Containers	Use Regulation	Exception: Freight Containers
Industrial	Allowed	Allowed	Allowed	Allowed	Allowed
Institutional	Conditional	Allowed	Allowed	Allowed	Allowed
Large Scale Commercial	Conditional ¹	Allowed	Allowed	Allowed	Allowed
Small Scale Commercial	Conditional	Allowed	Conditional	Conditional	Conditional
Residential	Forbidden	Allowed	Forbidden	Conditional	Forbidden
¹ Allowed in Waterfront Commercial					

MARKETS AND SALES

The focus of Article 89 is commercial agriculture and farming and not backyard gardening. Urban farms will sell food whether they are a vendor at a local farmers' market, or on site at the farm itself. The farm may also sell to a local restaurant or grocery store.

FARMERS' MARKETS

Over the past six years, the number of farmers' markets in Boston has increased, from 13 in 2004 to over 28 markets in 2013. With assistance from the Mayor's Office of Food Initiatives, the Health Division of the Inspectional Services Department administers a very successful farmers' market program.

Under Article 89, farmers' markets are a defined use and are allowed anywhere in the city where a retail use is allowed by the underlying zoning. Otherwise, they are a conditional use.



Farmers' Market in Boston, MA



Farm stands are allowed where urban farms are allowed

FARM STANDS

Urban farms may sell their produce to stores and restaurants, and provide produce at a farm stand for the average city resident to buy. Farm stands are now recognized and defined in Article 89. Accessory farm stands

not exceeding 200 square feet in floor area (for example, 40' x 50' of counter space) are allowed wherever urban farms are allowed and wherever else retail is allowed by underlying zoning. Otherwise,

farm stands are conditional and require a trip to the Zoning Board of Appeals (4-6 month process). Farm stands must be placed so as not to encroach onto sidewalks, driveways or other rights of way.

Applicable regulations for farm stands are found in **Section 89-12 of Article 89.**

➡ KEEPING OF ANIMALS



BACKGROUND

Even before the adoption of Article 89, the existing Boston Zoning Code already set forth use regulations for the keeping of animals (definition includes the following animals “...horses, cows, goats, poultry, pigeons, rabbits, bees, or similar animals other than pigs”). The map on page 53 of this guide shows where the keeping of animals is allowed, conditional or forbidden in Boston. A larger scale version of this map is available on the BRA website at <http://www.bostonredevelopmentauthority.org/getattachment/4d013882-a5cc-4f2e-bc88-2a0fc3072ab6>.

In those neighborhoods of Boston where older zoning referred to the Base Code applies (such as Back Bay, Beacon Hill, Downtown, Fenway, and South Boston), the backyard keeping of hens and bees is generally conditional. In other neighborhoods where the Base Code has been replaced by more recent zoning articles (such as Jamaica Plain, Hyde Park and Roxbury), the keeping of animals is generally conditional in commercial and industrial zones and otherwise forbidden. As shown on the

map, in certain zones, the keeping of animals is even allowed—but these areas are few and far between.

After The Passage of Article 89

Article 89 did not change the underlying use regulations for the keeping of animals, specifically hens and bees, that were already in effect prior to Article 89’s adoption. In other words, the colors on the map did not change with the passage of Article 89. What is new in Article 89 are more specific numerical and dimensional conditions that apply for coops and hives (only) when the keeping of animals (i.e., chicken hens and bees addressed only in

Article 89) is a conditional use.

*Note: Zoning for the keeping of animals *besides* hens and bees

is not addressed in Article 89. Independent of zoning, a permit to keep a coop or a hive in your backyard is required through

ISD’s Health Division. Thus, after an approval is provided at the ZBA (if applicable) to keep your coop or hive, you still need to get a permit at ISD.

How To Change The Use Regulations For The Keeping Of Animals

To change the use regulations for the keeping of animals (that is, to change whether they are allowed, conditional or forbidden), there are two different remedies depending on whether the Base Code applies or not. For areas of the City covered by the Base Code, a single zoning amendment could be made to change the use regulations for all zones covered by the Base Code. For all other neighborhoods not covered by the Base Code, a zoning amendment would be required for *each neighborhood article*—for instance, for Jamaica Plain, an amendment would be required to Article 55, the Jamaica Plain Neighborhood District (Article).

NEIGHBORHOOD PETITION PROCESS



Local beekeeper Noah Wilson-Rich

The zoning amendment process is summarized here:

1. The Applicant should be a Neighborhood Council, or an individual, group of individuals or an organization that can demonstrate support of neighborhood groups, associations, and business groups that are recognized by the Mayor's Office of Neighborhood Services (MONS).
2. The Applicant submits a request for a zoning text amendment to the BRA's Zoning Department demonstrating majority support for neighborhood groups and organizations recognized by MONS. This support would best be demonstrated through letters of support.
3. The BRA schedules up to two community meetings for neighborhood review of the proposed zoning text amendment and places a notice of the meeting in the Boston Herald and relevant local newspaper.
4. The Applicant assumes responsibility for disseminating information to neighborhood residents, constituents and stakeholders about the merits of the proposal and championing the project in the neighborhood.

Applicant also assumes a lead role in BRA-lead community meeting(s) as champion of the proposed zoning text amendment. The BRA's role in community meeting(s) will be to explain the procedural and technical aspects of the proposed zoning text amendment.

5. Given there is documented support and success at the community meeting(s), the zoning amendment will go before the BRA Board, which, if approved, will move the zoning amendment to the Zoning Commission for a public hearing.

6. The Zoning Commission conducts a public hearing on the proposed zoning text amendment. If more than one neighborhood were interested in pursuing a zone change related to the keeping of animals and/or bees at the same time, it may be possible to consolidate the public hearings before the Zoning Commission and BRA Board.

7. The mayor of Boston signs zoning text amendment, it becomes incorporated into the Boston Zoning Code, and is effective immediately.





STRUCTURES FOR ANIMALS



A local coop in Somerville, MA

A **COOP** is an enclosed shelter in which a chicken lives.
See Article 89, Section 9 for guidelines for chicken coops.

*Note: Article 89 only addresses chicken hens - not other types of poultry (e.g., guinea fowl, pigeon, etc.)



Rooftop hives on the InterContinental Hotel Boston

A **HIVE** is a manufactured receptacle or container prepared for the use of honey bees that includes movable frames, combs, and substances deposited into the hives by honey bees.

HENS

Backyard chicken hens provide an inexpensive source of fresh, great tasting and nutritious eggs.

Hens also produce excellent fertilizer, help control weeds and bugs, and make good pets. For their own well-being, as well as for the happiness of neighbors, hens must be properly maintained and cared for. Article 89 conditions for hens are designed to maximize the health and productivity of hens and minimize problems for owners and neighbors. The following are conditions that exist if (and only if) the keeping of animals is a conditional use in your neighborhood today. However, these conditions for hens may be tailored to individual neighborhoods that are seeking to change the underlying use regulations for the keeping of

Coop and Run Conditions

animals (process aforementioned).

- *Maximum Height:* 8 feet
- *Maximum Footprint:* 48 square feet
- *Coop Area:* Minimum 2 square feet per hen, and 1 nest box for every 3 hens. *Runs:* Minimum 4 square feet per hen. *Yard Area:* Runs cannot occupy more than 25% of a rear yard.
- *Materials:* Must use washable and sanitizable material, like treated wood. Runs must be made of strong material (like wood) and covered in a wire mesh. All runs must be predator-proof.
- *Property Line:* Coops and runs must be set back at least 5 feet. In residential zones, minimum distance from main neighboring

Other Conditions

- building/house is 15 feet.
- Front yards and side yards that border a street are off limits in all residential and commercial zones.
- *Screening* is required for any part of a coop or run that is closer than 5 feet to a property line, that is in a front yard or a side yard, or that can be seen from the street. Screening must include fence that is at least 60% opaque or landscaped buffer least 4 feet tall.
- Free-Ranging of hens allowed ONLY:
 - o In fenced yards
 - o When supervised
 - o With approval of all residents and property owners who have legal access to the premises

For more detail, see **Article 89, Section 9**.



BEES

In their role as pollinators, honey bees help to increase the quantity and quality of plants around the city.

Their honey production, as well as their wax, provide an entrepreneurial opportunity for beekeepers. Because of the rising interest in beekeeping and concern over the recent colony collapse epidemic, many other cities have revised their zoning regulations to allow urban beekeeping, which is now estimated to account for up to 40% of the honey produced in the United States.

Just like the keeping of hens, the following are conditions that exist if (and only if) the keeping of animals is a conditional use in your neighborhood today. However, these conditions for beekeeping may be tailored to individual neighborhoods that are seeking to change the underlying use regulations for



A new natural comb growing within a frame

the keeping of animals (process aforementioned). In addition to the following conditions, all beekeeping must comply with all applicable state and local laws and regulations.

For more details on the keeping of honey bees, see **Article 89, Section 10.**

General Conditions

Hive Limit: 2 (backyard)

Height Limit: 5 feet

Size Limit: 20 cubic feet

Fresh Water Supply: maintained within easy access to all beehives to prevent bees from congregating at other water sources on nearby properties.

Owner Contact Information: visibly posted to be used by a city or state inspector or by a member of the public with questions or concerns.



Example of ground-level beekeeping in a backyard

Setback and Location Conditions

Ground Level Beekeeping

From Property Line: No setback needed if there is a wall, fence, or other barrier at the edge of the property. When there is no such barrier, beehives must be back 5 feet from property line.

From Sidewalks: Beehives cannot be located closer than 10 feet from a public sidewalk.

From Main Building on Neighboring Property: Beehives that are closer than 20 feet to the main building on an adjacent property cannot face that building, unless permission is granted in advance in writing from the owners of the adjacent property. In that case, a 6 foot high flyway must be constructed so that the bees fly upward instead of toward the adjacent property [see **Article 89, Section 10.4(b)**].

Front yards in residential and commercial zones are off limits to beehives. Side yards that border a street are also off limits to beehives.

Rooftop Beekeeping

Setback from Edge of Roof: 6 feet

Setback from Adjacent Building: If the beehive is located within 20 feet of the exterior wall of an adjacent building that has walls as tall as or taller than the roof of the building in questions, a 6 foot tall flyway must be constructed [see **Article 89, Section 10.5(b)**].



Brooklyn based beekeeping advocate, Tim O'Neal, sells his honey at local farmers' markets



➡ APPENDICES



Text

BEST MANAGEMENT PRACTICES AND ADDITIONAL RESOURCES

Below is a resource list to help you learn more about Best Management Practices for the topics covered in Article 89.

General Urban Agriculture Resources

Massachusetts Department of Agricultural Resources

<http://www.mass.gov/eea/agencies/agr/>

Massachusetts Department of Agricultural Resources Good Agricultural Practices (GAP) Audit Program

<http://www.mass.gov/eea/agencies/agr/farm-products/gap-and-ghp-audit-program.html>

University of Massachusetts (U Mass) Extension Nutrition & Education Program

Food Safety

<http://extension.umass.edu/nutrition/food-safety>

University of Massachusetts (U Mass) Extension Nutrition & Education Program

GAP

<http://extension.umass.edu/nutrition/programs/food-safety/programs/good-agricultural-practices>

University of Massachusetts (U Mass) Extension Nutrition & Education Program

GAP Manual

<http://extension.umass.edu/nutrition/programs/food-safety/programs/good-agricultural-practices/gap-manual>

Federal Department of Agriculture (FDA) Food Safety Modernization Act (FSMA)

<http://www.fda.gov/Food/GuidanceRegulation/FSMA/default.htm>

Federal Good Agricultural Practices (GAP)

<http://www.ams.usda.gov/AMSV1.0/HarmonizedGAP>

ATTRA The National Sustainable Agriculture Information Service

<http://www.attra.org>

www.attra.ncat.org

https://attra.ncat.org/attra-pub/local_food/urban_ag.html

<https://www.youtube.com/user/NCATATTRA>

<https://www.facebook.com/pages/ATTRA-Sustainable-Agriculture/134541719898890>

<https://www.facebook.com/pages/ATTRA-Sustainable-Agriculture/134541719898890>

<http://www.pinterest.com/ncatattra/>

SPIN (Small Plot Intensive) Farming

How to maximize small urban and peri-urban lots for farming

<http://www.spinfarming.com/buy/>

<https://spinfarming.com/spincorps/andy-pressman/>

Massachusetts (MASS) Farm Bureau
<http://mfbf.net>

The RUAF (Resource Centres on Urban Agriculture and Food Security) Foundation

The RUAF Foundation is an international network of seven regional resource centres and one global resource centre on Urban Agriculture and Food Security. RUAF is providing training, technical support and policy advice to local and national governments, producer organizations, NGO's and other local stakeholders.

<http://www.ruaf.org>

New England Small Farm Institute

http://www.smallfarm.org/main/for_new_farmers/exploring_the_small_farm_dream/workbook/

Aquaculture

University of Massachusetts Amherst Cooperative Extension

- The UMass Extension Aquaculture Team compiled a handbook describing best management practices for finfish aquaculture
<http://extension.umass.edu/aquaculture/projects/best-management-practices-fish-aquaculture-massachusetts>

Environmental Protection Agency

operating procedures, schedules of activities, maintenance procedures, and other management practices that aquaculture operations can use to prevent or reduce pollution

<http://www.epa.gov/agriculture/anaqubmp.html>

Massachusetts Aquaculture Association

- a trade association formed in 1986 to promote the continued development of shellfish and fish farming, and to improve some of the conditions affecting aquaculture in Massachusetts today

<http://www.massaquaculture.org/>

Massachusetts Department of

Agriculture Resources – maintains a website which compiles information about standards for aquaculture in the state of Massachusetts:

<http://www.mass.gov/eea/agencies/agr/about/divisions/aquaculture-program-generic.html>

ALEARN - Alabama Cooperative Extension System and Auburn College of Agriculture collaborated to create resources for commercial aquaculture practitioners
<http://www.aces.edu/dept/fisheries/aquaculture/BMP.php>

Hydroponics

Texas A&M AgriLife Extension

- information on commercial, home and hobby hydroponic vegetable production, mostly from the TAEX publication on Greenhouse Vegetable Production
<http://aggie-horticulture.tamu.edu/greenhouse/hydroponics/index.html>

Cornell University – Biological and Environmental Engineering – provides Grower's Handbooks for hydroponic production of specific crops
<http://www.cornellcea.com/resourcesPublications/CornellPublications/index.html>

Ohio State University Hydroponic Crop Program - designed to foster hydroponic greenhouse vegetable businesses by providing horticultural, marketing, business planning and greenhouse design support

http://www.oardc.ohio-state.edu/hydroponics/t01_pageview2/Decision_Support.htm

Aquaponics

ATTRA National Sustainable Agriculture Information Service - provides an introduction to aquaponics with brief profiles of working units around the country

<https://attra.ncat.org/attra-pub/summaries/summary.php?pub=56>

University of Hawai'i at Manoa College of Tropical Agriculture and Human Resources – information on food safety concerns and procedures specific to aquaponic production
www.ctahr.hawaii.edu/oc/freepubs/pdf/FST-38.pdf

Aquaponic Gardening: a step-by-step guide to raising vegetables and fish together. - By Sylvia Bernstein. A do-it-yourself home manual, focused on creating your own aquaponic system

Composting

Massachusetts Department of Agricultural Resources - offers a Guide to Agricultural Composting, available at <http://www.mass.gov/eea/agencies/massdep/recycle/reduce/commercial-institutional-and-agricultural-composting.html>

Cornell Waste Management Institute - provides a helpful list of how-to resources for composting at <http://cwmi.css.cornell.edu/smallscale.htm>

Markets & Sales

The many existing farmers' markets in and around Boston offer many models for successful management. The following organizations and contacts may be helpful to anyone looking to join an active market or start a new one:

David Webber, Farmers' Market Coordinator, Massachusetts Department of Agricultural Resources
David.Webber@state.ma.us
(617) 626-1754

Jeff Cole, Executive Director, Federation of Massachusetts Farmers Markets
jeff@massfarmersmarkets.org
(781) 893-8222

Brandie Brooks, Farmers' Market Subcommittee Chair, Boston Collaborative for Food and Fitness:
bostonmarkets@gmail.com
(617) 636-3415

Backyard Hens

Backyard Chickens - is a website devoted to do-it-yourself chicken raising
<http://www.backyardchickens.com/>

Legalize Chickens In Boston - is a local citizens organization working to amend neighborhood zoning codes to allow the keeping of chickens
<http://legalizechickensinboston.org/>

Backyard Bees

Massachusetts Beekeeper Association

Is a member-based association of over 1,200 beekeepers across the state ranging from hobbyists with 1-2 hives to commercial beekeepers with several hundred hives

<http://www.massbee.org/>

Boston Area Beekeepers Club

Is a local Boston area-based beekeeping organization that is newly formed as of March 2014

<https://groups.google.com/forum/m/#!forum/boston-beekeepers-club/>
Contact: Noah-Wilson Rich (Email: Noah@Bestbees.com)

Soil Safety

Boston Public Health Commission's (BPHC) Soil Safety Guidelines for Commercial Urban Farming

- created and implements soil safety guidelines for all urban farms. Compliance with the guidelines is mandatory before ISD can issue final permit(s)

<http://www.bostonredevelopmentauthority.org/planning/planning-initiatives/urban-agriculture-rezoning>

Environmental Protection Agency (EPA)

Produced a document describing best management practices for farming in and around contaminated soils:

http://www.epa.gov/brownfields/urbanag/pdf/bf_urban_ag.pdf

The **EPA** also maintains a website for contaminated site remediation:

www.clu-in.org/ecotools/urbangardens/cfm

Allandale Farms - kits for making raised beds are available for sale

Additional Resources

Boston Zoning Viewer - find out what a property is zoned

<http://gis.cityofboston.gov/zoning/>

Boston Zoning Board of Appeals Process

<http://www.cityofboston.gov/isd/building/appeal.asp>

Boston Fire Department - for specifics of what a Fire Protection Engineering Report needs to include for rooftop farming

Website: www.cityofboston.gov/fire

Email: PublicInfo.BFD@cityofboston.gov

Phone: 617.343.3415

Harvard Food Law and Policy Clinic Roadmap to Permitting Urban Farms

<https://blogs.law.harvard.edu/foodpolicyinitiative/food-policy-initiative-projects/current-projects/boston-urban-agriculture-initiative/>

Fatham Information Design - Urban Agriculture Mapping Project

<http://fathom.info/>

***Other Farmer Support (Funding,
Land Acquisition, Education, Outside
Support)***

[http://www.cityofboston.gov/food/
urbanag/support.asp/](http://www.cityofboston.gov/food/urbanag/support.asp/)

***Conservation Law Foundation (legal
advice for urban farms)***

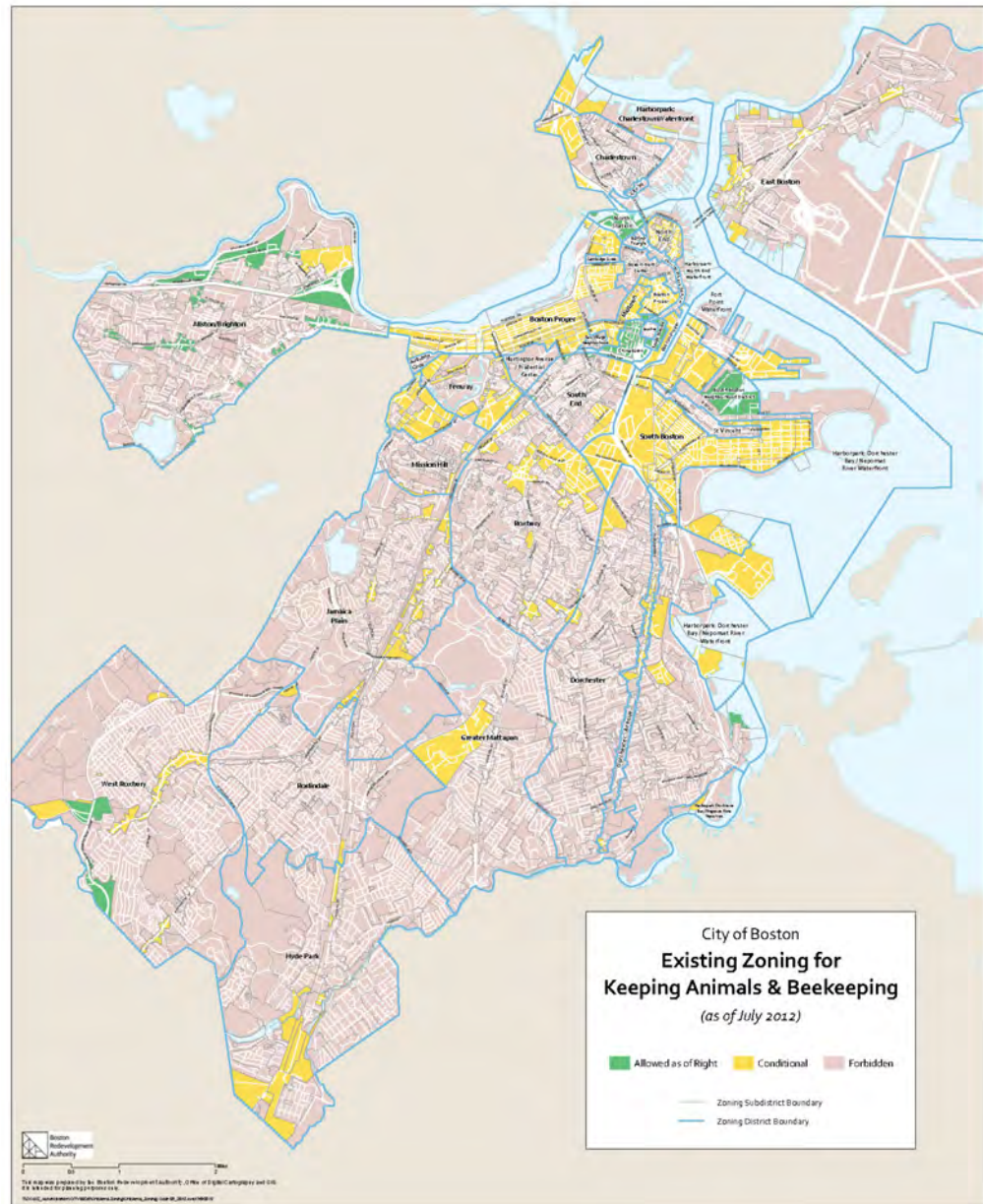
[http://www.clf.org/our-work/healthy-
communities/farm-and-food-initiative/](http://www.clf.org/our-work/healthy-communities/farm-and-food-initiative/)
Contact: Jennifer Rushlow (Email:
jrushlow@clf.org)

***The Community Design Resource Center
of Boston (design advice for urban
farms)***

<http://cdrcboston.org/>

KEEPING OF ANIMALS ZONING MAP

For a larger version of this map, go to
[http://www.bostonredevelopmentauthority.org/
getattachment/4d013882-a5cc-4f2e-bc88-
2a0fc3072ab6](http://www.bostonredevelopmentauthority.org/getattachment/4d013882-a5cc-4f2e-bc88-2a0fc3072ab6)



COMPREHENSIVE FARM REVIEW - SAMPLE SITE PLAN

